

### Dimensions (In.)

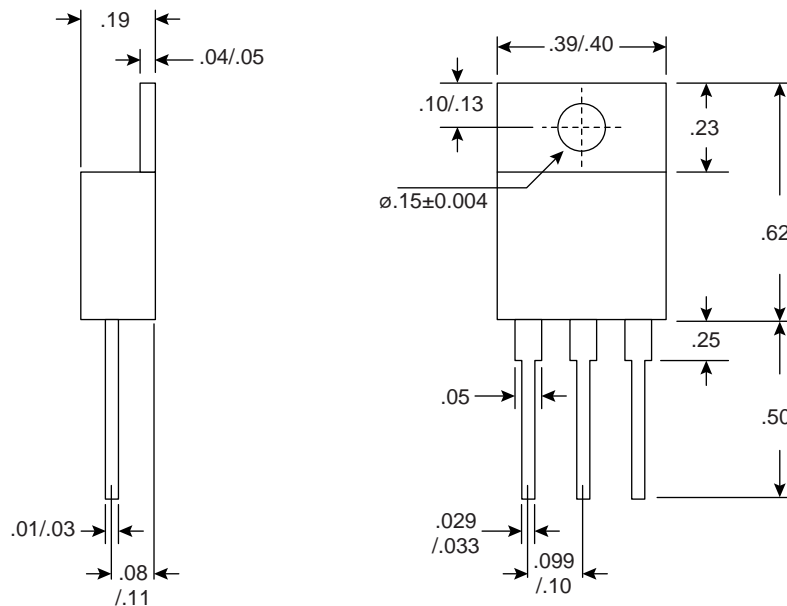
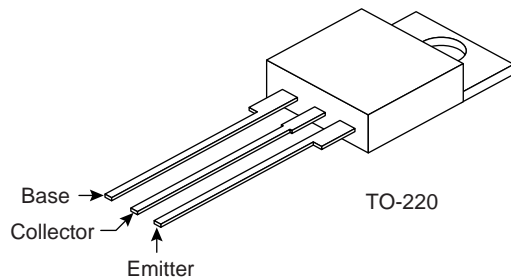
#### Specifications:

- $V_{CE0}$ : 60V ( $I_C = 0.5A$ )
- $h_{FE}$ : 50 (min.) ( $V_{CE} = 1.0V$ ,  $I_C = 100mA$ )
- $V_{CE(sat)}$ : .25V (max.) ( $I_C = 100mA$ ,  $I_B = 10mA$ )
- $f_T$ : 100MHz ( $V_{CE} = 2.0V$ ,  $I_C = 10mA$ )

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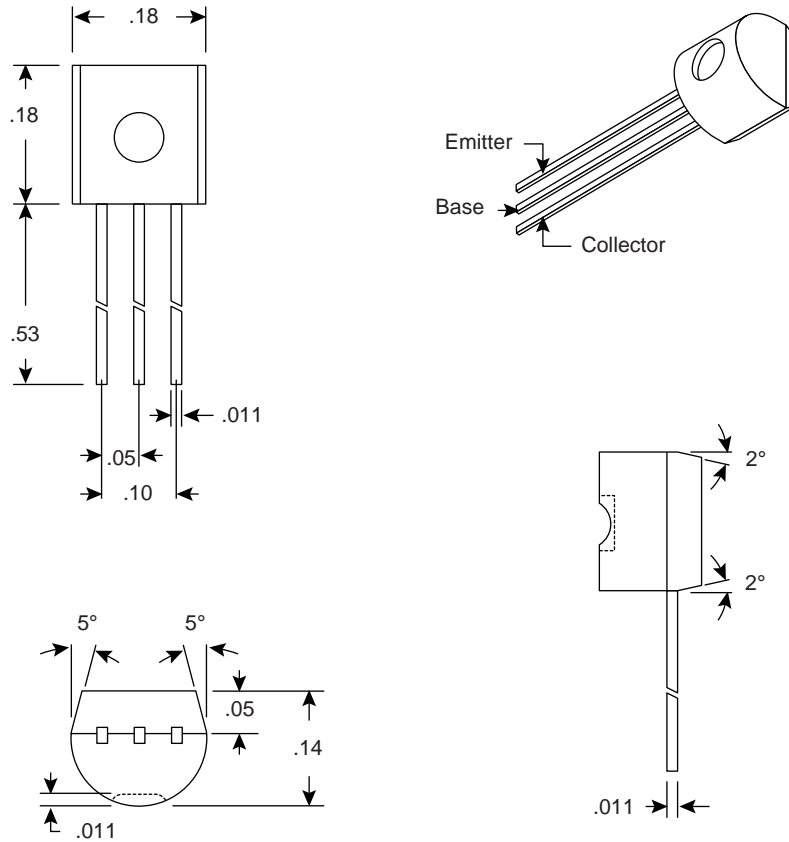
<http://www.mouser.com>



**Dimensions (In.)**  
(min./max.)

**Specifications:**

- Type: NPN power amp
- $I_c$ : 7A
- $V_{CBO}$ : 400V
- $V_{CEO}$ : 200V
- $P_D$ : 60W
- $V_{CE}$  (sat): 1.0V ( $I_c = 6.0A, I_b = 1200mA$ )

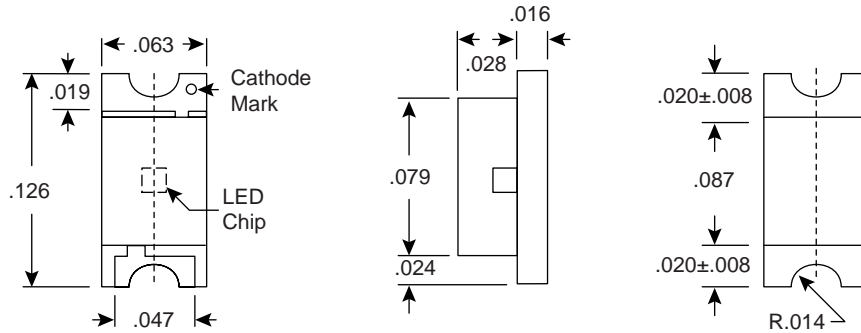


Dimensions (In.)

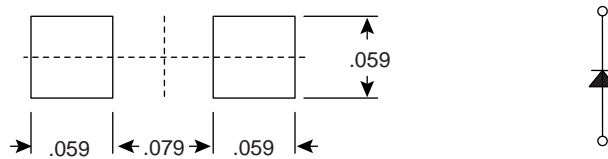
**Specifications:**

- Device type: NPN medium power small signal

Maximum Ratings				Electrical Characteristics (T <sub>A</sub> =25°C)									
V <sub>EBO</sub> min.	V <sub>CB0</sub> V <sub>CEO</sub> min.	I <sub>C</sub> max.	P <sub>D</sub>	I <sub>CB0</sub>	Max. V <sub>CB</sub>	h <sub>FE</sub> min.	I <sub>C</sub>	V <sub>CE</sub>	V <sub>CE(SAT)</sub> min.	I <sub>C</sub>	I <sub>B</sub>	f <sub>T</sub> min.	C <sub>OB</sub> max.
6V	300V	500mA	625mW	100nA	200	40	30mA	10	0.5V	20mA	2.0mA	50MHz	3.0



Reflow Soldering Pattern

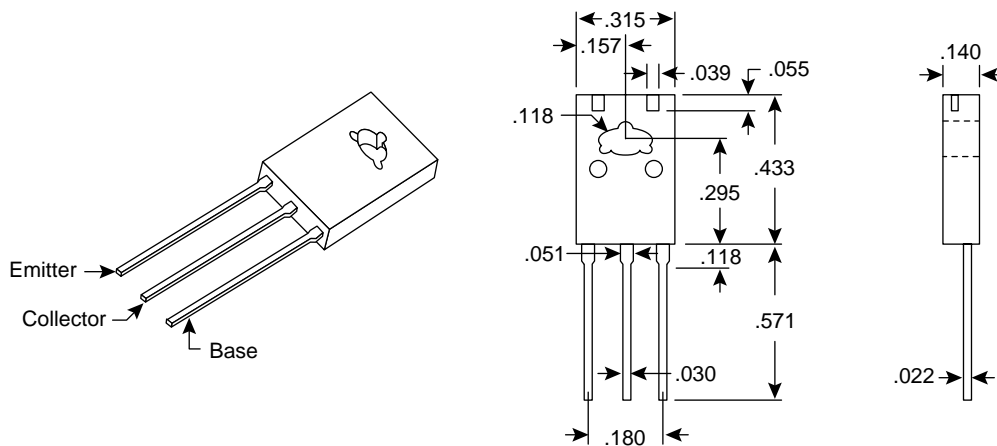


### Dimensions (In.)

#### Specifications:

- Lens color: water clear
- $P_D$ : 65mW
- $I_F$ : 20mA max.
- $I_{PF}$ : 100 (duty = 0.1 1KHz)
- $V_{R(V)}$  @  $I_R = 100\mu A$ : 5
- $T_{opr}$  (°C): -20~+80
- $T_{stg}$  (°C): -40~+85
- Wave soldering: 2 min/160°C or 10s/235°C
- Reflow soldering: 2 min/160°C or 5s/250°C
- Manual soldering: max: power of iron 25W/1S/300°C

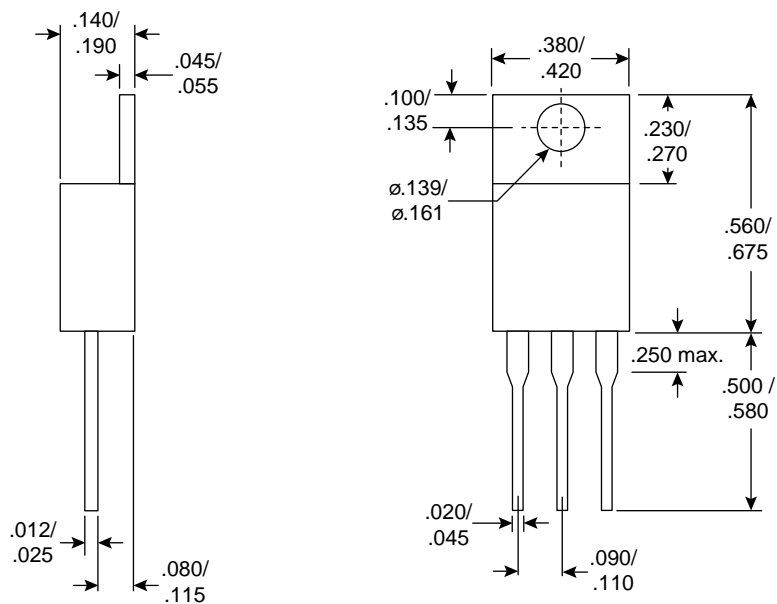
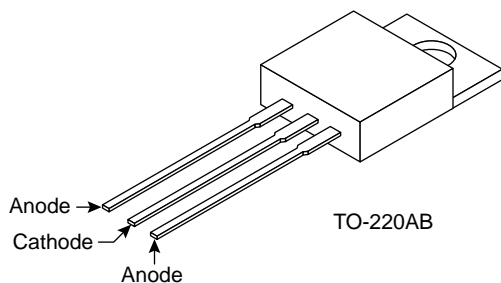
Mouser Stock No.	Emitting Color	$V_F$ Typ/Max	$\lambda_P$	$I_V$ (mcd) Min/Typ
351-1501	Red	1.8/2.8	660nm	3.5/9.0
351-1502	Red	1.8/2.5	66nm	5.5/20.0
351-1503	Green	2.2/2.8	570nm	4.0/16.0
351-1504	Yellow	2.1/2.8	590nm	4.0/10.0
351-1505	Orange	2.0/2.8	635nm	3.0/8.0



Dimensions (In.)

**Specifications:**

- Package type: TO-126
- $I_T(\text{RMS})$ : 4.0A
- $I_R$ : 10 $\mu$ A
- $V_{RRM}/V_{DRM}$ : 333-PCR400-4: 200V ( $I_{GT}$  0.2mA);  
333-PCR400-6: 400V ( $I_{GT}$  5.0mA)
- $V_{GT}$ : 0.8V
- $I_H$ : 5.0mA
- $V_{TM}$ : 2.0V



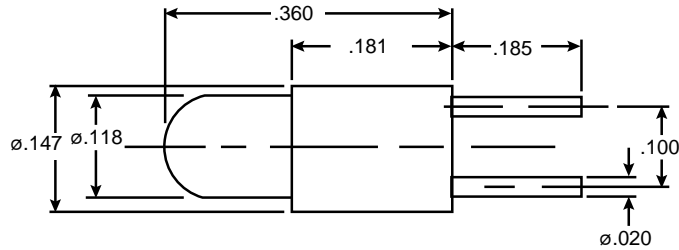
**Dimensions (In.)**  
(min./max.)

**Specifications:**

- Type: silicon controlled rectifiers
- Package type: TO-220AB
- IT (RMS): 12A
- IR: 10 $\mu$ A
- VGT: 2.0V
- VTM: 2.2V

Mouser Stock No.	VRRM /VDRM	IGT	IH
333-PCR012-4	200V	5mA	10mA
333-PCR012-6	400V	15mA	25mA
333-PCR012-8	600V	15mA	25mA

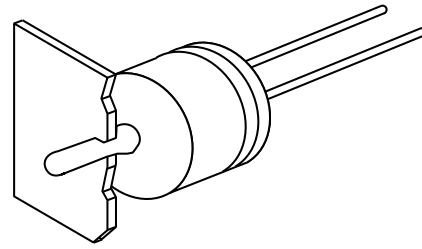
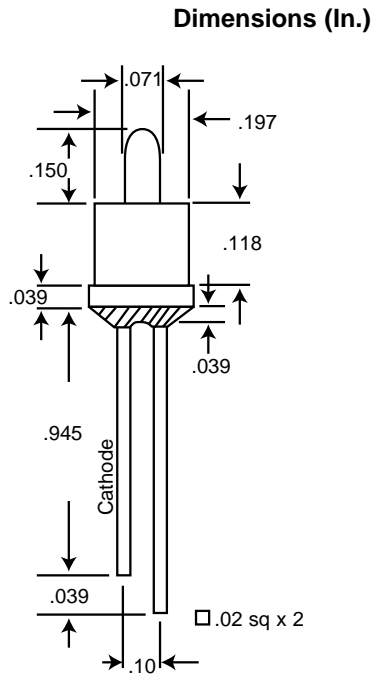
### Dimensions (In.)



Mouser Stock No.	Volts	Amps	M.S.C.P.	Life (Hrs)
352-6121	6	.060	.11	10,000
352-6141	12	.055	.15	10,000
352-6161	28	.024	.15	5,000

\* Replacement bulbs for 107-MS800 series switches

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### Absolute Maximum Ratings (Ta=25°C)

Symbol	Parameter	351-2101	351-2103	351-2104
		Red	Green	Yellow
P <sub>D</sub>	Power Dissipation (mW)	80	100	100
I <sub>AF</sub>	Average Forward Current (mA)	30	30	30
I <sub>PF</sub>	Peak Forward Current (mA)	80	120	80
V <sub>R</sub>	Reverse Voltage (V)	5	5	5
T <sub>OPR</sub>	Operating Temperature Range	-20°C to +80°C		
T <sub>STG</sub>	Storage Temperature Range	-40°C to +100°C		

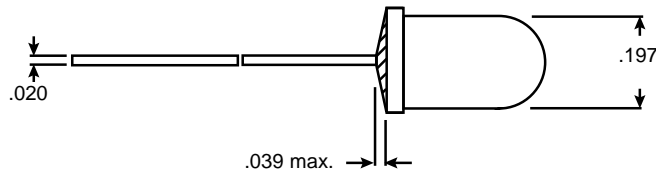
Lead soldering temperature 0.063" from body 260°C for 5 seconds

### Electrical Characteristics (Ta=25°C)

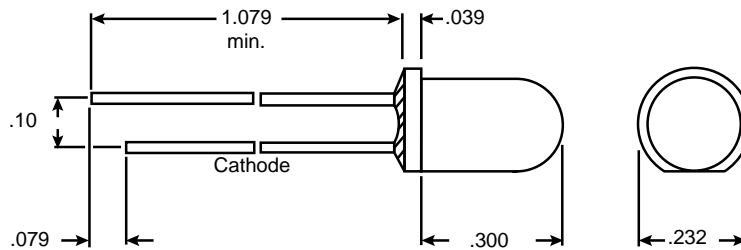
Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (μA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-2101	GaP	Red	Red Diff	2.2	2.8	100	695	0.4	0.9
351-2103	GaP	Green	Green Diff	2.2	2.8	100	570	1.8	4.0
351-2104	GaAsP/GaP	Yellow	Yellow Diff	2.2	2.8	100	590	2.0	4.0

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Dimensions (In.)



**Specifications:**

- Dice material: GaAs
- Lens color: blue

**Absolute Maximum Ratings @ Ta=25°C**

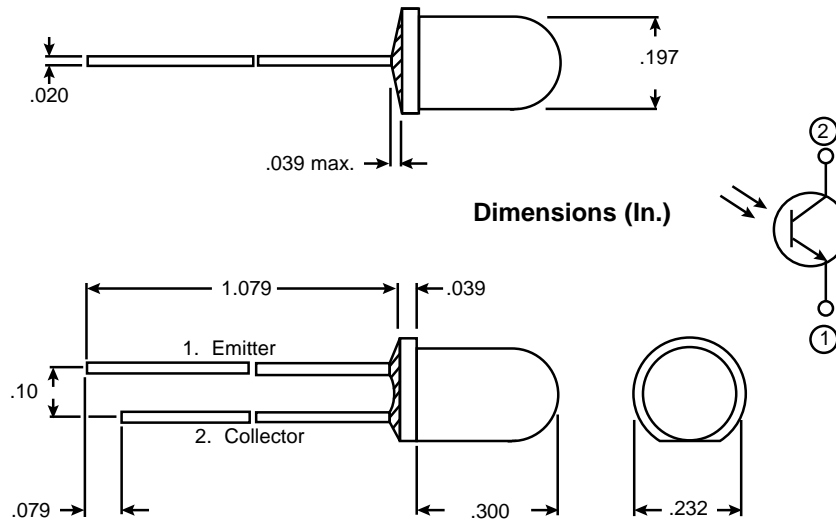
Parameter	
Power Dissipation (mW)	200
DC Forward Current (mA)	120
Peak Forward Current (A)	2.0
Reverse Voltage (V)	5
Operating & Storage Temperature Range	-40°C to +85°C
Lead Solder Temperature .197" below package (case) 260°C for 5 seconds	

**Electrical Characteristics @ Ta=25°C**

Parameter	Symbol	Condition	Min.	Typ.	Max.
Forward Voltage (V)	$V_F$	$I_F=20mA$		1.2	1.5
Reverse Current ( $\mu A$ )	$I_R$	$V_R=5V$			100
Radiant Power (mW)	$P_O$	$I_F=20mA$	1.2	3.0	
Peak Emission Wavelength (nm)	$\lambda_P$	$I_F=20mA$		950	
Spectral Band Width (nm)	$\Delta\lambda_P$	$I_F=20mA$		40	
Viewing Angle to Half Intensity (deg.)	$2\theta_{1/2}$	$I_F=20mA$		25°	
Radiant Pulse Rise Time (ns)	$T_R$	$I_F=1.0A$		400	
Radiant Pulse Fall Time (ns)	$T_F$	Pulse=100 $\mu s$ , Duty=0.01		400	

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**Specifications:**

- Lens color: water clear
- Silicon nitride NPN planar photo transistor

**Absolute Maximum Ratings @ Ta=25°C**

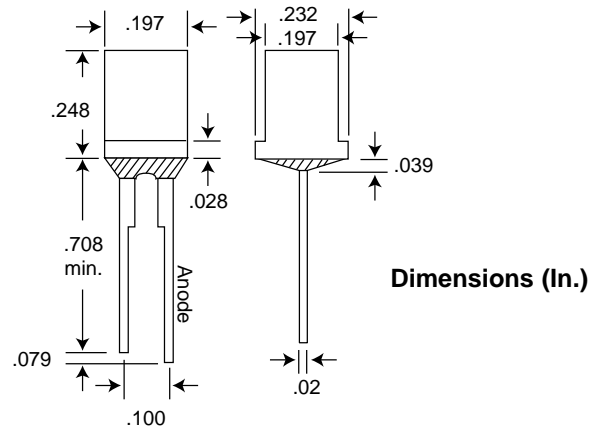
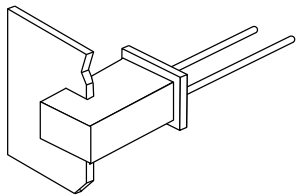
Parameter	
Power Dissipation (mW)	100
Collector-Emitter Voltage (V)	35
Emitter-Collector Breakdown Voltage (V)	6
Collector Current (mA)	50
Operating & Storage Temperature Range	-40°C to +85°C
Lead Solder Temperature .063" below package (case) 260°C for 5 seconds	

**Electrical Characteristics @ Ta=25°C**

Parameter	Symbol	Condition	Min.	Typ.	Max.
Peak Response Wavelength (nm)	$\lambda_{PK}$	$V_{CE}=5V, H=20mW/cm^2$		940	
Collector-Emitter Sustaining Voltage (V)	$V_{CEO(sus)}$	$I_C=100\mu A, H=0$	30	60	
Emitter-Collector Breakdown Voltage (V)	$BV_{ECO}$	$I_C=10\mu A, H=0$	6	8	
Collector- Emitter Saturation Voltage (V)	$V_{CE(sat)}$	$I_C=15mA$			1.3
Collector Dark Current (nA)	$I_{CEO}$	$V_{CE}=20V, H=0$			100
Photo Current (mA)	$I_{CE}$	$V_{CE}=5V, H=2mW/cm^2$	1	2	
Rise Time (10% to 90%) ( $\mu s$ )	$T_R$	$V_{CC}30V, I_L=0.8mA$ $R_L=1K$		5	
Fall Time (90% to 10%) ( $\mu s$ )	$T_F$			5	

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**Specifications:**

- Dice material: GaAsP/GaP
- Light color: red
- Lens color: red diffused

**Absolute Maximum Ratings (Ta=25°C)**

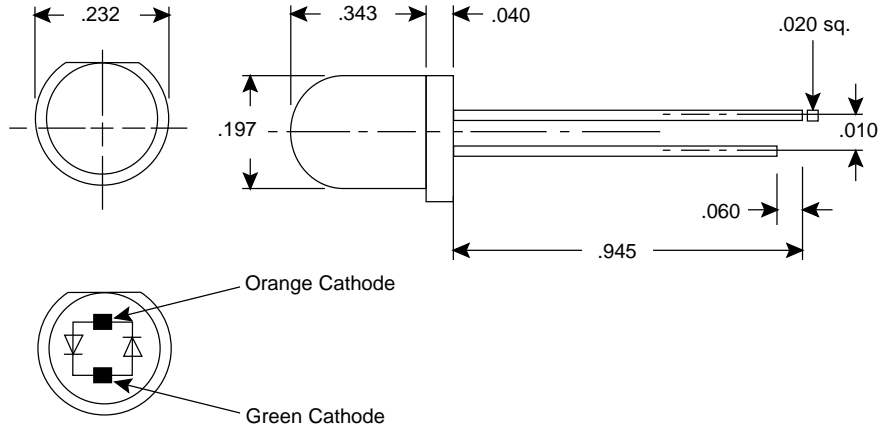
Parameter	Max.	Unit
Power dissipation	110	mW
DC forward current	20	mA
Peak forward current	55	mA
Reverse voltage	5	V
Operating and storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

**Electrical Characteristics (Ta=25°C)**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>F</sub>	Forward voltage	I <sub>F</sub> =20mA		1.65	2.0	V
I <sub>R</sub>	Reverse current	V <sub>R</sub> =5V			100	μA
λ <sub>P</sub>	Peak emission wavelength	I <sub>F</sub> =20mA		655		nm
I <sub>V</sub>	Luminous intensity	I <sub>F</sub> =10mA	0.1	0.3		mcd

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**Dimensions (In.)**



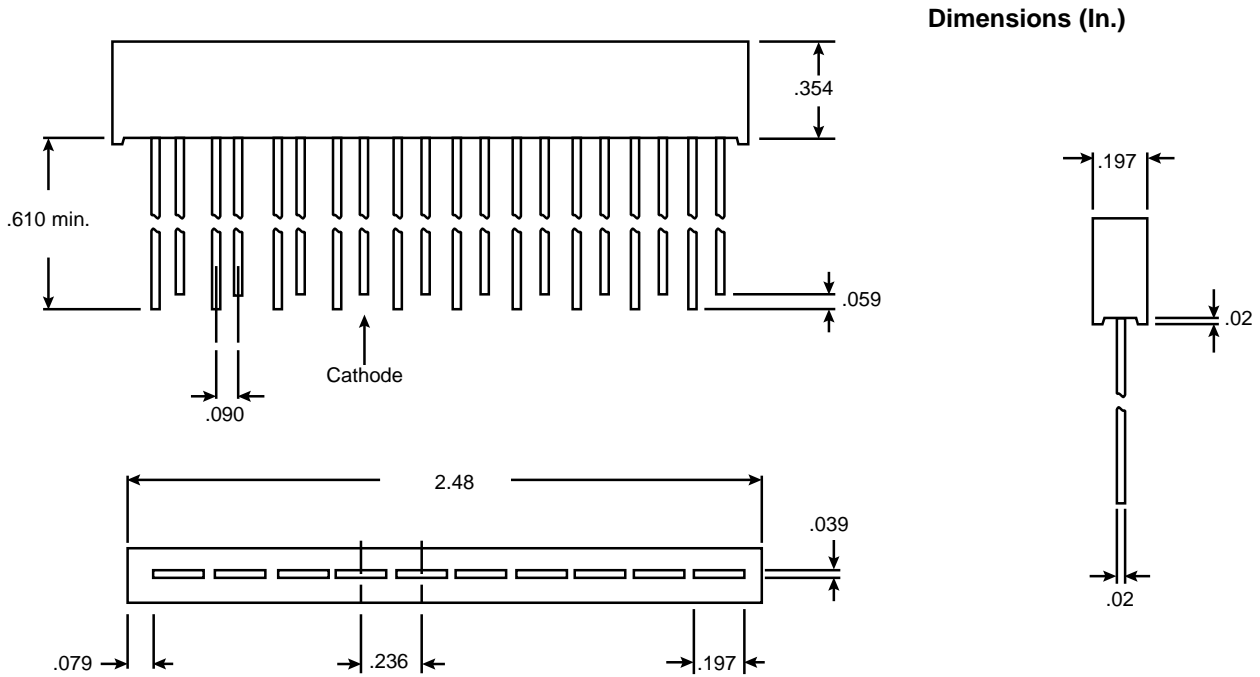
**Absolute Maximum Ratings @ Ta=25°C**

Parameter	
Power Dissipation (mW)	85
DC Forward Current (mA)	30
Peak Forward Current (mA)	100
Reverse Voltage (V)	5
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" below package (case) 260°C for 5 seconds	

**Electrical Characteristics @ Ta=25°C**

Symbol	Parameter	Test Cond.	Orange	Green	Max.
V <sub>F</sub>	Forward Voltage (V)	I <sub>F</sub> =20mA	2.1   3.0	2.1   3.0	
I <sub>R</sub>	Reverse Current (µA)	V <sub>R</sub> =5V			100
λ <sub>P</sub>	Peak Emission Wavelength (nm)	I <sub>F</sub> =20mA	635	567	
2θ 1/2	Viewing Angle (deg.)	I <sub>F</sub> =10mA			120
I <sub>V</sub>	Luminous Intensity (mcd)	I <sub>F</sub> =10mA	3.7	4.3	

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**Material Specifications:**

- Dice material: GaP
- Light color: red
- Lens color: red diffused
- Holder material: ABS plastic

**Absolute Maximum Ratings @ Ta=25°C**

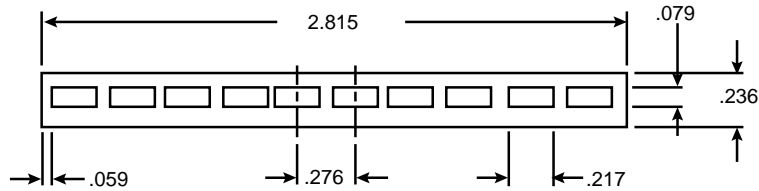
Parameter	Max.
Power Dissipation (mW)	115
DC Forward Current (mA)	20
Peak Forward Current (mA)	55
Reverse Voltage (V)	5
Operating & Storage Temperature Range	-40°C to +80°C
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds

**Electrical Characteristics @ Ta=25°C**

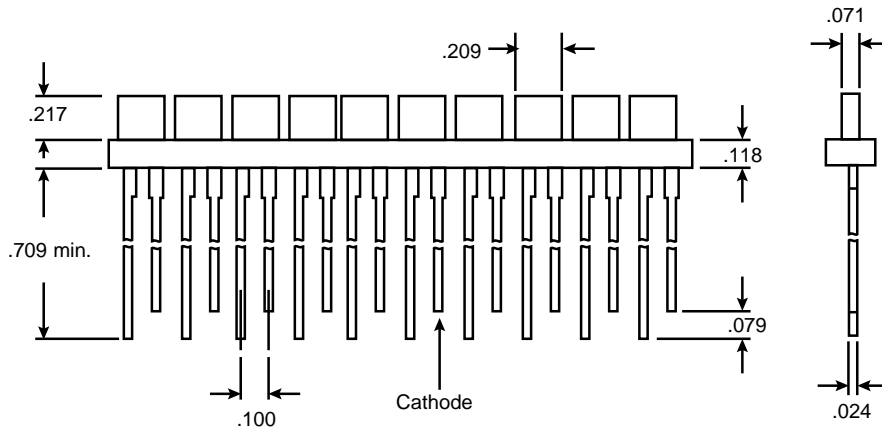
Parameter	Symbol	Test Cond.	
Forward Voltage (typ.) (V)	V <sub>F</sub>	I <sub>F</sub> =20mA	2.2
Reverse Current (max.) (µA)	I <sub>R</sub>	V <sub>R</sub> =5V	100
Peak Emission Wavelength (nm)	λ <sub>P</sub>	I <sub>F</sub> =20mA	565
Luminous Intensity (typ.) (mcd)	I <sub>V</sub>	I <sub>F</sub> =10mA	1.1

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Dimensions (In.)



**Absolute Maximum Ratings @ Ta=25°C**

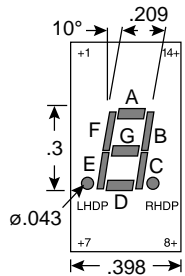
Parameter	351-1811	351-1821	351-1831
Power Dissipation (mW)	120	115	115
DC Forward Current (mA)	20	20	20
Peak Forward Current (mA)	55	55	55
Reverse Voltage (V)	5	5	5
Operating & Storage Temperature Range	-40°C to +80°C		
Lead Solder Temperature .063" below package (case) 260°C for 5 seconds			

**Electrical Characteristics (Ta=25°C)**

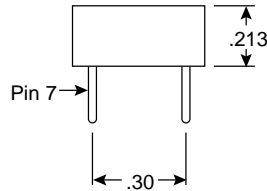
Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Holder Material	Forward Voltage (V) Typ	Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd) Typ
351-1811	GaP	Red	Red Diff	ABS Plastic	2.2	100	695	0.6
351-1821	GaP	Green	Green Diff	ABS Plastic	2.2	100	565	1.6
351-1831	GaAsP/GaP	Yellow	Yellow Diff	ABS Plastic	2.0	100	585	1.4

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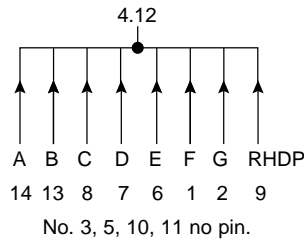
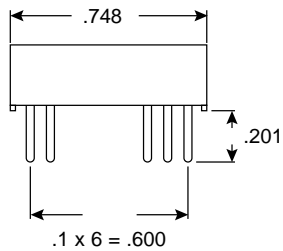
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Dimensions (In.)



Pins are  $\varnothing$ .02



**Absolute Maximum Ratings @ Ta=25°C**

Parameter	Symbol	Bright Red	Unit
Power Dissipation per dice	$P_{AD}$	40	mW
Derating Linear form 25°C per dice		0.20	mA/°C
Continuous forward current per dice	$I_{AF}$	15	mA
Peak current per dice (duty cycle 1/10, 10KHz)	$I_{PF}$	60	mA
Reverse voltage per dice	$V_R$	5	V
Operating temperature (Note 1)	$T_{opr}$	-25 to +85	°C
Storage temperature (Note 1)	$T_{stg}$	-25 to +85	°C
Solder temperature 1/16 inch below seating plane for 3 seconds at 250°C			

Note 1: For taping-type display, maximum temperature is +60°C

**Electro-optical Characteristics (Ta=25°C)**

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward voltage (1die per segment / dot)	$V_F$	$I_F=10mA$	-	2.1	2.6	V
Luminous intensity	$I_V$	$I_P=10mA$	-	800	-	ucd
Peak emission wavelength (Note 2)	$\lambda_P$	$I_F=10mA$	-	695	-	nm
Spectrum radiation bandwidth	$\Delta\lambda$	$I_F=10mA$	-	90	-	nm
Reverse current	$I_R$	$V_R=5V$	-	-	100	$\mu A$

Note 2: The actual wavelenth for different display might vary slightly, due to different tape or resin used.

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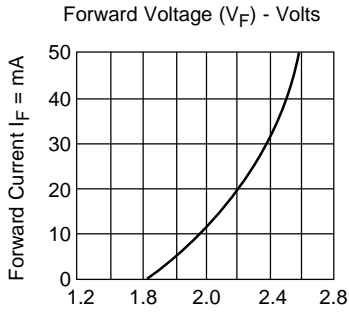


Fig. 1 Forward Current vs. Forward Voltage

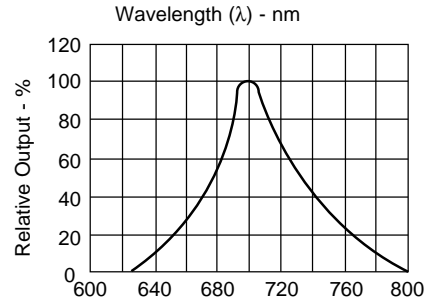


Fig. 2 Spectral Response

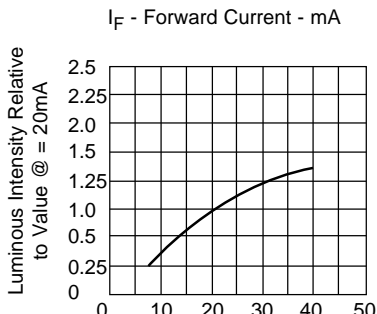


Fig. 3 Relative Luminous Intensity vs. Forward Current

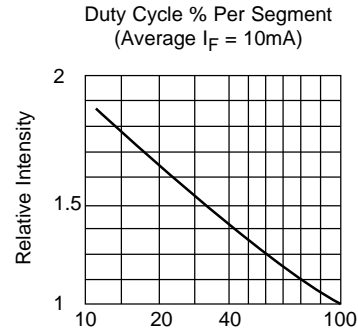


Fig. 5 Luminous Intensity vs. Duty Cycle

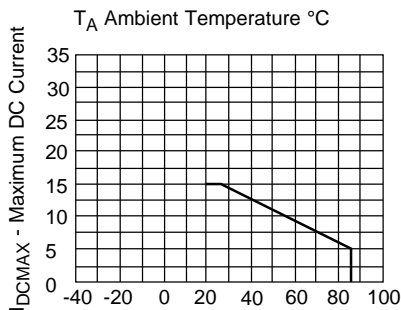


Fig. 4 Maximum Allowable DC Current Per Segment vs. a Function of Ambient Temperature

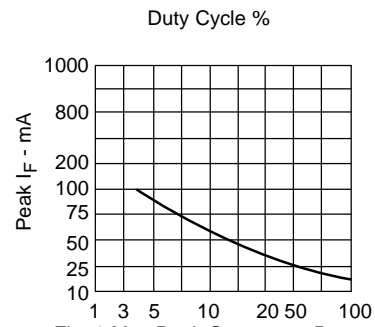


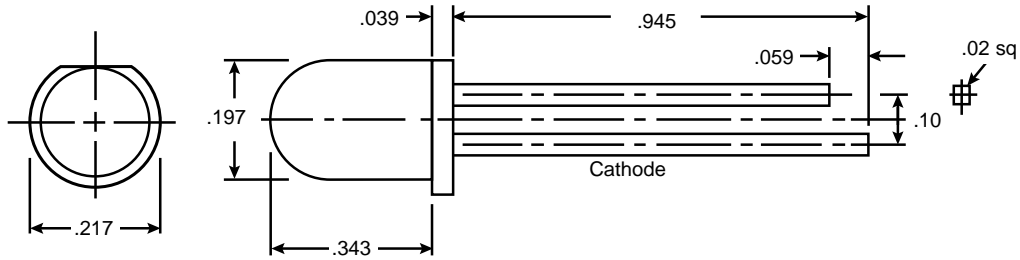
Fig. 6 Max Peak Current vs. Duty Cycle % (Refresh Rate f = 1KHz)

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**Dimensions (In.)**



**Material Specifications:**

- Dice material: GaAlAs/GaAs
- Emitting color: red
- Lens color: red transparent

**Absolute Maximum Ratings @ Ta=25°C**

Parameter	
DC Forward Current (mA)	30
Peak Forward Current (mA)	100
Reverse Voltage (V)	4
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds

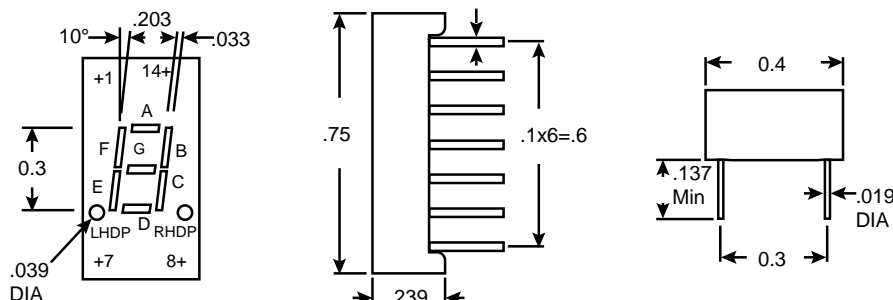
**Electronics & Optical Characteristics: Ta=25°C**

Characteristics	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	$V_F$		1.7	2.2	Volt	$I_F = 20\text{mA}$
Reverse Current	$I_R$			100	$\mu\text{A}$	$V_R = 4\text{V}$
Luminous Intensity	$I_V$	400	1000		mcd	$I_F = 20\text{mA}$
Peak Wavelength	$\lambda_P$		660		nm	$I_F = 10\text{mA}$

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### Dimensions (In.)



### Electrical Specifications:

- Forward voltage: 2.1V (Typ.) 3.0V (Max.)
- Reverse current: (Vr-3V): 100µA
- Peak emission wavelength: @ (IF=20mA)  
red=700nm, HI-EFF red=635nm,  
orange=635nm, yellow=585nm, green=567nm

### Absolute Maximum Ratings:

- Power dissipation: 85mW
- Operating temperature range: -40°C to +85°C
- Storage temperature range: -55°C to +100°C
- Reverse voltage: 5.0V
- Avg FWD current: 25mA

### Common Anode

Pin No.	Function
1.	A cathode
2.	F cathode
3.	Common anode
4.	No pin
5.	No pin
6.	LHDP cathode
7.	E cathode
8.	D cathode
9.	RHDP cathode
10.	C cathode
11.	G cathode
12.	No pin
13.	B cathode
14.	Common anode

### Common Cathode

Pin No.	Function
1.	No pin
2.	Common cathode
3.	F anode
4.	G anode
5.	E anode
6.	D anode
7.	No pin
8.	No pin
9.	Common cathode
10.	RHDP anode
11.	C anode
12.	B anode
13.	A anode
14.	No pin

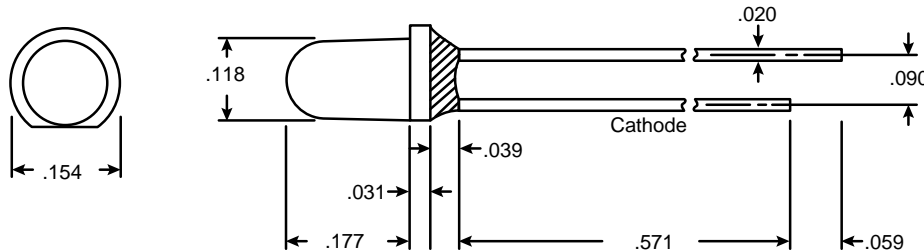
Mouser Stock No.	Color	Luminous Intensity (IF=10mA) (mcd) Typ./Seg.	Description
351-1412	Red	1.8	Common Anode RHDP
351-1422	Hi-EFF Red	1.8	Common Anode RHDP
351-1222	Hi-EFF Red	1.8	Common Cathode RHDP
351-1432	Orange	1.8	Common Anode RHPD
351-1232	Orange	1.8	Common Cathode RHPD
351-1442	Yellow	1.6	Common Anode RHPD
351-1242	Yellow	1.6	Common Cathode RHPD
351-1452	Green	1.65	Common Anode RHPD
351-1252	Green	1.65	Common Cathode RHPD

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Dimensions (In.)



**Specifications:**

- Dice material: GaAsP/GaP
- Light color: yellow
- Lens color: yellow diffused

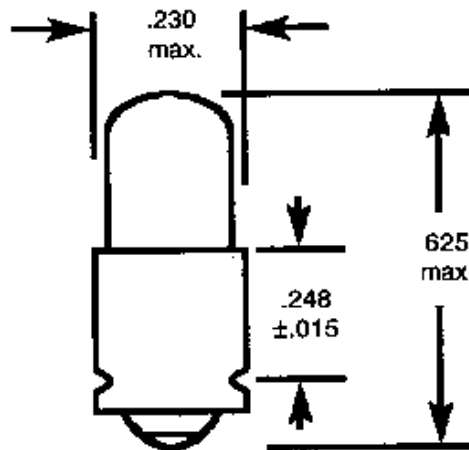
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Max.	Unit
Power dissipation	115	mW
DC forward current	20	mA
Peak forward current	55	mA
Reverse voltage	5	V
Operating and storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

**Electrical Characteristics (Ta=25°C)**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>F</sub>	Forward voltage	I <sub>F</sub> =20mA		2.0	2.8	V
I <sub>R</sub>	Reverse current	V <sub>R</sub> =5V			100	μA
λ <sub>P</sub>	Peak emission wavelength	I <sub>F</sub> =20mA		585		nm
2Ø 1/2	Viewing angle	I <sub>F</sub> =10mA		40		Deg.
I <sub>V</sub>	Luminous intensity	I <sub>F</sub> =10mA	1.0	3.2		mcd

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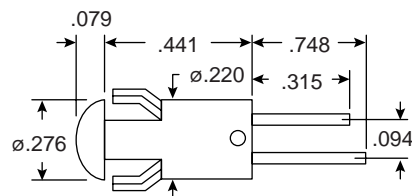
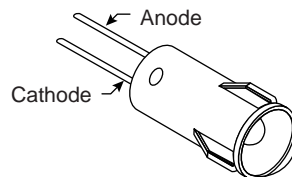
**Specifications:**

- Volts: 28.0
- Amps: .040
- M.S.C.P. (Approx.): .300
- Life (Hrs.): 25,000
- Filament Shape: G2F

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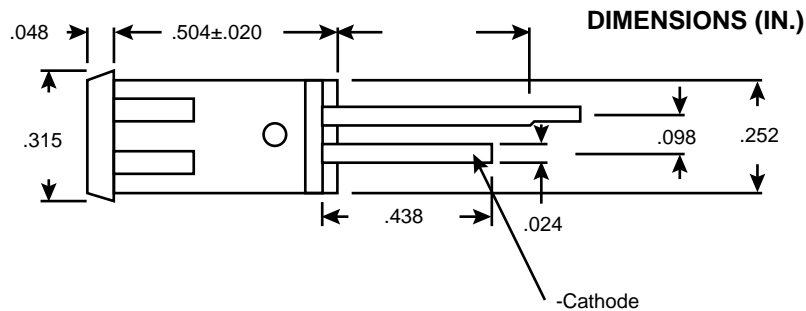
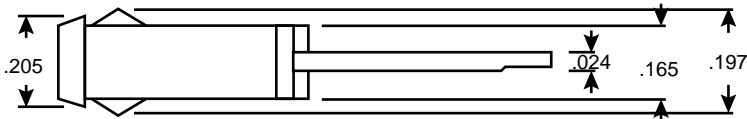
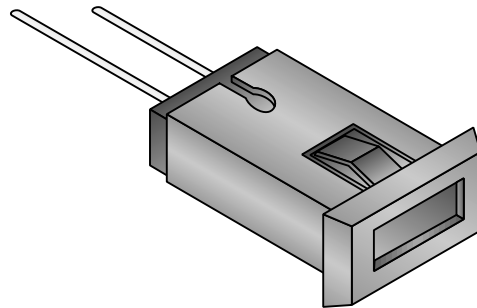
<http://www.mouser.com>



### Dimensions (In.)

#### Specifications (Ta=25°C):

- Color: red
- Body: plastic
- Panel thickness: .031 ~ .071
- Mounting hole:  $\varnothing$ .236
- IF: 40mA
- VR: 5V
- P: 73mW
- Top: -25°C ~ +85°C
- Tstg: -25°C ~ +100°C (IF=20mA)
- VF: 1.63V (typ.), 1.85V (max.)
- IR (VR=3V): 10 $\mu$ A
- Cd: 0.5mcd (min.), 2.1 (typ.)
- $\lambda$ P: 655nm (typ.)
- $\Delta\lambda$ : 20nm (typ.)



- Panel thickness: .031~.063, .067~.098
- Mounting hole: .26-.004 x .173±.002, .26-.004 x .177±.002

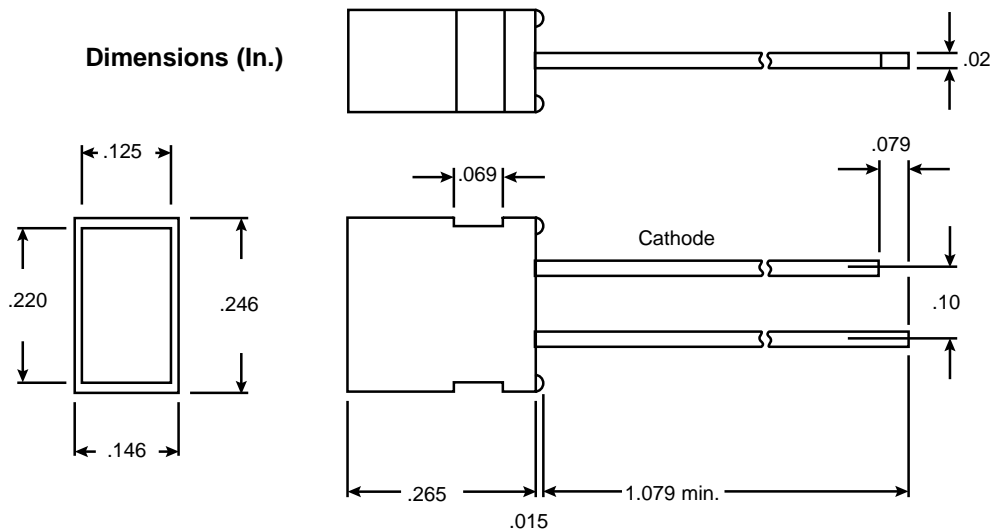
Absolute Maximum Ratings

Color	IF (mA)	VR (V)	P (mW)	Top. (°C)	Tstg. (°C)
Red	30	4	75	-20~+55	-25~+75

Electro-Optical Characteristics

Color	VF (V)		IR (μA) VR=4V	Cd (mcd)		λP (nm) (Typ.)	Δλ (nm)
	Typ.	Max.		Min.	Typ.		
Red	2.1	2.5	100	0.4	0.8	700	100

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**Specifications:**

- Dice material: GaAsP/GaP
- Emitted light color: orange
- Lens: orange diffused

**Absolute Maximum Ratings @ Ta=25°C**

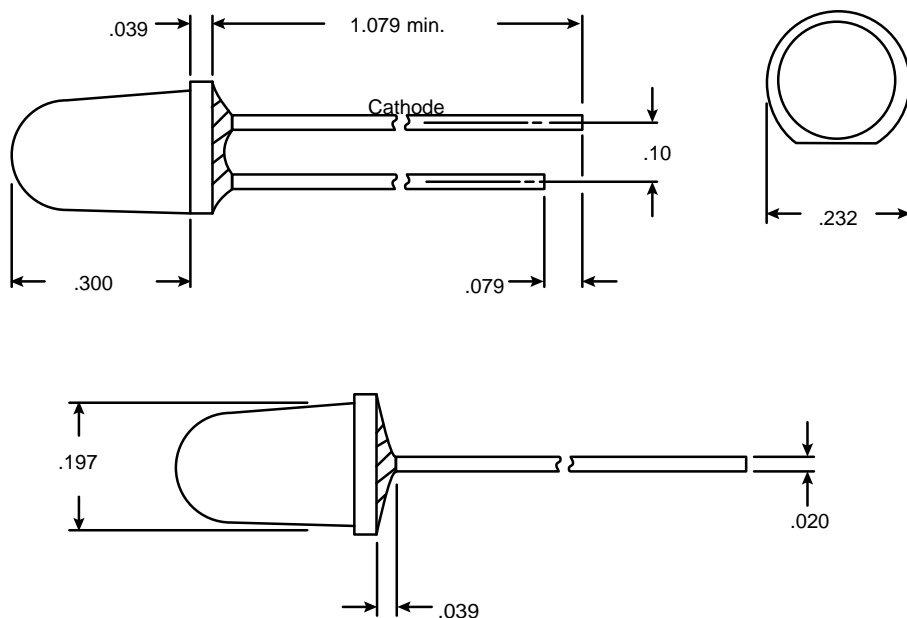
Parameter	Symbol	
Power Dissipation (mW)	$P_D$	115
DC Forward Current (mA)	$I_F$	20
Peak Forward Current (mA)	$I_{PF}$	55
Reverse Voltage (V)	$V_R$	5
Operating & Storage Temperature Range	$T_{opr}$ & $T_{stg}$	-40°C to +100°C
Lead Solder Temperature .063" from body 260°C for 5 seconds		

**Electrical Characteristics (Ta=25°C)**

Parameter	Symbol	Test Cond.	Typ.	Typ.	Max.
Forward Voltage (V)	$V_F$	$I_F=20mA$		2.0	2.8
Reverse Current ( $\mu A$ )	$I_R$	$V_R=5V$			100
Peak Emission Wavelength (nm)	$\lambda_P$	$I_F=20mA$		635	
Luminous Intensity (mcd)	$I_V$	$I_F=10mA$	2.0	5.0	

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### Dimensions (In.)



### Absolute Maximum Ratings (Ta=25°C)

Parameter	Max.	Unit
Power dissipation	70	mW
DC forward current	30	mA
Peak forward current	10	mA
Reverse voltage	4	V
Operating and storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

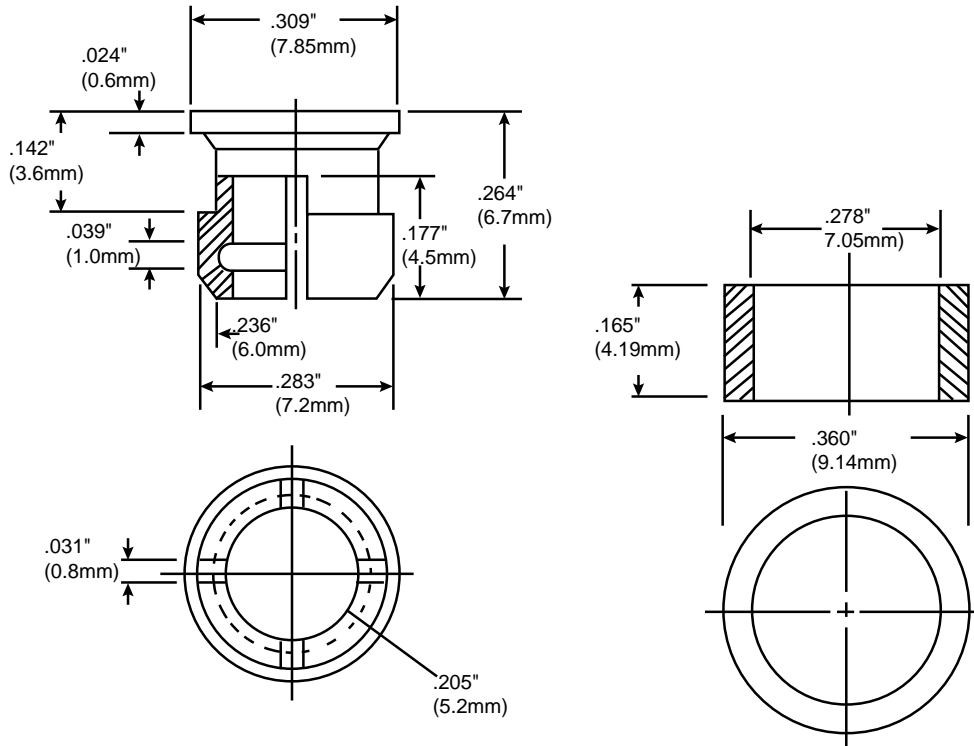
### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity		Viewing Angle
				Typ	Max			Min	Typ	
351-0200CR	GaAlAs/GaAs	Red	Water Clr	1.8	2.5	100	660	80	125	30°
351-0500CR	GaAlAs/GaAlAs	Red	Water Clr	1.8	2.5	100	660	200	330	30°

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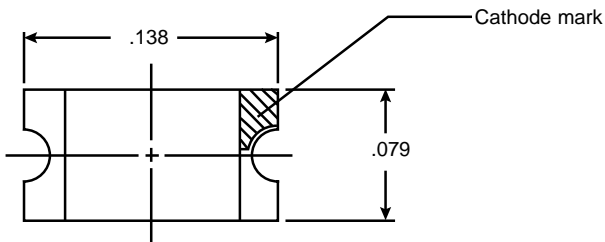
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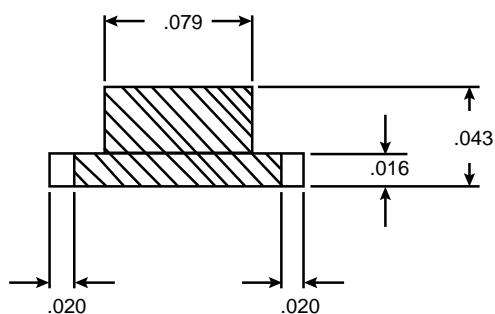
**Specifications:**

- Material: Polypropylene
- Fits lamp size: T-1 3/4
- Fits lamp shape: Tapered or cylindrical

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Dimensions (In.)



**Max Specifications:**

- Forward current: 50mA
- Power dissipation: 100mW
- Operating ambient temperature: -25°C to +80°C
- Storage temperature: -30°C to +85°C

**Mounting or Soldering Conditions:**

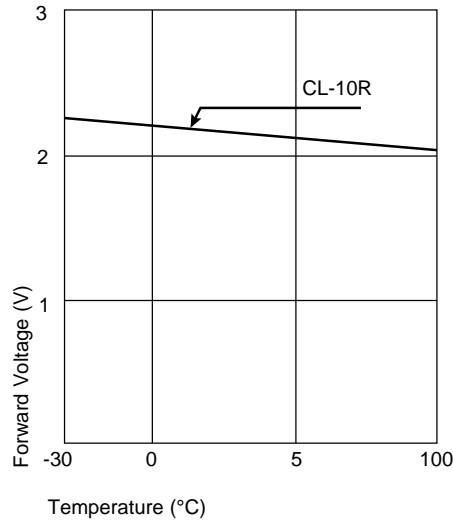
- Reflow furnace:
  - Solder past to be used: Sn/Pb = 60/40 (however, to attain better results in solderability it is recommended to use a solder containing silver, i.e., Sn/Pb/Ag=62/32/2.)
  - Mesh of solder paste: 325 mesh
  - Temperature: preheating - 150°C, heating - 230°C
- Manual soldering
  - Temperature of iron tip: 250°C max
  - Heat application: 3 seconds max
- Cleaning: It is recommended to use freon, chloroethene or alcohol for cleaning after soldering.

**Electrical Characteristics (Ta=25°C)**

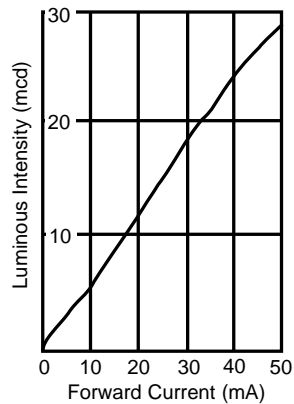
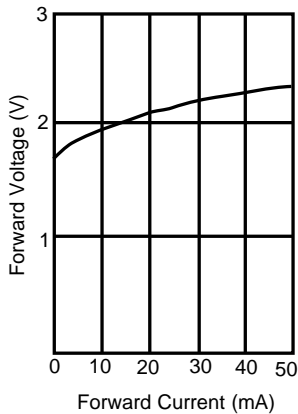
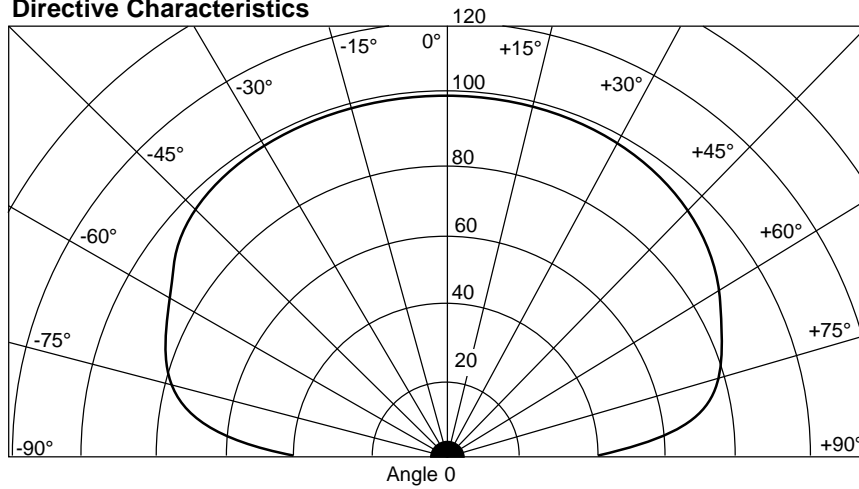
Light Color	V <sub>F</sub> (V)		Reverse Current (uA) Max	Peak Wavelength λ <sub>P</sub> (nm)	Luminous Intensity (mcd)		Viewing Angle
	Typ	Max			Min	Typ	
Orange	2.0	2.6	100	605	1.9	4.6	120°

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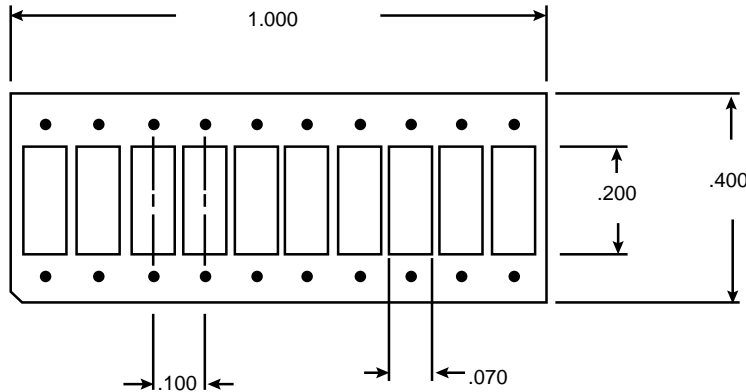
**Ambient Temperature x Forward Voltage ( $V_F$ )**



**Directive Characteristics**



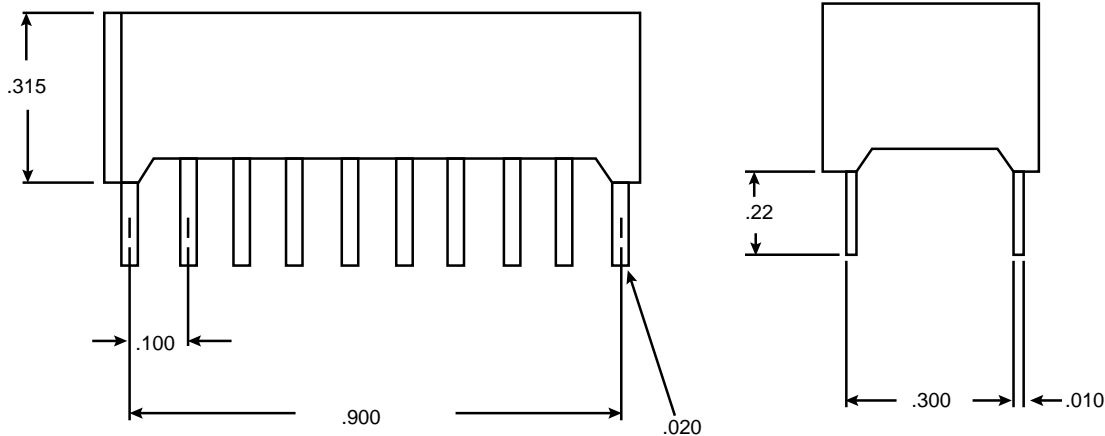
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**Specifications:**

- Dice material: GaAsP/GaP
- Light color: yellow
- Segment color: white diffused
- Surface color: black color

**Dimensions (In.)**



**Absolute Maximum Ratings @ Ta=25°C**

Parameter	Symbol	
Power Dissipation (mW)	$P_D$	115
DC Forward Current (mA)	$I_F$	20
Peak Forward Current (mA)	$I_{PF}$	55
Reverse Voltage (V)	$V_R$	5
Operating & Storage Temperature Range	$T_{opr}$ & $T_{stg}$	-40°C to +85°C
Lead Solder Temperature .063" from body (case) 260°C for 5 seconds		

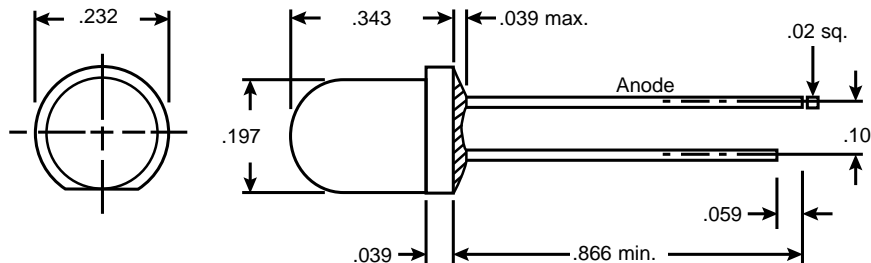
**Electrical Characteristics (Ta=25°C)**

Parameter	Symbol	Test Cond.	Typ.	Max.
Forward Voltage (V)	$V_F$	$I_F=20mA$	2.0	2.8
Reverse Current ( $\mu A$ )	$I_R$	$V_R=5V$		100
Peak Emission Wavelength (nm)	$\lambda_P$	$I_F=20mA$	585	
Luminous Intensity (mcd)	$I_V$	$I_F=10mA$	2.4	

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### Dimensions (In.)



### Material Specifications:

- Infrared chip: GaAs
- Lens color: water clear

### Absolute Maximum Ratings @ Ta=25°C

Parameter	
Power Dissipation (mW)	150
DC Forward Current (mA)	100
Peak Forward Current (mA)	200
Reverse Voltage (V)	5
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds

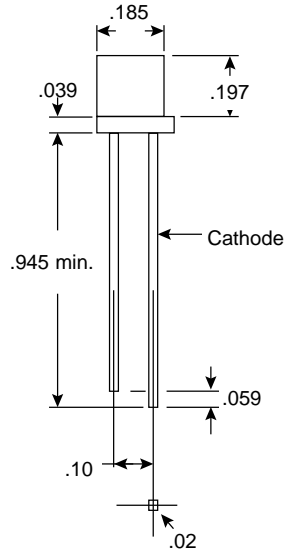
### Electrical Characteristics @ Ta=25°C

Parameter	Symbol	Test Cond.	Min.	Typ.	Max.
Forward Voltage (V)	V <sub>F</sub>	I <sub>F</sub> =20mA		1.3	1.7
Reverse Current (µA)	I <sub>R</sub>	V <sub>R</sub> =5V			100
Peak Emission Wavelength (nm)	λ <sub>p</sub>	I <sub>F</sub> =20mA		940	
Viewing Angle (deg.)	2θ 1/2	I <sub>F</sub> =10mA		22°	
Radiant Power (mW)	P <sub>O</sub>	I <sub>F</sub> =100mA	10	16	

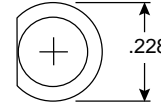
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Dimensions (In.)



**Material Specifications:**

- Dice material: GaAs
- Lens color: water clear

**Absolute Maximum Ratings @ Ta=25°C**

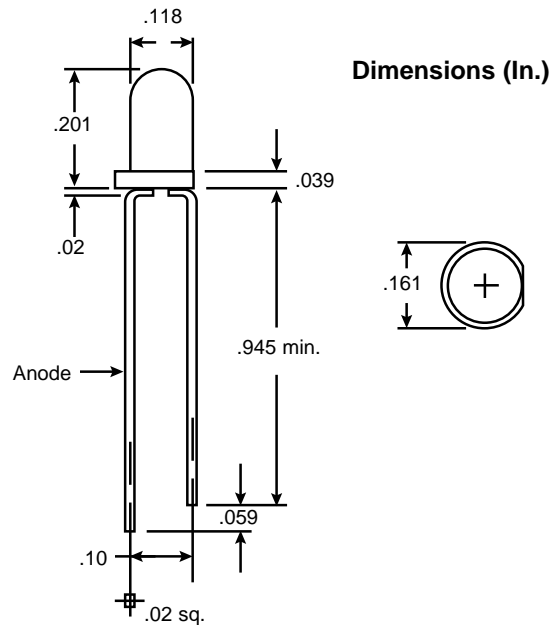
Parameter	
Power Dissipation (mW)	150
DC Forward Current (mA)	100
Peak Forward Current (mA)	200
Reverse Voltage (V)	5
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds

**Electrical Characteristics @ Ta=25°C**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	$V_F$		1.3	1.7	V	$I_F=50mA$
Reverse Current	$I_R$			100	$\mu A$	$V_R=5V$
Peak Emission Wavelength	$\lambda_P$		940		nm	$I_F=20mA$
Viewing Angle	2 $\theta$ 1/2		60°		Deg.	$I_F=10mA$
Radiant Power	$P_O$	7.5	12		mW	$I_F=100mA$

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**Specifications:**

- Dice material: GaAs
- Lens color: water clear

**Absolute Maximum Ratings @ Ta=25°C**

Parameter	
Power Dissipation (mW)	150
DC Forward Current (mA)	100
Peak Forward Current (mA)	200
Reverse Voltage (V)	5
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds

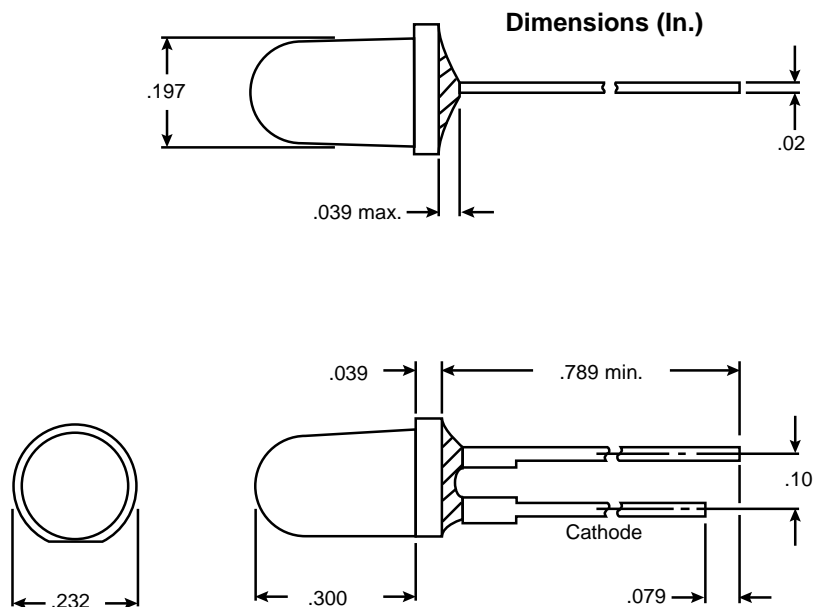
**Electrical Characteristics @ Ta=25°C**

Parameter	Symbol	Min	Typ	Max	Test Condition
Forward Voltage (V)	V <sub>F</sub>		1.3	1.7	I <sub>F</sub> =50mA
Reverse Current (mA)	I <sub>R</sub>			100	V <sub>R</sub> =5V
Peak Emission Wavelength (nm)	λ <sub>p</sub>		940		I <sub>F</sub> =20mA
Viewing Angle (Deg)	2θ 1/2		36°		I <sub>F</sub> =10mA
Radiant Power (mW)	P <sub>O</sub>	8.0	13		I <sub>F</sub> =100mA

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### Absolute Maximum Ratings (Ta=25°C)

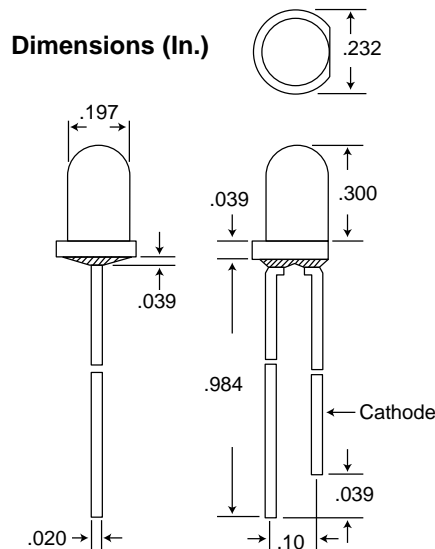
Parameter	Max.	Unit
Power Dissipation	100	mW
DC Forward Current	30	mA
Peak Forward Current	120	mA
Reverse Voltage	5	V
Operating and Storage Temperature Range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (uA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
35BL557	GaAsP/GaP	Orange	Orange Trans.	2.0	2.8	100	635	20	50	35°
35BL559	GaAsP/GaP	Yellow	Yellow Trans.	2.1	2.8	100	590	20	35	35°

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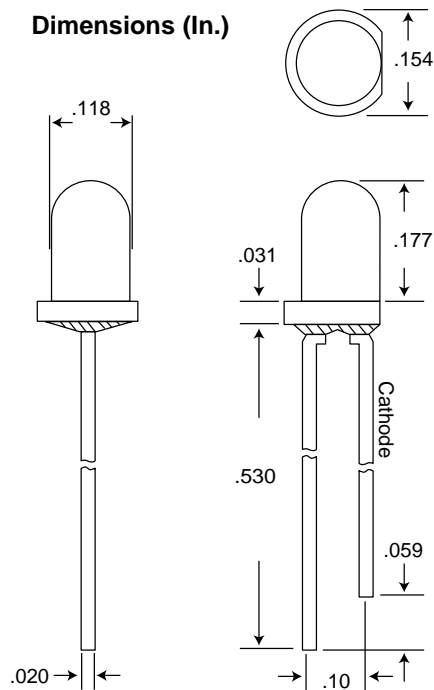
### Absolute Maximum Ratings @ Ta=25°C

Parameter	
Power Dissipation (mW)	100
DC Forward Current (mA)	40
Peak Forward Current (mA)	200
Reverse Voltage (V)	5
Operating and Storage Temperature Range	-40°C to +100°C
Lead Solder Temperature 0.063" below package (case) 260°C for 5 seconds	

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ.	Max.			Min.	Typ.	
351-0125CR	GaAlAs/GaAs	Red	Water Clr	1.8	2.5	100	660	80	125	30°
351-0180CR	GaAlAs/GaAs	Red	Water Clr	1.8	2.5	100	660	100	180	30°
351-0350CR	GaAlAs/GaAs	Red	Water Clr	1.8	2.5	100	660	200	350	30°
351-0650CR	GaAlAs/GaAs	Red	Water Clr	1.8	2.5	100	660	400	650	16°
351-1000CR	GaAlAs/GaAs	Red	Water Clr	1.8	2.5	100	660	650	1000	30°

**Dimensions (In.)**



**Specifications:**

- Dice material: GaAsP/GaP
- Light color: yellow
- Lens color: yellow transparent

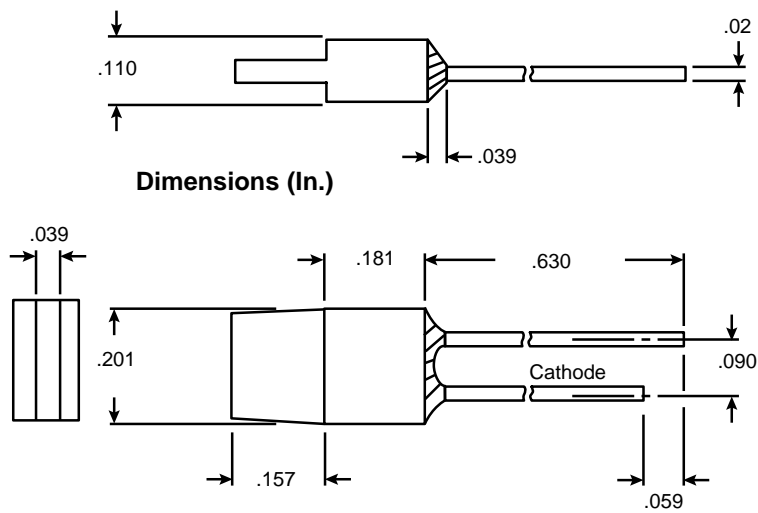
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Max.	Unit
Power dissipation	115	mW
DC forward current	20	mA
Peak forward current	55	mA
Reverse voltage	5	V
Operating and storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

**Electrical Characteristics (Ta=25°C)**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>F</sub>	Forward voltage	I <sub>F</sub> =20mA		2.0	2.8	V
I <sub>R</sub>	Reverse current	V <sub>R</sub> =5V			100	μA
2Ø 1/2	Viewing angle	I <sub>F</sub> =10mA		40°		deg.
λ <sub>P</sub>	Peak emission wavelength	I <sub>F</sub> =20mA		585		nm
I <sub>V</sub>	Luminous intensity	I <sub>F</sub> =10mA	0.8	3.2		mcd

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**Specifications:**

- Dice material: GaAsP/GaAs red
- Light color: red
- Lens color: red diffused

**Absolute Maximum Ratings (Ta=25°C)**

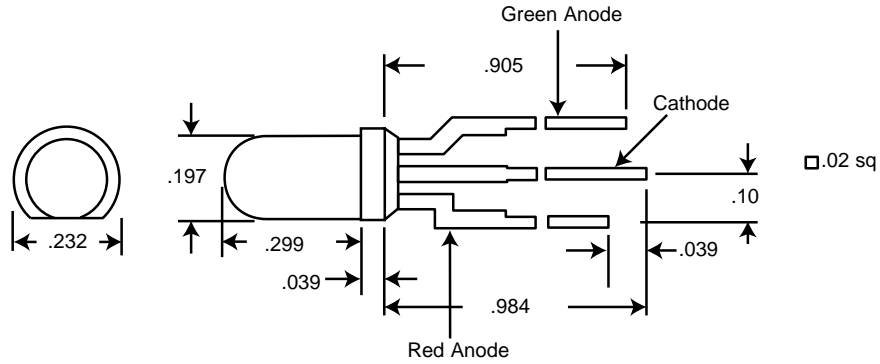
Parameter	Max.	Unit
Power dissipation	110	mW
DC forward current	20	mA
Peak forward current	55	mA
Reverse voltage	5	V
Operating and storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

**Electrical Characteristics (Ta=25°C)**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>F</sub>	Forward voltage	I <sub>F</sub> =20mA		1.65	2.0	V
I <sub>R</sub>	Reverse current	V <sub>R</sub> =5V			100	μA
λ <sub>P</sub>	Peak emission wavelength	I <sub>F</sub> =20mA		655		nm
I <sub>V</sub>	Luminous intensity	I <sub>F</sub> =10mA	0.1	0.3		mcd

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**Dimensions (In.)**

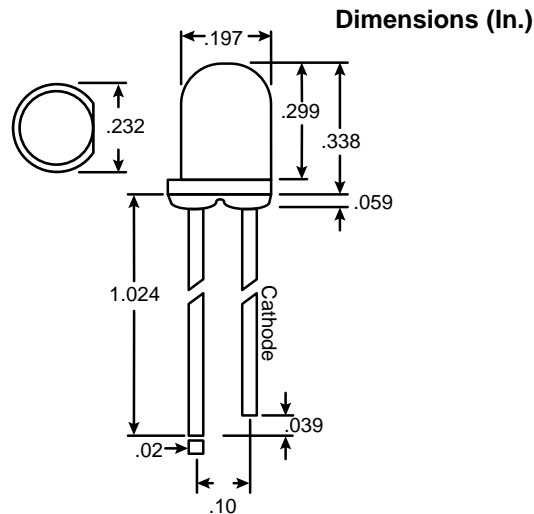


**Absolute Maximum Ratings @ Ta=25°C**

Parameter	Red	Green
Power Dissipation (mW)	80	100
DC Forward Current (mA)	30	30
Peak Forward Current (mA)	80	120
Reverse Voltage (V)	5	5
Operating Temperature Range	-20°C to +80°C	
Storage Temperature Range	-40°C to +100°C	
Lead Solder Temperature .063" below package (case) 260°C for 5 seconds		

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5103	GaP/GaP	Red/Green	White Diff	2.1	2.8	100	695/565	2.5/9.0	4.0/15.0	35°
351-5105	GaAsP/GaP/GaP	Hi-eff Red/Green	White Diff	2.0/2.2	2.8/2.8	100	635/570	10/8.0	20/18	35°

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**Absolute Maximum Ratings (Ta=25°C)**

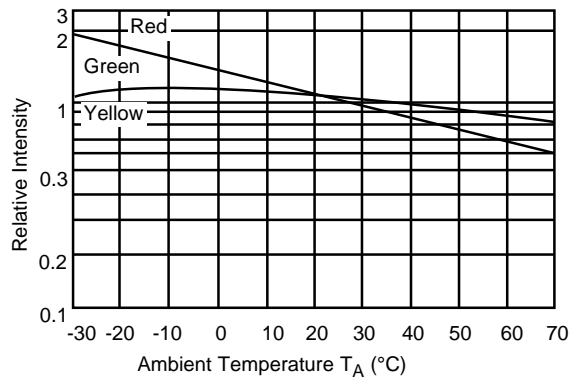
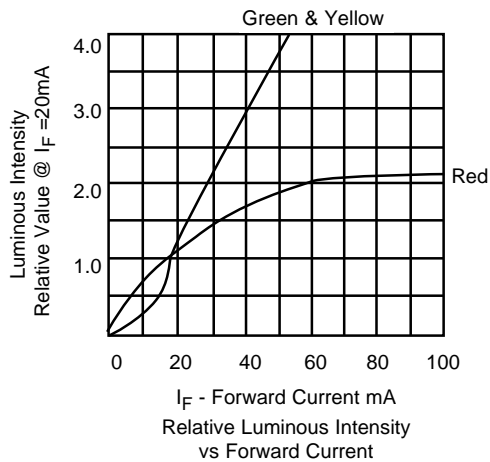
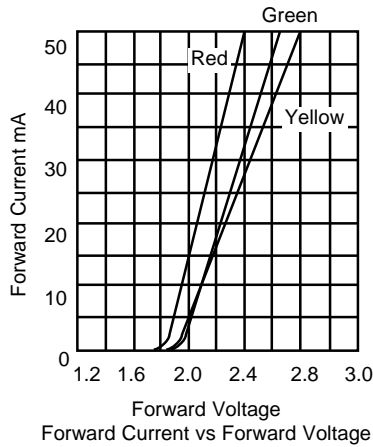
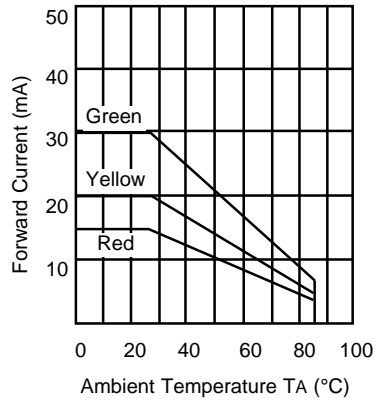
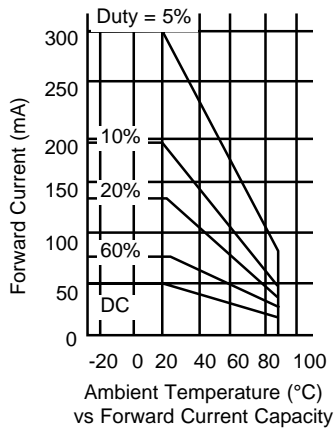
Parameter	351-5100 351-5200	351-5300	351-5500
Power Dissipation (mW)	80	60	100
DC Forward Current (mA)	40	20	30
Peak Forward Current (mA)	200	80	120
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-40°C to +85°C		
Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .079" below package (case) 260°C for 5 seconds			

**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5100	GaAlAs	Red	Water Clr	1.5	2.4	100	660	550	1000	20°
351-5200	GaAlAs	Red	Water Clr	1.5	2.4	100	660	1100	2000	20°
351-5500	GaP	Green	Water Clr	1.7	2.8	100	565	300	500	20°
351-5300	GaAsP/GaP	Yellow	Water Clr	1.7	2.8	100	585	160	300	20°

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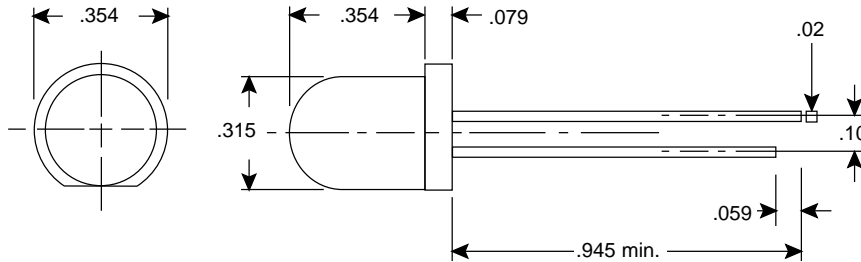
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### Dimensions (In.)



### Absolute Maximum Ratings @ Ta=25°C

Parameter	
DC Forward Current (mA)	30
Peak Forward Current (mA)	100
Reverse Voltage (V)	5
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" from body 260°C for 5 seconds	

### Electrical Characteristics (Ta=25°C)

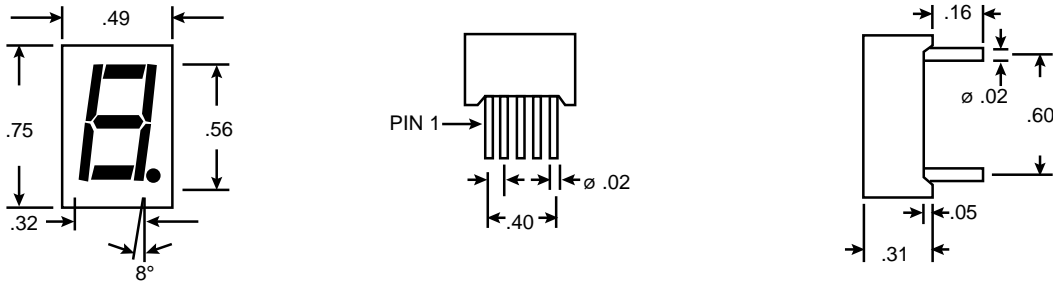
Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max		Min	Typ	
351-7540	GaP	Green	Green Diff	2.1	3.0	567	3.5	8.9	40°
351-7541	GaAsP/GaP	Yellow	Yellow Diff	2.1	3.0	585	2.9	7.3	40°
351-7542	GaAsP/GaP	Hi-eff Red	Red Diff	2.1	3.0	635	4.1	10.3	40°

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Dimensions (In.), and tolerance is (.01) unless otherwise noted.

Color Bright Red



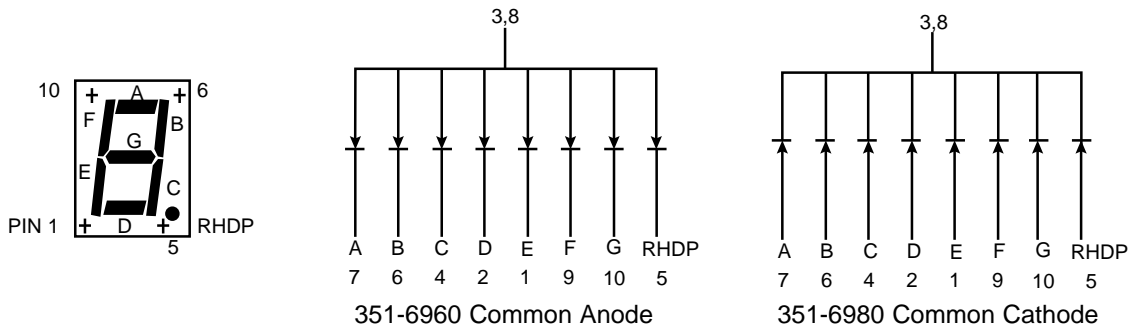
**Absolute Maximum Ratings:**

- Power dissipation: 120mW
- DC forward current: 20mA
- Reverse current: 100µA
- Operating and storage temperature: -45°C to 85°C

**Electrical Specifications:**

- Forward voltage: Red = 1.6V (Typ.) 1.9V (max.)  
Hi-eff. Red = 2.2 V (typ) 2.8V (max)
- Reverse current ( $V_r = 5V$ ): 100µZ
- Peak emission wavelength @ ( $I_F = 20 \text{ mA}$ ): Red = 695NM Hi-eff. red = 655NM

Typical Internal Equivalent Circuit



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Typical Eltro-optical Characteristic Curves  
(25°C Free Air Temperature Unless Otherwise Specified)

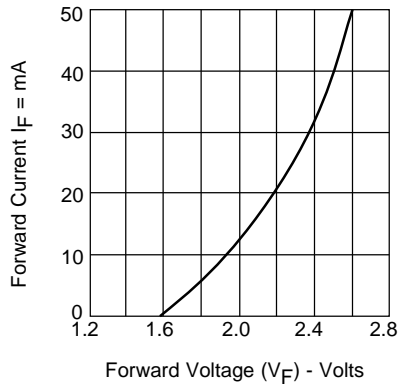


Fig.1 Forward Current vs. Forward Voltage.

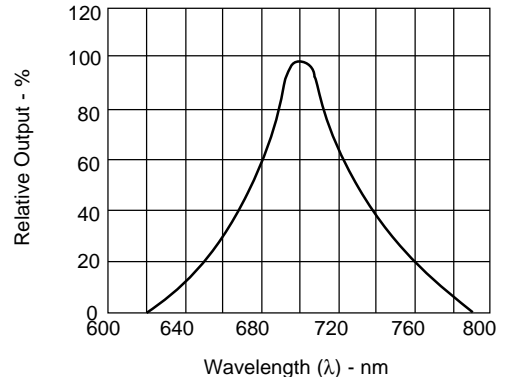


Fig. 2 Spectral Response

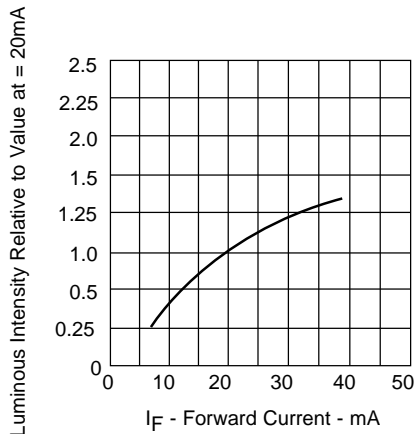


Fig.3 Relative Luminous Intensity vs. Forward Current

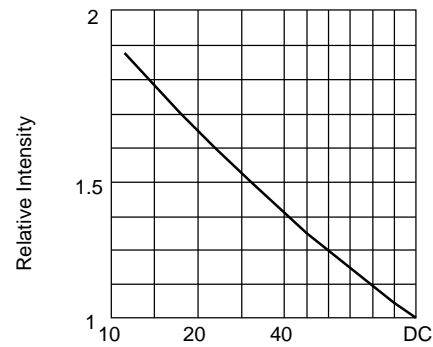


Fig. 5 Luminous Intensity vs. Duty Cycle

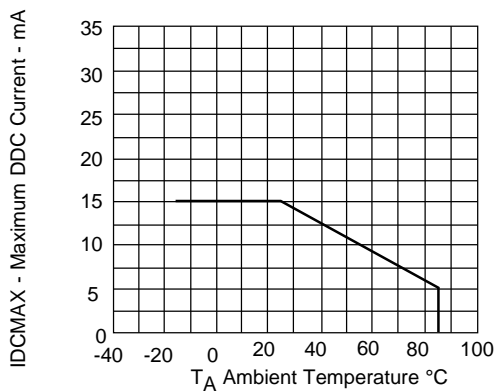


Fig.4 Maximum Allowable DC Current Per Segment vs. A Function of Ambient Temperature

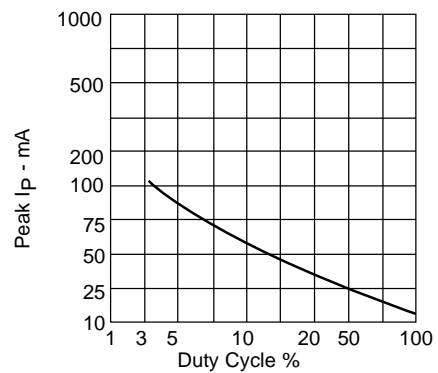
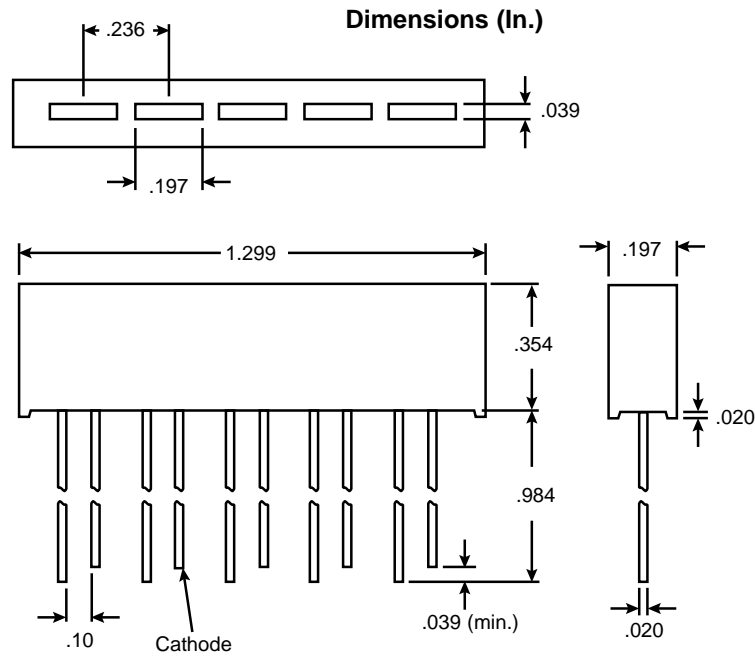


Fig. 6 Max Peak Current vs. Duty Cycle (Refresh rate f = 1KHz)

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**Specifications:**

- Dice material: GaP
- Light color: red color
- Lens color: red diffusion
- Holder material: black A.B.S. plastic

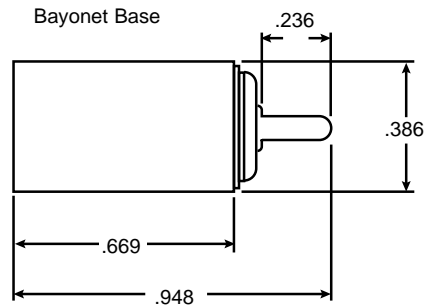
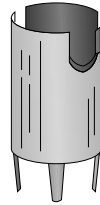
**Absolute Maximum Ratings @ Ta=25°C**

Parameter	Symbol	Max.
Power Dissipation (mW)	P <sub>D</sub>	80
Reverse Voltage (V)	V <sub>R</sub>	5
Average Forward Current (mA)	I <sub>AF</sub>	30
Peak Forward Current (mA)	I <sub>PF</sub>	80
Operating Temperature Range		-20°C to +80°C
Storage Temperature Range		-40°C to +100°C
Lead Soldering Temperature .063" from body 260°C for 5 seconds		

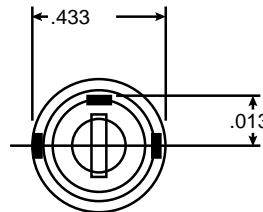
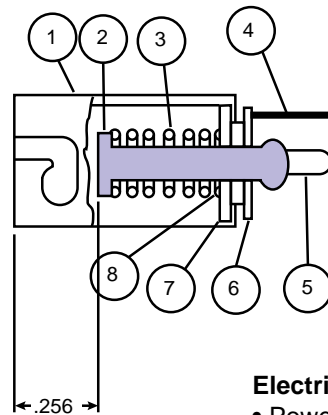
**Electrical Characteristics @ Ta=25°C**

Parameter	Symbol	Test Cond.	Red
Forward Voltage (typ.) (V)	V <sub>F</sub>	I <sub>F</sub> =20mA	2.2
Reverse Voltage (max.) (µA)	I <sub>R</sub>	V <sub>R</sub> =5V	100
Peak Emission Wavelength (nm)	λ <sub>P</sub>	I <sub>F</sub> =20mA	695
Luminous Intensity (typ.) (mcd)	I <sub>V</sub>	I <sub>F</sub> =10mA	4.0

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Dimensions (In.)

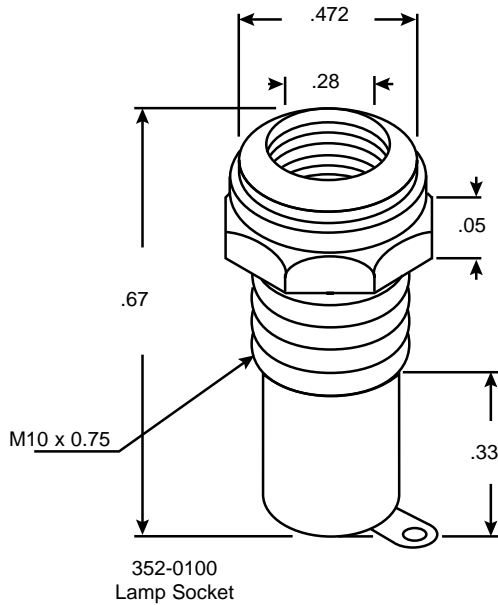


**Electrical Specifications:**

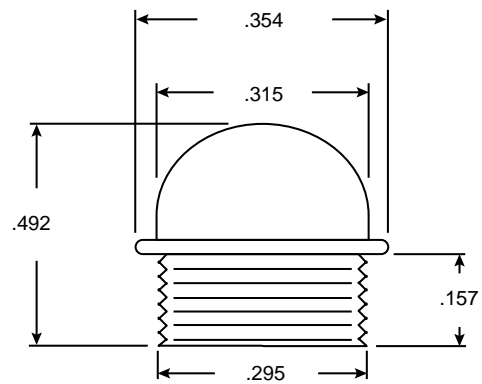
- Power rating: 5W max.
- Withstand voltage: 1500VAC
- Insulation resistance: 100MΩ @ 500VDC

1. Socket base: nickel plated brass
2. Contact rivet: nickel plated brass
3. Spring: nickel plated piano wire
4. Terminal (+): nickel plated brass
5. Terminal (-): nickel plated brass
6. Inner washer: phenol
7. Outer washer: phenol
8. Eyelet: brass

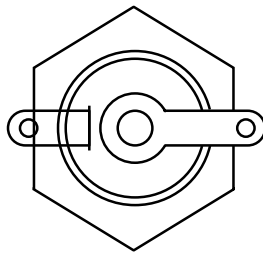
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Dimensions (In.)



Plastic Lens

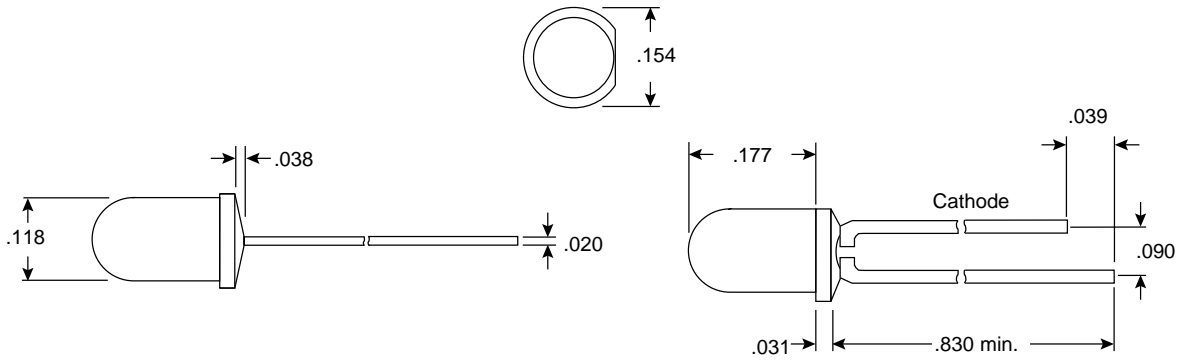


**Specifications: For Lamp Socket**

- Insulation resistance: 500VDC 100MΩ/min.
- Withstanding voltage: 1000VAC/1 minute

Mouser Stock No.	Color	Material
352-0101	Red	Acryl Resin
352-0102	Green	
352-0103	Clear	
352-0104	Orange	

### Dimensions (In.)



### Absolute Maximum Ratings @ Ta=25°C

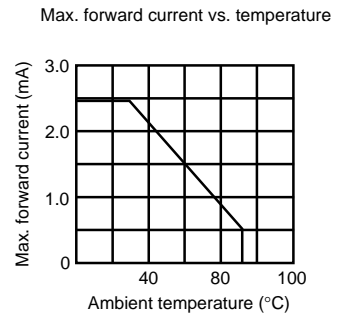
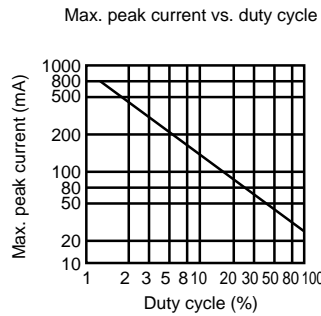
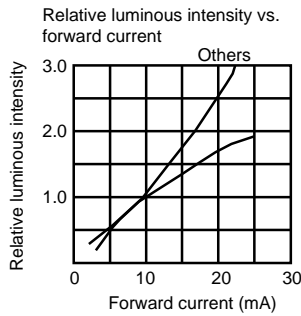
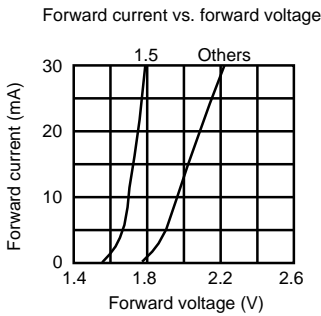
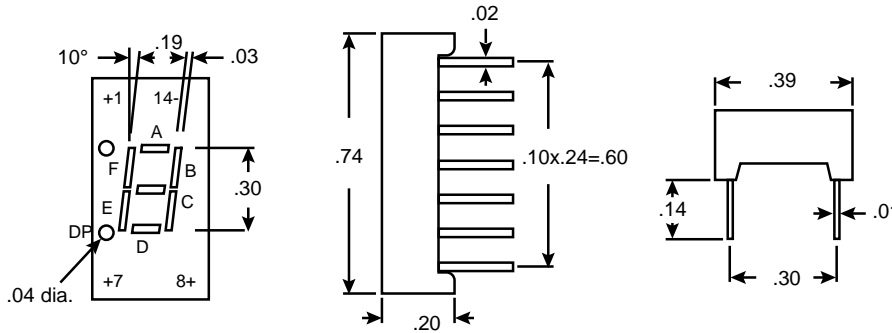
Parameter	351-3001	351-3003	351-3004
Power Dissipation (mW)	80	100	100
DC Forward Current (mA)	40	30	30
Peak Forward Current (mA)	200	120	80
Reverse Voltage (V)	5	5	5
Operating & Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds		

### Electrical Characteristics @ Ta=25°C

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3001	GaAsP/GaAs	Red	Red Diff	1.8	2.0	100	655	0.3	1.0	120°
351-3003	GaP	Green	Green Diff	2.2	2.8	100	570	3.0	7.0	120°
351-3004	GaAsP/GaP	Yellow	Yellow Diff	2.0	2.8	100	585	3.0	6.5	120°

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### Electrical Specifications:

- Forward voltage: red-1.7 (typ.) 2.0V (max.)  
 Hi-EFF red, orange, yellow  
 and green: 2.1V (typ.) 3.0V (max.)
- Reverse current: (Vr-3V): 100µA
- Peak emission wavelength: @ (IF=20mA)  
 red=655nm, HI-EFF red=635nm,  
 orange=635nm, yellow=585nm, green=567nm

### Absolute Maximum Ratings:

- Power dissipation: red=100mW, HI-EFF red,  
 orange, yellow, and green=85mW
- Operating temperature range: -40°C to +85°C
- Storage temperature range: -55°C to +100°C

### Common Anode

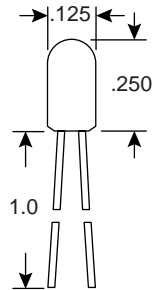
Pin No.	Function
1.	A cathode
2.	F cathode
3.	Common anode
4.	No pin
5.	No pin
6.	No connection
7.	E cathode
8.	D cathode
9.	DP cathode
10.	C cathode
11.	G cathode
12.	No pin
13.	B cathode
14.	Common anode

### Common Cathode

Pin No.	Function
1.	F anode
2.	G anode
3.	No pin
4.	Common cathode
5.	No pin
6.	E anode
7.	D anode
8.	C anode
9.	DP anode
10.	No pin
11.	No pin
12.	Common cathode
13.	B anode
14.	A anode

Mouser Stock No.	Color	Luminous Intensity (IF=10mA) (mcd) Typ./Seg.	Description
351-1410	Red	0.45	Common Anode RHDP
351-1420	Hi-EFF Red	1.8	Common Anode RHDP
351-1220	Hi-EFF Red	1.8	Common Cathode RHDP
351-1430	Orange	1.8	Common Anode RHPD
351-1230	Orange	1.8	Common Cathode RHPD
351-1440	Yellow	1.6	Common Anode RHPD
351-1240	Yellow	1.6	Common Cathode RHPD
351-1450	Green	1.65	Common Anode RHPD
351-1250	Green	1.65	Common Cathode RHPD

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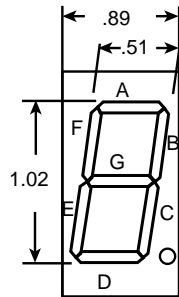


**Dimensions (In.)**

**Specifications:**

- Type: T-1 wire terminal, incandescent

Mouser Stock No.	Type	Volts	Amps	M.S.C.P.	Life (Hrs)	Filament Shape
353-0683	683	5.0	.060	.050	100K	C 2R
353-0715	715	5.0	.115	.150	40K	C 2R
353-7220	7220	18.0	.026	.150	16K	C 2F
353-6838	6838	28.0	.024	.150	16K	CC 2F

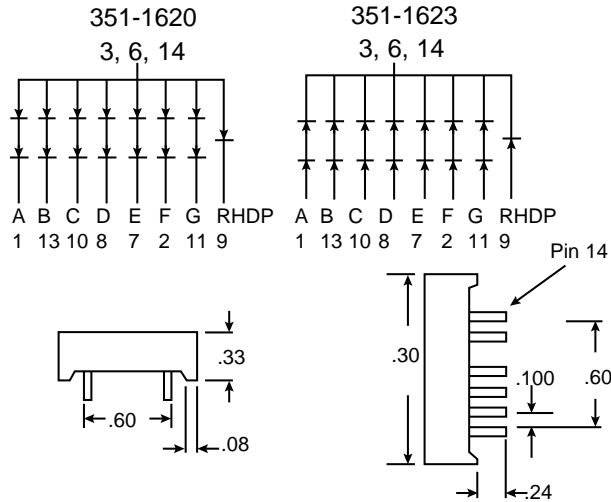


**Features:**

- Low power requirement
- Suitable for clock display

Bright Red	Description
351-1620	Common Anode, RHDP
351-1623	Common Cathode, RHDP

Typical Internal Equivalent Circuit



Absolute Maximum Rating ( $T_A=25^\circ\text{C}$ )

Parameter	Symbol	Bright Red	Unit
Power Dissipation per die	PAD	40	mW
Derating Linear form $25^\circ\text{C}$ per die		0.20	$\text{mA}/^\circ\text{C}$
Continuous forward current per die	$I_{AF}$	15	mA
Peak current per dice (duty cycle 1/10, 10KHz)	$I_{PF}$	60	mA
Reverse voltage per die	VR	5	V
Operating temperature (Note 1)	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature (Note 1)	$T_{stg}$	-25 to +85	$^\circ\text{C}$
Storage temperature 1/16 inch below seating plane for 3 seconds at $250^\circ\text{C}$			

Note 1: For taping-type display, maximum temperature is  $+60^\circ\text{C}$

Electro-optical Characteristics ( $T_A=25^\circ\text{C}$ )

Bright Red	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward voltage, (1 die per dot & 2 dice per segment)	$V_F$	$I_F=10\text{mA}$	-	2.1	2.6	-V
Luminous intensity	$I_v$	$I_P=10\text{mA}$	-	800	-	ucd
Peak emission wavelength (Note 2)	$\lambda_P$	$I_F=10\text{mA}$	-	695	-	nm
Spectrum radiation bandwidth	$\Delta\lambda$	$I_F=10\text{mA}$	-	90	-	nm
Reverse current	$I_R$	$V_R=5\text{V}$	-	-	100	$\mu\text{A}$

Note 2: The actual wavelength for different display might vary slightly, due to different tape or resin used.

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Bright Ted (GaP/GaP)  
Typical electro-optical Characteristic Curves  
(25°C Free Air Temperature Unless Otherwise Specified)

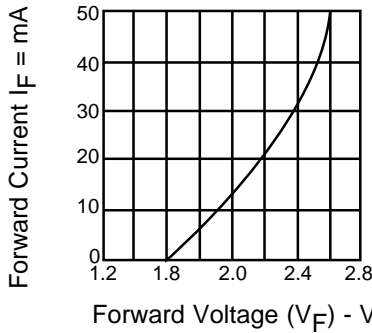


Fig. 1 Forward Current vs. Forward Voltage

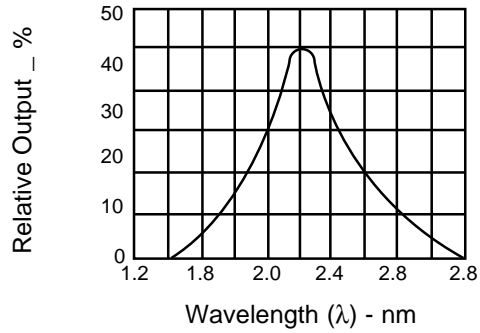


Fig. 2 Spectral Response

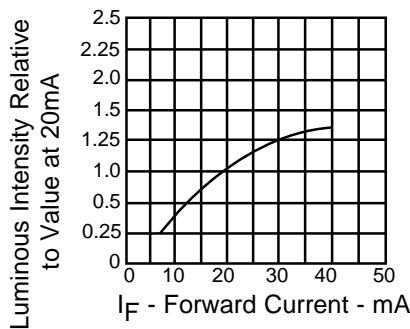


Fig. 3 Relative Luminous Intensity vs. Forward

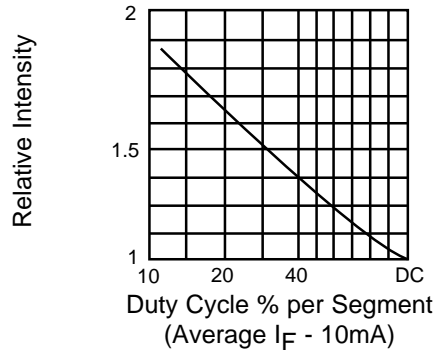


Fig. 5 Luminous Intensity vs. Duty Cycle

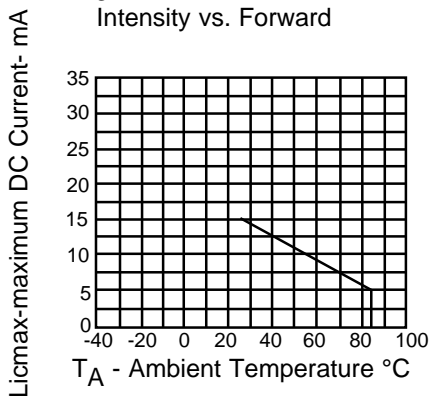


Fig. 4 Maximum Allowable DC Current per Segment vs. a Function of Ambient temperature.

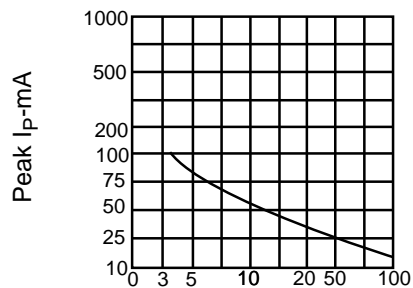
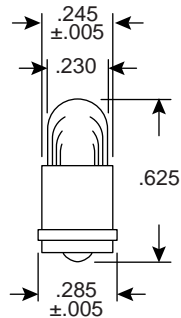


Fig. 6 Max Peak Current vs. Duty Cycle % (Refresh Rate f=1 KHz)

Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission International De L Eclairage) eye-response curve.
2. Clean only in water, isopropanol, ethanol, freon TF opr TE (or equivalent).

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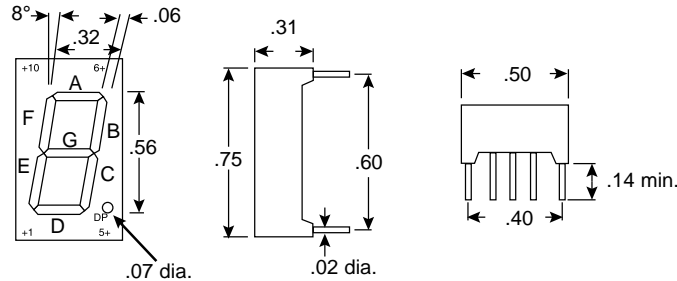
Dimensions (In.)

**Specifications:**

- Type: subminiature; T-1 3/4 midget flange

Mouser Stock No.	Volts	Amps	MSCP	Life (Hrs)	Filament Shape
353-7333	5.0	.060	.050	100K	C 2R
353-3150	5.0	.060	.150	5K	C 2R
353-0345	6.0	.040	.030	100K	C 2R
353-0328	6.0	.200	.600	1K	C 2R
353-0381	6.3	.200	.400	50K	C 2F
353-0349	6.3	.200	.550	3K	C 2R
353-0344	10.0	.014	.002	10K	C 2F
353-0367	10.0	.040	.080	5K	C 2F
353-0382	14.0	.080	.300	50K	C 2F
353-0330	14.0	.080	.500	750	C 2F
353-0385	28.0	.040	.200	50K	C 2F
353-0387	28.0	.040	.300	25K	C 2F
35ND023	28.0	.040	.340	7K	C 2F

### Dimensions (In.)



### Specifications:

- Power dissipation: 85mW
- Reverse voltage (IR = 100μA): 5.0V
- Average forward current: 25mA
- Peak forward current 1μ sec. pulse 0.3% duty cycle: 1000mA
- Operating temperature range: -40°C to +85°C
- Storage temperature range: -55°C to +100°C
- Forward voltage (IF = 20mA): 2.1V
- Reverse current (VR = 5V): 100μA
- Decimal place loc.: right hand

### Pin Outs:

#### Common Anode:

- |                        |                     |
|------------------------|---------------------|
| 1. Segment E anode     | 6. Segment D anode  |
| 2. Segment D anode     | 7. Segment A anode  |
| 3. Common cathode      | 8. Common cathode   |
| 4. Segment C anode     | 9. Segment F anode  |
| 5. Decimal point anode | 10. Segment G anode |

#### Common Cathode:

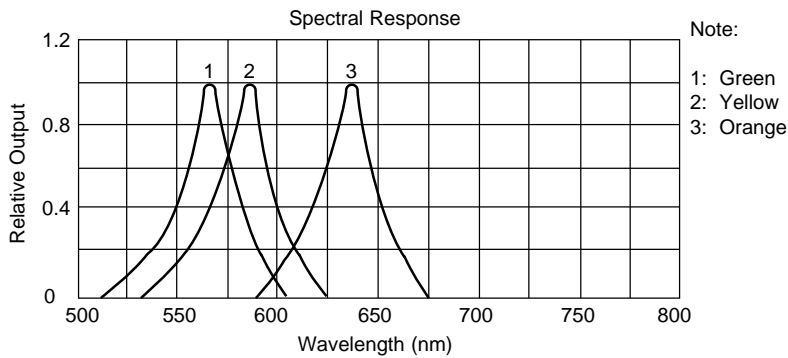
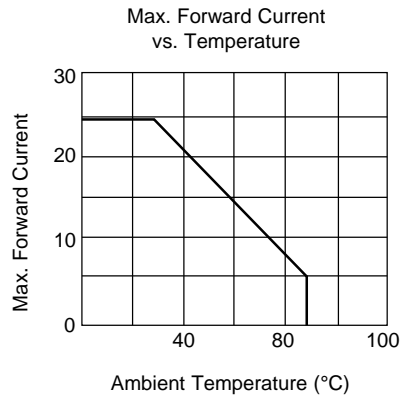
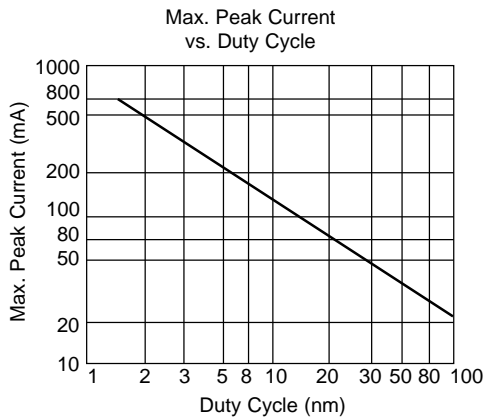
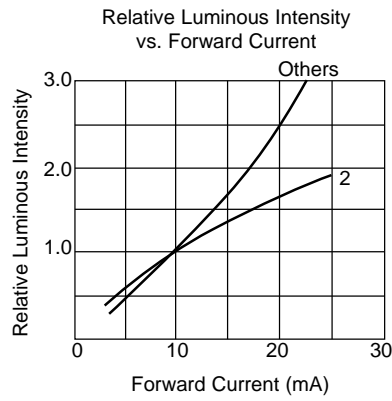
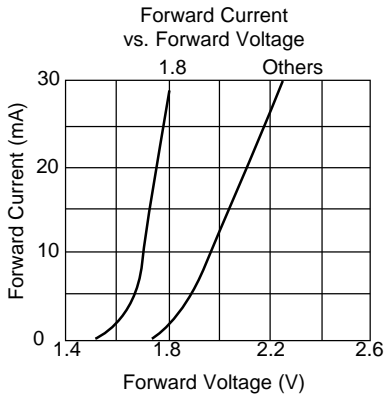
- |                          |                       |
|--------------------------|-----------------------|
| 1. Segment E cathode     | 6. Segment D cathode  |
| 2. Segment D cathode     | 7. Segment A cathode  |
| 3. Common anode          | 8. Common anode       |
| 4. Segment C cathode     | 9. Segment F cathode  |
| 5. Decimal point cathode | 10. Segment G cathode |

Mouser Stock No.	Color	Common Anode/Cath	Peak Emission Wavelength (Typ.)	Luminous Intensity (IF = 10mA)
351-4230	Orange	Cathode	635nm	2.0mcd/Seg.
351-4240	Yellow	Cathode	585nm	1.75mcd/Seg.
351-4250	Green	Cathode	567nm	1.85mcd/Seg.
351-4430	Orange	Anode	635nm	2.0mcd/Seg.
351-4440	Yellow	Anode	585nm	1.75mcd/Seg.
351-4450	Green	Anode	567nm	1.85mcd/Seg.

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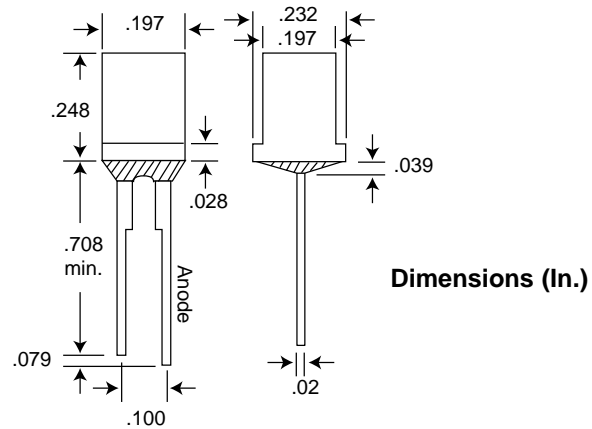
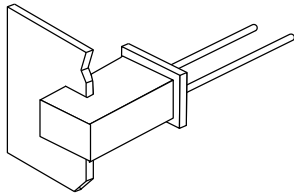
<http://www.mouser.com>



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**Specifications:**

- Dice material: GaAsP/GaAs
- Light color: red
- Lens color: red transparent

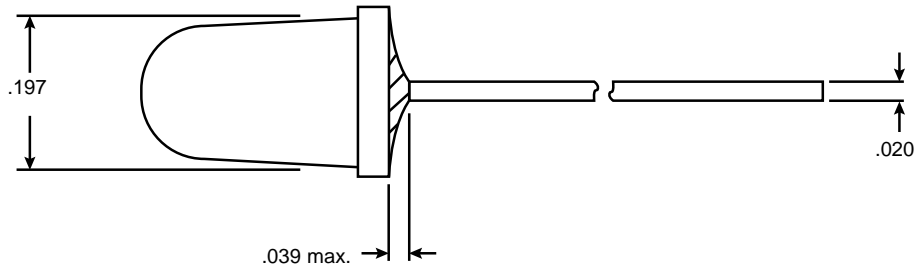
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Max.	Unit
Power dissipation	115	mW
DC forward current	20	mA
Peak forward current	55	mA
Reverse voltage	5	V
Operating and storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds		

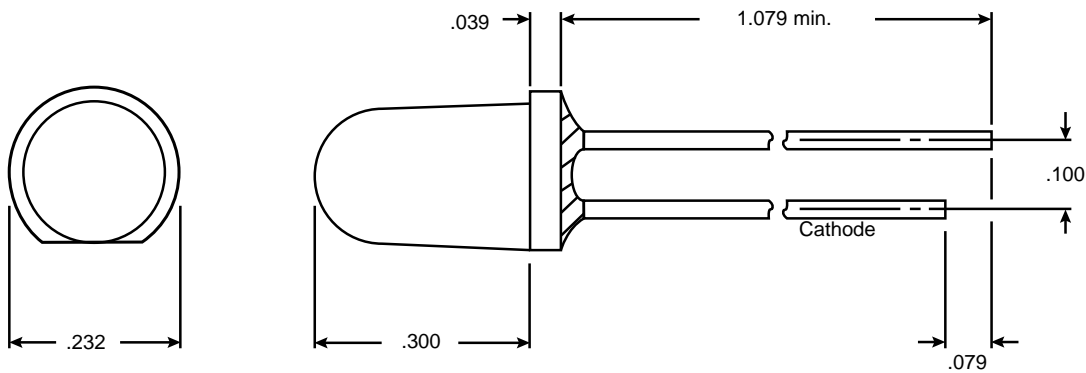
**Electrical Characteristics (Ta=25°C)**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>F</sub>	Forward voltage	I <sub>F</sub> =20mA		1.65	2.0	V
I <sub>R</sub>	Reverse current	V <sub>R</sub> =5V			100	μA
λ <sub>P</sub>	Peak emission wavelength	I <sub>F</sub> =20mA		655		nm
I <sub>V</sub>	Luminous intensity	I <sub>F</sub> =10mA	0.15	0.42		mcd

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Dimensions (In.)



**Material Specifications:**

- Dice material: Gap
- Light Color: Red
- Lens Color: Red diffused

**Absolute Maximum Ratings @ Ta=25°C**

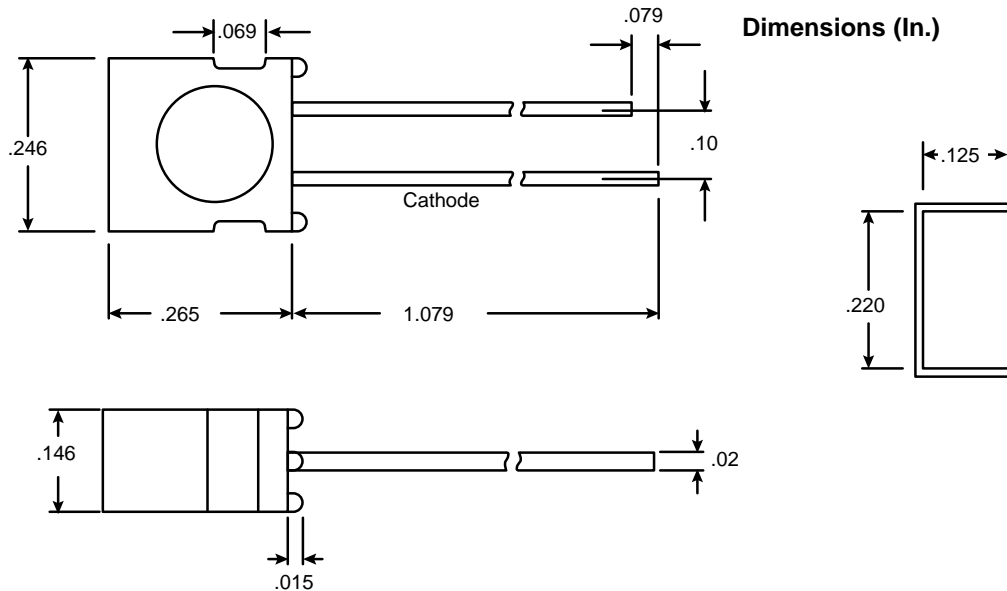
Parameter	
Power Dissipation (mW)	200
DC Forward Current (mA)	15
Peak Forward Current (mA)	100
Reverse Voltage (V)	5
Operating Temperature Range	-25°C to +85°C
Storage Temperature Range	-25°C to +100°C
Lead Solder Temperature .063" below package (case) 260°C for 5 seconds	

**Electrical Characteristics (Ta=25°C)**

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F=20mA$		3	15	V
Reverse Current	$I_R$	$V_R=5V$			100	$\mu A$
Peak Emission Wavelength	$\lambda_P$	$I_F=20mA$		640		nm
Luminous Intensity	$I_V$	$I_F=10mA$	0.8	1.2		mcd

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### Absolute Maximum Ratings at Ta=25°C

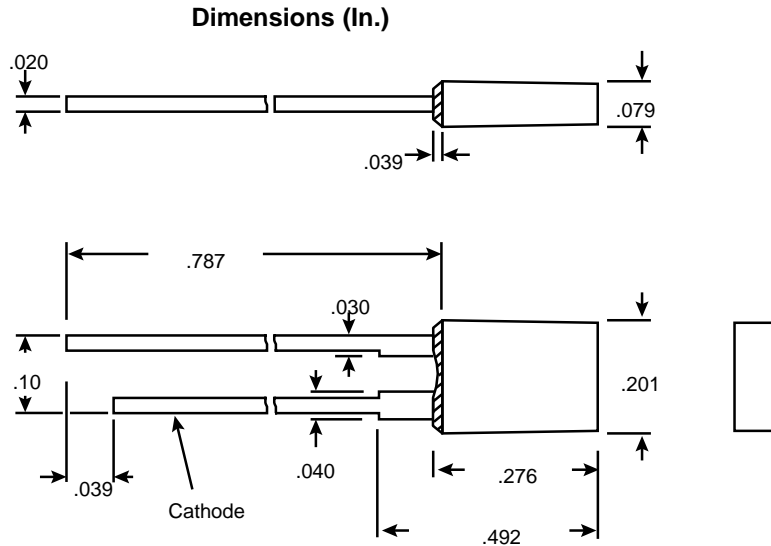
Parameter	Symbol	351-7101	351-7103
		351-7102 351-7104	
Power Dissipation (mW)	$P_D$	100	100
DC Forward Current (mA)	$I_F$	30	30
Peak Forward Current (mA)	$I_{PF}$	120	80
Reverse Voltage (V)	$V_R$	5	5
Operating Temperature Range	$T_{opr}$	-40°C to +100°C	
Storage Temperature Range	$T_{stg}$	-40°C to +100°C	
Lead Solder Temperature 0.063" from body 260°C for 5 seconds			

### Electrical Characteristics at Ta=25°C

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current ( $\mu$ A)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-7101	GaP	Red	Red Diff	2.1	2.8	100	695	0.8	1.4
351-7102	GaP	Green	Green Diff	2.1	2.8	100	565	2.0	6.5
351-7103	GaAsP/GaP	Yellow	Yellow Diff	2.0	2.8	100	585	2.0	6.5
351-7104	GaAsP/GaP	Orange	Orange Diff	2.0	2.8	100	635	2.0	7.5

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### Absolute Maximum Ratings at Ta=25°C

Parameter	351-6201	351-6203	351-6204
Power Dissipation (mW)	80	100	100
DC Forward Current (mA)	30	30	30
Peak Forward Current (mA)	80	120	120
Reverse Voltage (V)	5	5	5
Operating & Storage Temperature Range	-40°C to +100°C		
Lead solder temperature 0.063" below package (case)	260°C for 5 seconds		

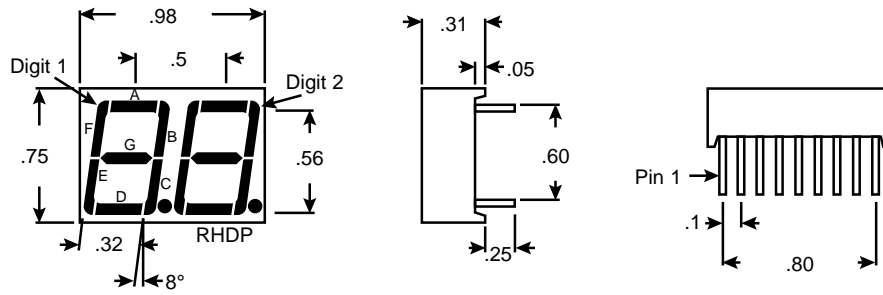
### Electrical Characteristics at Ta=25°C

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-6201	GaP	Red	Red Diff	2.1	2.8	100	695	0.2	0.5
351-6203	GaP	Green	Grn Diff	2.0	2.8	100	570	0.5	2.0
351-6204	GaAsP/GaP	Yellow	Yel Diff	2.0	2.8	100	590	0.5	1.7

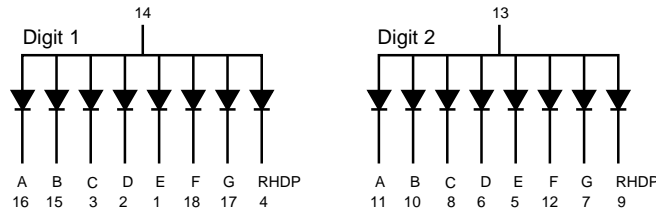
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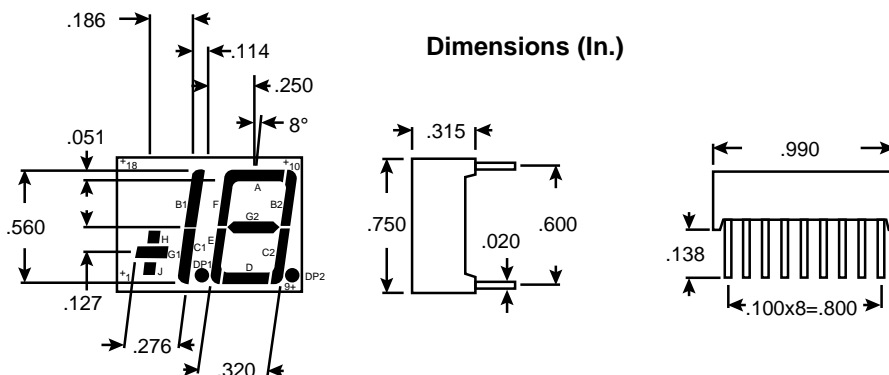
Dimensions (In.)



**Electrical Specifications:**

- Power dissipation: 120mW
- DC forward current: 20mA
- Reverse current: 100µA
- Operating and storage temperature: -45°C to 85°C
- Forward voltage: Hi-eff. red=2.2V (typ.) 2.8V (max.)
- Reverse current (V<sub>r</sub>=5V): 100µA
- Peak emission wavelength @ (I<sub>F</sub>=20mA): Hi-eff. red=655NM

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**351-5200**

Common cathode function:

1. G1 seg. anode
2. H&J seg. anode
3. C1 seg. anode
4. DP1 anode
5. E seg. anode
6. D seg. anode
7. G2 seg. anode
8. C2 seg. anode
9. DP2 anode
10. B2 seg. anode
11. A seg. anode
12. F seg. anode
13. Digit2 common cathode
14. Digit1 common cathode
15. B1 seg. anode
16. NC
17. NC
18. NC

**351-5400**

Common cathode function:

1. G1 seg. cathode
2. H&J seg. cathode
3. C1 seg. cathode
4. DP1 cathode
5. E seg. cathode
6. D seg. cathode
7. G2 seg. cathode
8. C2 seg. cathode
9. DP2 cathode
10. B2 seg. cathode
11. A seg. cathode
12. F seg. cathode
13. Digit2 common anode
14. Digit1 common anode
15. B1 seg. cathode
16. NC
17. NC
18. NC

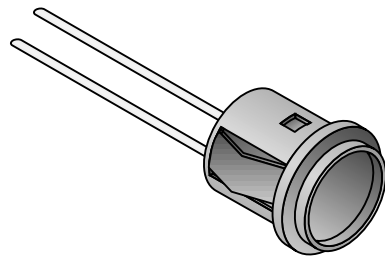
**Absolute maximum ratings @ Ta=25°C**

Reverse voltage: GaAsP 3.0V, others 5.0V  
 Forward current: 30mA  
 Peak forward current (1/10 duty cycle, 0.1ms pulse width): 100mA  
 Operating temp. range: -25°C to +85°C  
 Storage temp. range: -25°C to +100°C  
 Lead soldering temp.: (.063" below case) 260°C for 3 seconds

Mouser Stock No.		LED		Peak Wavelength @ 20mA (nm)	Forward Voltage @ 20mA (V)		Luminous Intensity @ 10mA (mcd)	
Common Anode	Common Cathode	Material	Color		Typ.	Max.	Min.	Typ.
351-5410	351-5210	GaAsP	Red	655	1.7	2.0	0.2	0.5
351-5420	351-5220	GaAsP/GaP	Hi Eff. Red	635	2.1	3.0	1.3	3.3
351-5430	351-5230	GaAsP/GaP	Orange	635	2.1	3.0	1.3	3.3
351-5440	351-5240	GaAsP/GaP	Yellow	585	2.1	3.0	0.9	2.3
351-5450	351-5250	GaP	Green	567	2.1	3.0	1.1	2.9

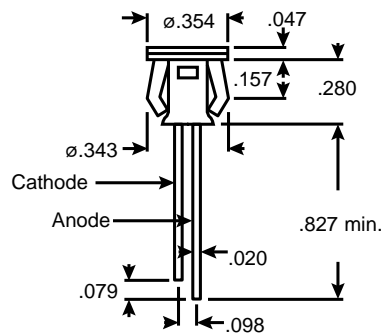
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ø.193±.008

Dimensions (In.)



Panel Thickness	Mounting Hole Size
.079	.303+.004-.000
.118	.311+.000-.004

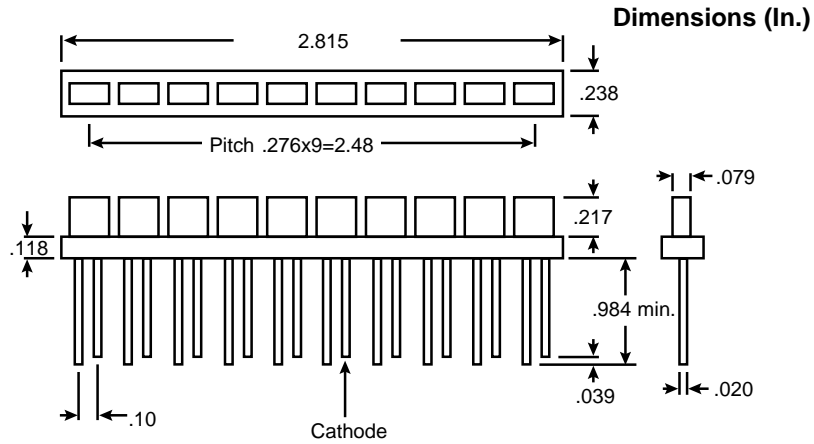
**Absolute Maximum Ratings (Ta=25°C)**

Mouser Stock No.	Color	IF (mA)	VR (V)	P (mW)	Top. (°C)	Tstg (°C)
351-MP075-R	Red	25	4	70	-10~	-10~
351-MP075-Y	Yellow	25	4	70	+50	-60
351-MP075-G	Green	25	4	70		

**Electro-Optical Characteristics (IF=15mA Ta=25°C)**

Mouser Stock No.	Color	VF (V)		IR (µA) VR=4V	Cd (mcd)		λP(nm) (Typ.)	Δλ (nm) (Typ.)
		Max.	Min.		Max.	Min.		
351-MP075-R	Red	2.1	2.8	5	0.5	1.5	700	100
351-MP075-Y	Yellow	2.1	2.8	100	0.8	4.5	586	32
351-MP075-G	Green	2.1	2.8	5	1.4	5	565	25

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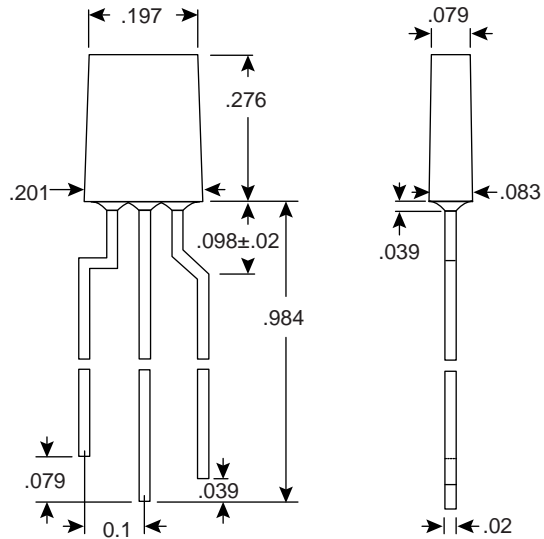
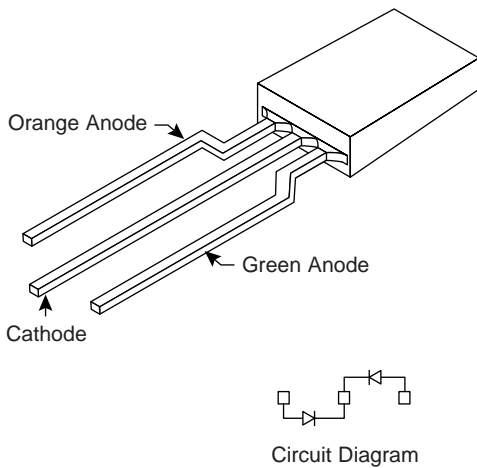
### Absolute Maximum Ratings @ Ta=25°C

Parameter	351-1801	351-1802	351-1803
Power Dissipation (mW)	80	100	100
DC Forward Current (mA)	30	30	30
Peak Forward Current (mA)	80	120	80
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-20°C to +80°C		
Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature	.063" below package (case) 260°C for 5 seconds		

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Holder Material	Forward Voltage (V) Typ	Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd) Typ
351-1801	GaP	Red	Red Diff	Black ABS	2.2	100	695	0.5
351-1802	GaP	Green	Green Diff	Black ABS	2.2	100	570	2.0
351-1803	GaAsP/GaP	Yellow	Yellow Diff	Black ABS	2.1	100	590	3.0

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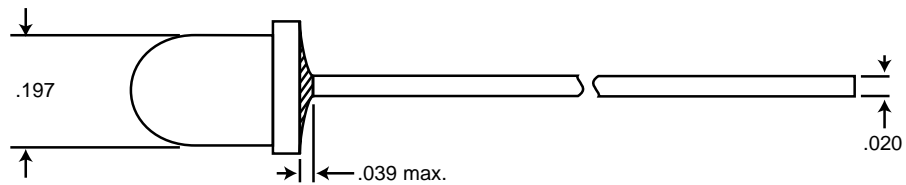


### Dimensions (In.)

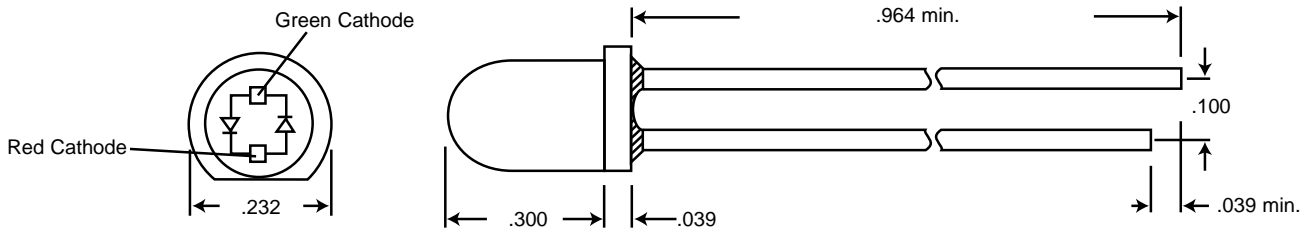
#### Specifications:

- Type: dual color
- Light color: orange, green
- Lens color: white diffusion
- Dice material: GaAsP/GaP orange, GaP green
- Power dissipation: 100mW
- Reverse voltage: 5V
- Average forward current: 30mA
- Peak forward current (duty=0.1,10KHz): 120mA
- Lead soldering temperature (0.063" from body): 260°C for 5 seconds
- Forward voltage ( $I_f=20\text{mA}$ ): orange = 2V typ., 2.8V max.; green = 2.1V typ., 2.8V max.
- Reverse current ( $V_R=5\text{V}$ ): 100 $\mu\text{A}$
- Peak emission wavelength ( $I_f=20\text{mA}$ ): orange = 635 nm.; green = 570 nm.
- Luminous intensity ( $I_f=10\text{mA}$ ): orange = 2mcd min., 5mcd typ.; green = 1.5mcd min., 2.5mcd typ.

Absolute Maximum Ratings:  $T_a = 25^\circ\text{C}$



Dimensions (In.)

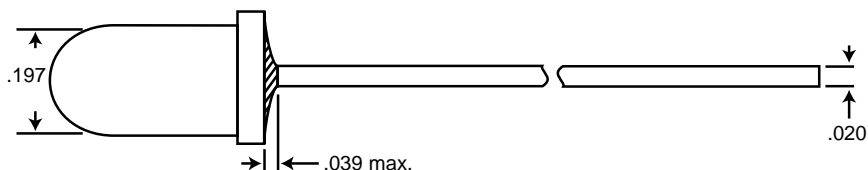


**Absolute Maximum Ratings @ Ta=25°C**

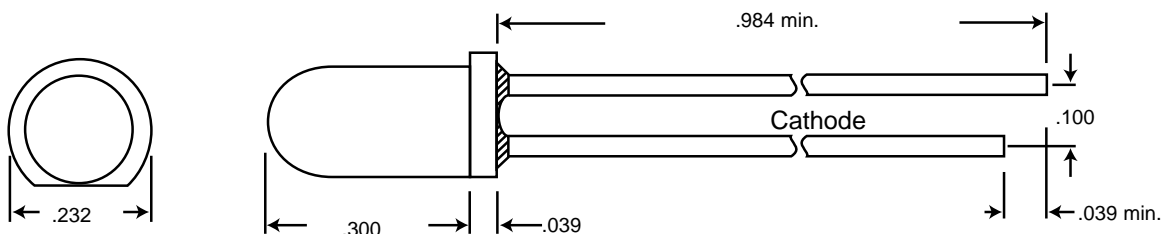
Parameter	Red	Green
Power Dissipation (mW)	80	100
DC Forward Current (mA)	30	30
Peak Forward Current (mA)	80	120
Reverse Voltage (V)	5	5
Operating Temperature Range	-20°C to +85°C	
Storage Temperature Range	-40°C to +100°C	
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds	

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-5101	GaP/GaP	Red/Green	White Diff	2.2	2.8	100	695/570	1.0/2.0	1.5/5.5
351-5104	GaP/GaP	Hi-eff Red/Green	White Diff	2.2	2.8	100	635/565	1.0/2.0	1.5/5.5

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Dimensions (In.)



**Absolute Maximum Ratings (Ta=25°C)**

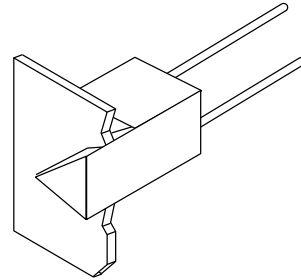
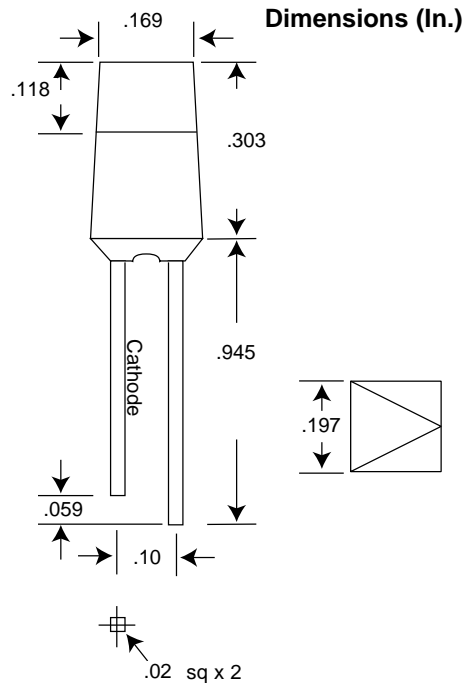
Symbol	Parameter	351-5031	351-5033	351-5034	351-5035
P <sub>D</sub>	Power dissipation (mW)	80	100	100	100
V <sub>R</sub>	Reverse voltage (V)	5	5	5	5
I <sub>F</sub>	Average forward current (mA)	30	30	30	30
I <sub>PF</sub>	Peak forward current (mA)	80	120	80	120
T <sub>opr</sub>	Operating temperature range	-20°C to +80°C			
T <sub>stg</sub>	Storage temperature range	-40°C to +100°C			

Lead soldering temperature 0.063" from body 260°C for 5 seconds

**Electrical characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5031	GaP	Red	Red trans	2.1	2.8	100	695	5.0	13.0	35°
351-5033	GaP	Green	Green trans	2.1	2.8	100	565	20	57	35°
351-5034	GaAsP/GaP	Yellow	Yellow trans	2.1	2.8	100	590	20	35	35°
351-5035	GaAsP/GaP	Orange	Orange trans	2.0	2.8	100	635	20	50	35°

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**Material Specifications:**

- Dice material: GaAsp
- Emitted light: red
- Lens color: red diffused

**Absolute Maximum Ratings @ Ta = 25°C**

Parameter	Max	Unit
Power Dissipation	70	mW
DC Forward Current	30	mA
Peak Forward Current	1.0	A
Reverse Voltage	5	V
Operating and Storage Temperature Range	-25°C to +85°C	
Lead Solder Temperature .063" below package (case) 230°C for 5 seconds		
Solder DIP test .079" from body 260°C for 10 seconds		

**Electrical and Optical Characteristics: TA=25°C**

Characteristics	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V <sub>F</sub>		1.7	2.0	Volt	I <sub>F</sub> = 20 mA
Reverse Current	I <sub>R</sub>			100	uA	V <sub>R</sub> = 5V
Luminous Intensity	I <sub>V</sub>	0.30	0.45		mcd	I <sub>F</sub> = 10mA
Peak Wave Length	λ <sub>P</sub>		655		nm	I <sub>F</sub> = 10mA

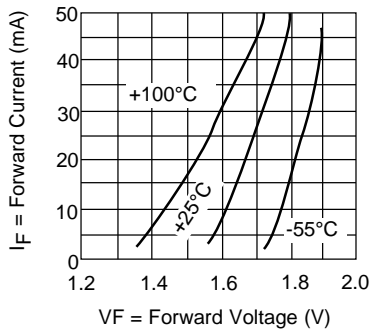
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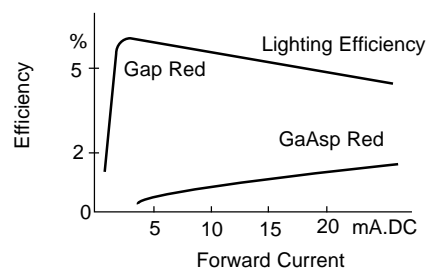
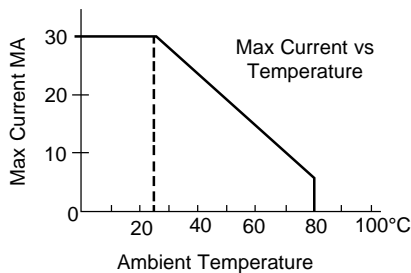
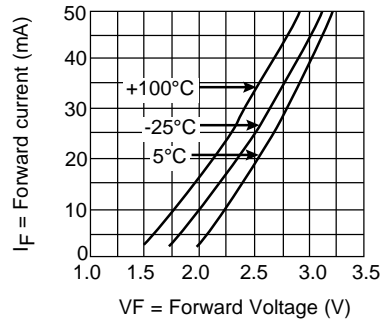


Typical Opto-Electronics Characteristics Curves:

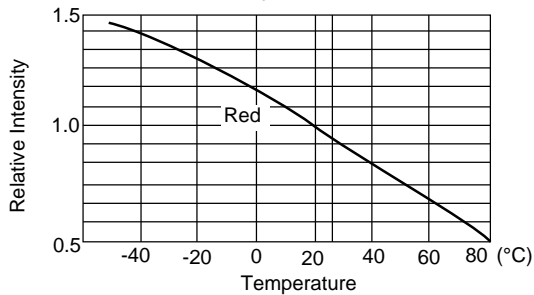
Forward Current Versus Forward Voltage (Red GaAsP)



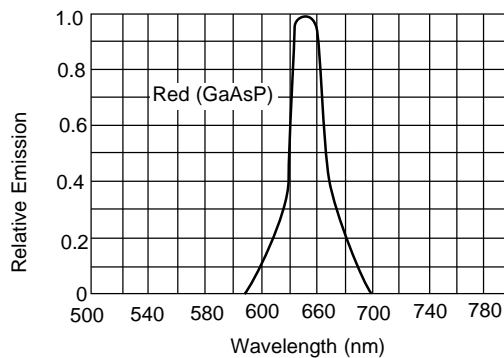
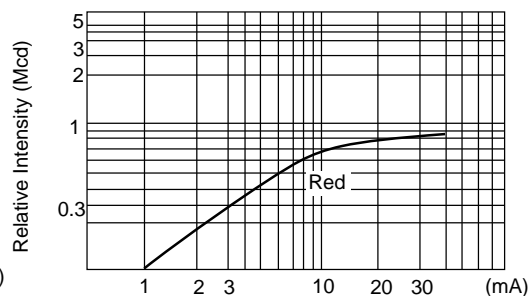
Forward Current Versus Forward Voltage (Red GaAsP)



Luminous Intensity vs Temperature

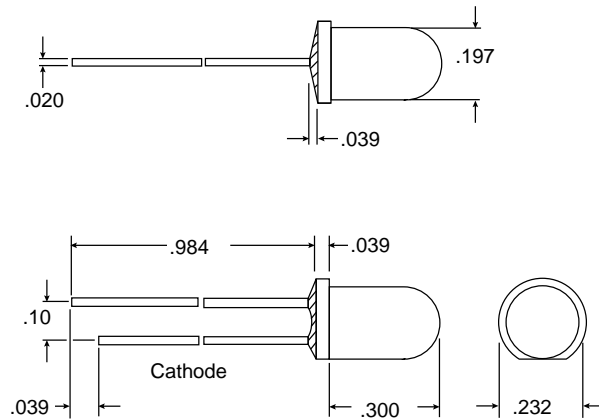


Luminous Intensity vs Forward Current



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**Absolute Maximum Ratings @ Ta=25°C**

Parameter	351-5022	351-5024	351-5023 351-5025
Power Dissipation (mW)	80	100	100
DC Forward Current (mA)	30	30	30
Peak Forward Current (mA)	80	80	120
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-20°C to +80°C	-40°C to +100°C	-20°C to +80°C
Storage Temperature Range	-40°C to +100°C		-40°C to +100°C
Lead Solder Temperature 0.063" below package (case) 260°C for 5 sec			

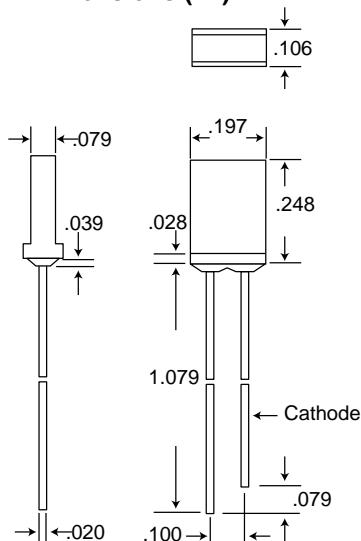
**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (uA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min.	Typ.	
351-5022	GaP	Red	Red Diff	2.2	2.8	100	695	2.0	5.0	35°
351-5023	GaP	Green	Green Diff	2.2	2.8	100	570	8.0	18.0	35°
351-5024	GaAsP/GaP	Yellow	Yellow Diff	2.0	2.8	100	585	5.0	11.0	35°
351-5025	GaAsP/GaP	Orange	Orange Diff	2.0	2.8	100	635	6.0	18.0	35°

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### Dimensions (In.)



### Absolute Maximum Ratings @ Ta=25°C

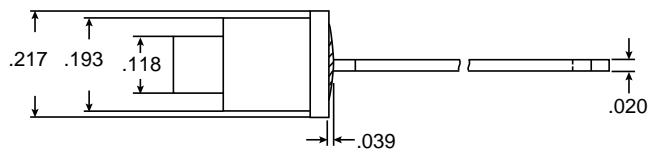
Parameter	351-9402	351-9403	351-9404
Power Dissipation (mW)	80	100	100
DC Forward Current (mA)	30	30	30
Peak Forward Current (mA)	80	120	80
Reverse Voltage (V)	5	5	5
Operating & Storage Temperature Range	-40°C to +100°C		-40°C to +180°C
Lead Solder Temperature .063" below package (case) 260°C for 5 seconds			

### Electrical Characteristics (Ta=25°C)

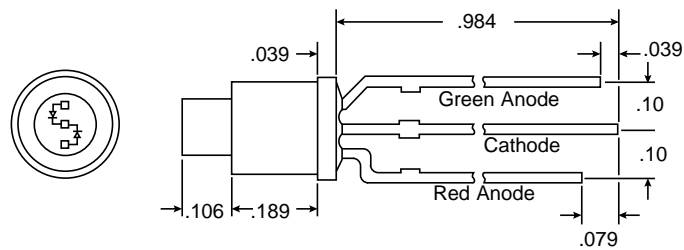
Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-9402	GaP	Red	Red Diff	2.1	2.8	100	695	0.5	1.0
351-9403	GaP	Green	Green Diff	2.1	2.8	100	565	1.5	3.0
351-9404	GaAsP/GaP	Yellow	Yellow Diff	2.0	2.8	100	585	1.0	2.5

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Dimensions (In.)



**Specifications:**

- Dice material: GaP
- Light color: red/green
- Lens color: white diffused

**Absolute Maximum Ratings @ Ta=25°C**

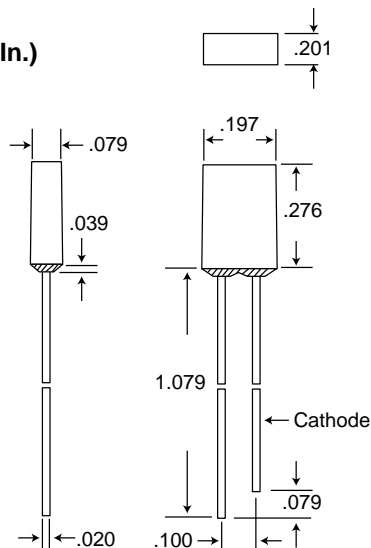
Symbol	Parameter	
P <sub>D</sub>	Power Dissipation (mW)	80
V <sub>R</sub>	DC Forward Current (mA)	30
I <sub>AF</sub>	Peak Forward Current (mA)	80
I <sub>PF</sub>	Reverse Voltage (V)	5
T <sub>OPR</sub>	Operating Temperature Range	-20°C to +80°C
T <sub>STG</sub>	Storage Temperature Range	-40°C to +100°C
Lead Solder Temperature .063" below package (case)		260°C for 5 seconds

**Electrical Characteristics (Ta=25°C)**

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V <sub>F</sub>	Forward Voltage	Red	I <sub>F</sub> =20mA	2.2	2.8	V
		Green		2.2	2.8	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V			100	µA
λ <sub>P</sub>	Peak Emission Wavelength	Red	I <sub>F</sub> =20mA	695		nm
		Green		570		
I <sub>V</sub>	Luminous Intensity	Red	I <sub>F</sub> =10mA	1.5	3.0	mcd
		Green		1.0	2.5	

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**Absolute Maximum Ratings @ Ta=25°C**

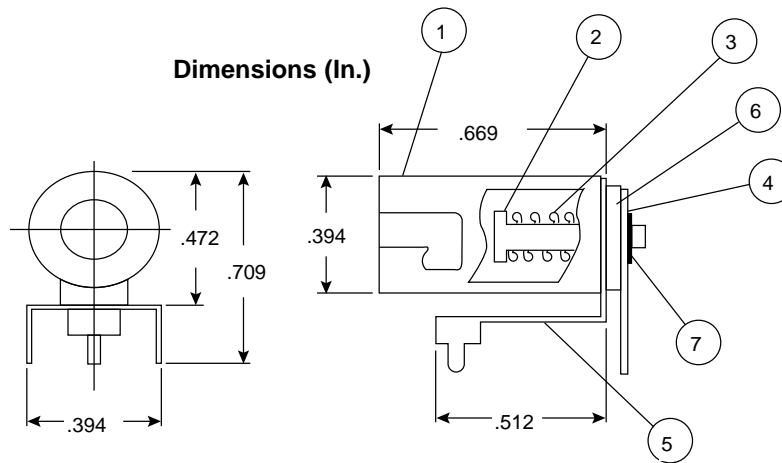
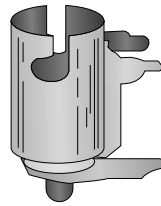
Parameter	351-6212	351-6213	351-6214
Power Dissipation (mW)	80	100	100
DC Forward Current (mA)	30	30	30
Peak Forward Current (mA)	80	120	80
Reverse Voltage (V)	5	5	5
Operating & Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds		

**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-6212	GaP	Red	Red Diff	2.1	2.8	100	695	0.5	1.0
351-6213	GaP	Green	Green Diff	2.1	2.8	100	565	1.5	3.0
351-6214	GaAsP/GaP	Yellow	Yellow Diff	2.0	2.8	100	585	1.0	2.5

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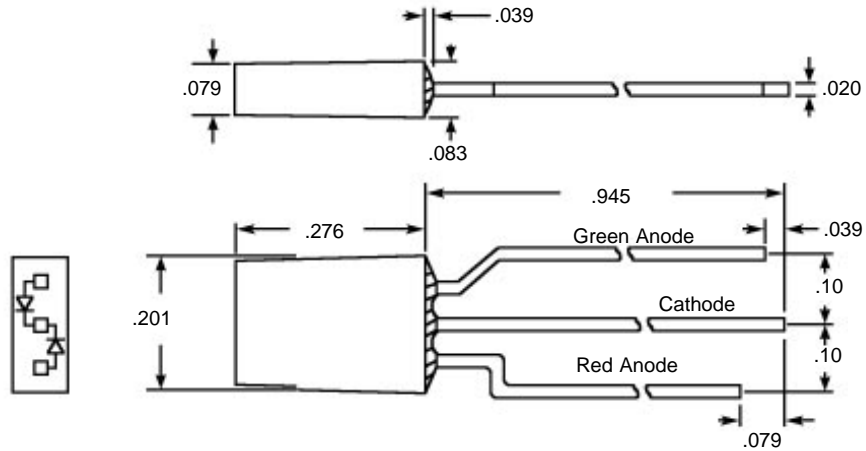
**Specifications:**

- Power rating: 5W max
- Withstand voltage: 1500VAC
- Insulation resistance: 100MΩ @ 500VDC

No.	Description	Materials
1	Socket base	Nickel plated brass
2	Contact rivet	Nickel plated brass
3	Spring	Nickel plated piano wire
4	Terminal (+)	Nickel plated brass
5	Terminal (-)	Nickel plated brass
6	Washer	Phenol
7	Eyelet	Brass

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### Absolute Maximum Ratings (Ta=25°C)

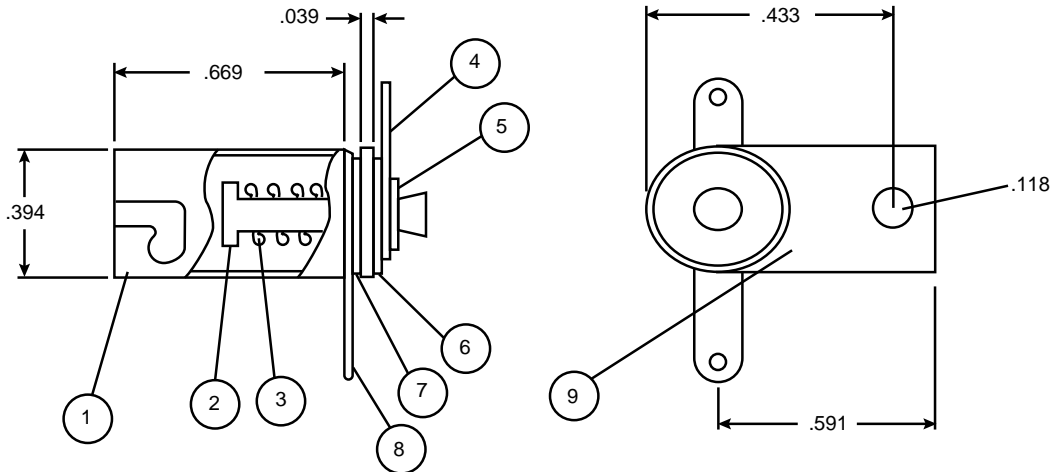
Symbol	Parameter	351-5102	351-5107
P <sub>D</sub>	Power dissipation (mW)	80	100
I <sub>F</sub>	Average forward current (mA)	30	30
I <sub>PF</sub>	Peak forward current (mA)	80	120
V <sub>R</sub>	Reverse voltage (V)	5	5
T <sub>OPR</sub>	Operating temperature range	-20°C to +80°C	
T <sub>STG</sub>	Storage temperature range	-40°C to +100°C	
Lead soldering temperature 0.063" from body 260°C for 5 seconds			

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (μA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-5102	GaP/GaP	Red/Green	White Diff	2.2	2.8	100	695/570	.2/1.0	.5/2.0
351-5107	GaAsP/GaP/GaP	Hi-eff Red/Green	White Diff	2.0/2.2	2.8	100	635/570	1.0/.8	2.2/1.9

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Dimensions (In.)



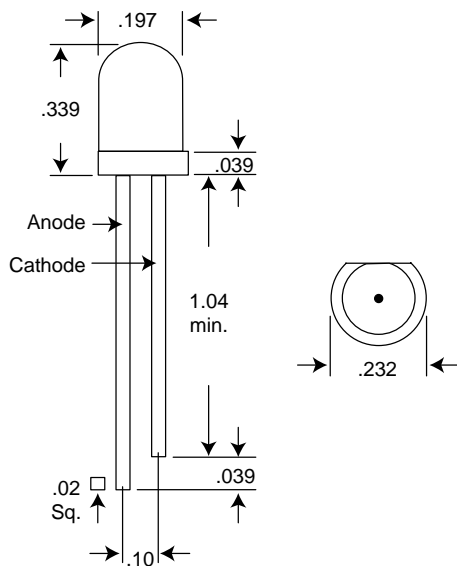
**Specifications:**

- Power rating: 5W max
- Withstand voltage: 1500VAC
- Insulation resistance: 100MΩ @ 500VDC

Number	Name	Description
1	Socket base	Nickel plated brass
2	Contact rivet	Nickel plated brass
3	Spring	Nickel plated piano wire
4	Terminal (+)	Nickel plated brass
5	Eyelet	Brass
6	Washer	Phenol
7	Washer	Phenol
8	Terminal (-)	Nickel plated brass
9	Bracket	Nickel plated brass

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Dimensions (In.)

**Specifications:**

- Standard size: T-1 3/4 (5mm)
- Absolute maximum ratings:  $T_a=25^{\circ}\text{C}$
- Power dissipation: 80mW
- DC forward current: 30mA
- Peak forward current: 60mA
- Reverse voltage: 1.4V
- Operating temperature range:  $0^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Storage temperature range:  $-20^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Lead solder temperature : .079" below package (case)  $200^{\circ}\text{C}$  for 5 seconds
- Pulse rate: 1.0Hz (min.), 2.0Hz (typ.),  $w/v=3V$

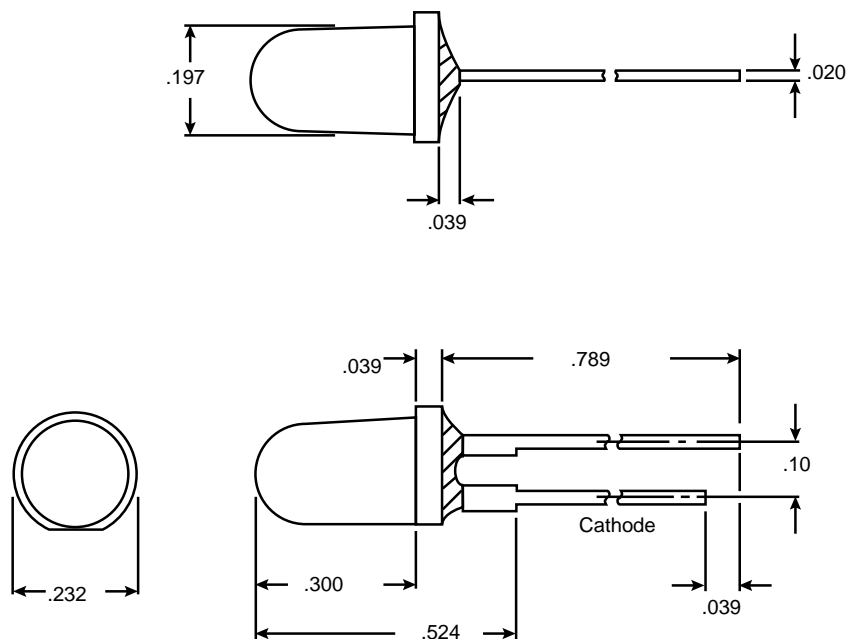
Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max		Min	Typ	
351-8001	GaP	Red	Red Diff	3.0	15.0	697	1.5	2.0	16°
351-8002	GaP	Green	Green Diff	3.0	15.0	565	5.0	7.0	16°
351-8003	GaAsP/GaP	Yellow	Yellow Diff	3.0	15.0	585	5.0	7.0	16°

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### Dimensions (In.)



### Absolute Maximum Ratings (Ta=25°C)

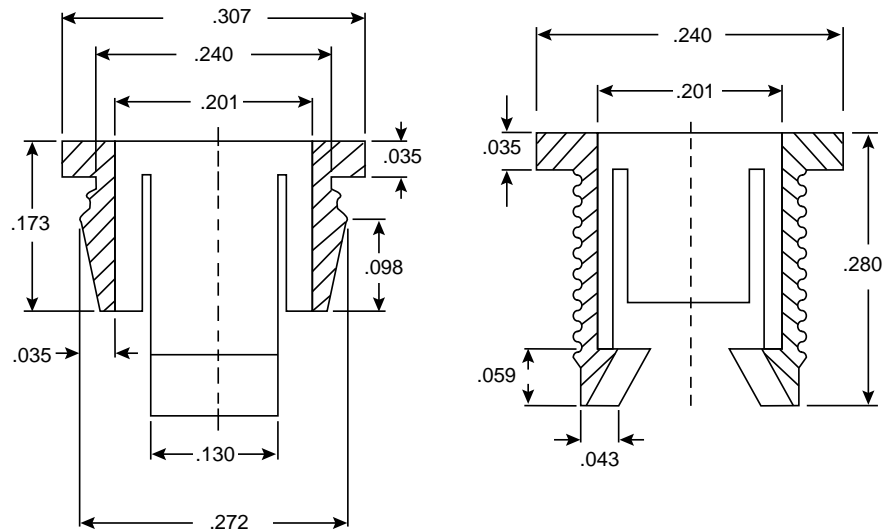
Parameter	351-5001	351-5003	351-5004
Power dissipation (mW)	80	100	100
DC forward current (mA)	40	30	30
Peak forward current (mA)	200	120	80
Reverse voltage (V)	5	5	5
Operating and storage temperature range	-40°C to +100°C		
Lead soldering temperature 0.063" below package (case) 260°C for 5 seconds			

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (uA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5001	GaAsP/GaAs	Red	Red Diff	1.7	2.0	100	655	0.5	1.0	130°
351-5003	GaP	Green	Green Diff	2.1	2.8	100	565	3.5	6.5	130°
351-5004	GaAsP/GaP	Yellow	Yellow Diff	2.0	2.8	100	585	3.0	6.0	130°

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### Dimensions (In.)

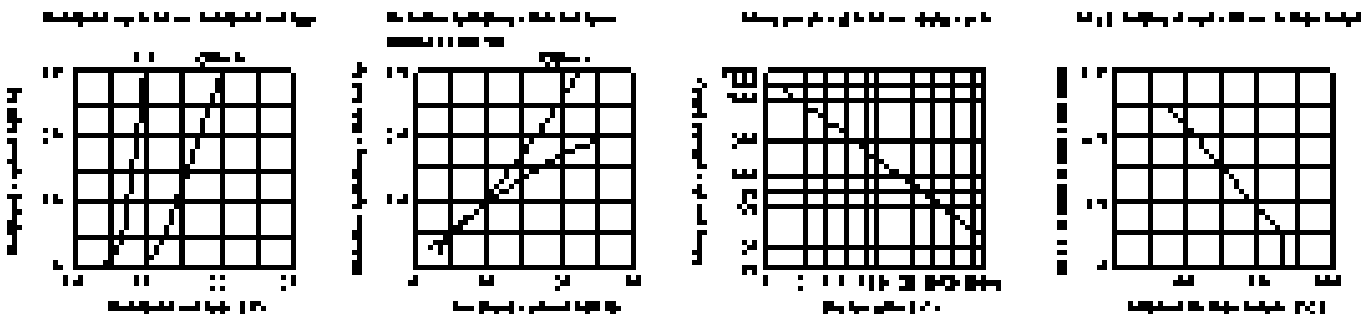
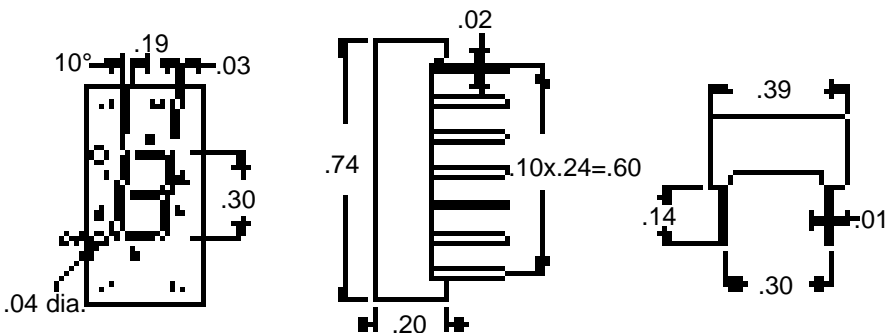


### Specifications:

- Fits package size: T-1 3/4
- Material: Polypropylene

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### Electrical Specifications:

- Forward voltage: Red-1.7 (Typ.) 2.0V (Max.)  
Hi-EFF red, orange, yellow  
and green: 2.1V (Typ.) 3.0V (Max.)
- Reverse current: (Vr-3V): 100µA
- Peak emission wavelength: @ (IF=20mA)  
Red=655nm, HI-EFF red=635nm,  
Orange=635nm, Yellow=585nm, Green=567nm

### Absolute Maximum Ratings:

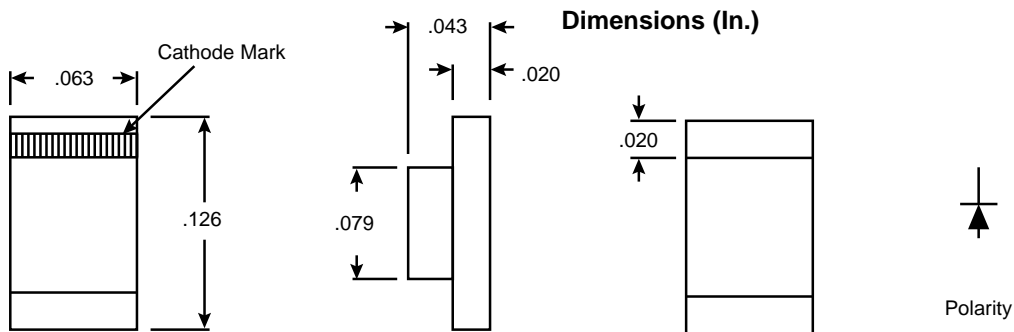
- Power dissipation: Red=100mW, HI-EFF red,  
orange, yellow, and green=85mW
- Operating temperature range: -40°C to +85°C
- Storage temperature range: -55°C to +100°C

### Common Anode

Pin No.	Function
1.	A cathode
2.	F cathode
3.	Common anode
4.	No pin
5.	No pin
6.	DP cathode
7.	E cathode
8.	D cathode
9.	No connection
10.	C cathode
11.	G cathode
12.	No pin
13.	B cathode
14.	Common anode

Mouser Stock No.	Color	Luminous Intensity (IF=10mA) (mcd) Typ./Seg.	Description
351-1310	Red	0.45	Common Anode LHDP
351-1320	Hi-EFF Red	1.8	Common Anode LHDP
351-1330	Orange	1.8	Common Anode LHPD
351-1340	Yellow	1.6	Common Anode LHPD
351-1350	Green	1.65	Common Anode LHPD

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**Absolute Maximum Ratings**

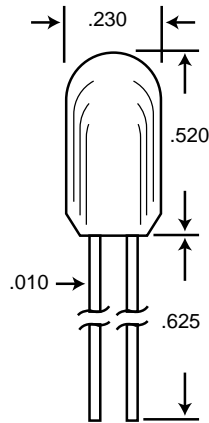
Pd (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> (mA)	V <sub>R</sub> (V)	Top (°C)	T <sub>st</sub> (°C)
65	25	100	5	-25~+80	-30~+85

**Electrical Characteristics (T<sub>a</sub>=25°C)**

Mouser Stock No.	Emitted Light Color	Forward Voltage (V)		Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
		Typ	Max		Min	Typ	
351-150O	Orange	2.2	2.6	605	4.5	13.0	120°
351-150R	Red	2.2	2.6	700	1.0	2.4	120°
351-150Y	Yellow	2.1	2.6	589	5.0	12.0	120°
351-150G	Green	2.2	2.6	567	5.0	20.0	120°

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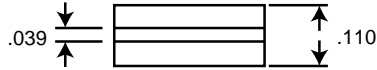
Dimensions (In.)

Mouser Stock No.	Volts	Amps	M.S.C.P. (Approx.)	Life (Hrs.)	Filament Shape
353-1705	14.0	.080	.500	750	C2F
353-1764	28.0	.040	.340	7,000	C2F
353-2112	6.3	.200	.550	3,000	C2R
353-2174	12.0	.040	.120	10,000	C2F
353-2180	6.3	.040	.020	50,000	C2F
353-2182	14.0	.080	.300	50,000	C2F
353-2187	28.0	.040	.300	25,000	C2F
353-2200	5.0	.060	.050	100,000	C2R

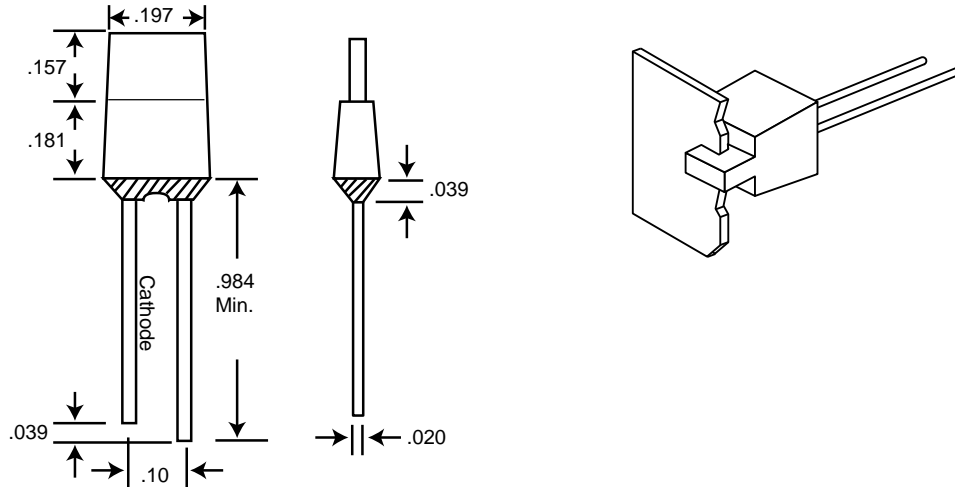
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Dimensions (In.)



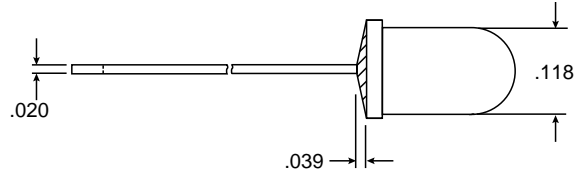
**Absolute Maximum Ratings (Ta=25°C)**

Parameter	351-6401	351-6403	351-6404
Power Dissipation (mW)	80	100	100
Reverse Voltage (mA)	30	30	30
Peak Forward Current (mA)	80	120	80
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-20°C to +80°C		
Storage Temperature Range	-40°C to +100°C		
Lead soldering temperature 0.063" below package 260°C for 5 seconds			

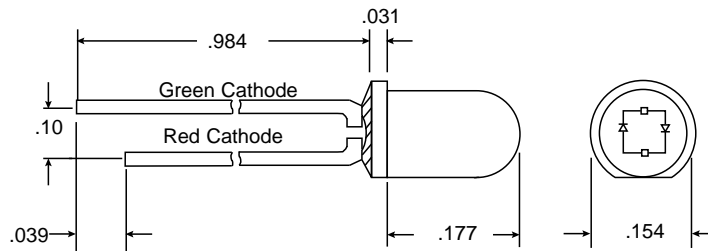
**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ.	Max.			Min.	Typ.
351-6401	GaP	Red	Red Diff	2.2	2.8	100	695	0.3	0.9
351-6403	GaP	Green	Green Diff	2.2	2.8	100	570	1.0	2.5
351-6404	GaAsP/GaP	Yellow	Yellow Diff	2.2	2.8	100	590	1.5	2.5

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Dimensions (In.)



**Absolute Maximum Ratings @ Ta=25°C**

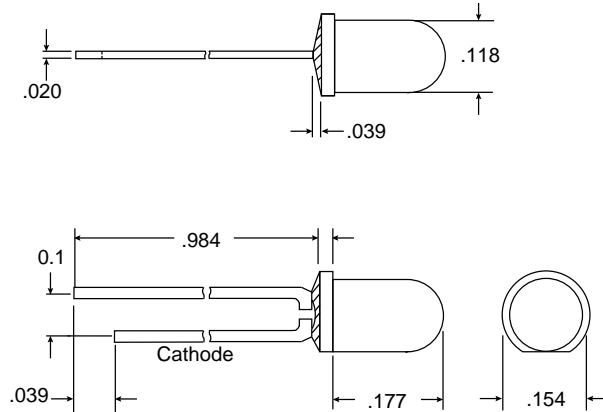
Parameter	Red	Green
Power Dissipation (mW)	80	100
DC Forward Current (mA)	30	30
Peak Forward Current (mA)	80	120
Reverse Voltage (V)	5	5
Operating Temperature Range	-20°C to +80°C	
Storage Temperature Range	-40°C to +100°C	
Lead Solder Temperature .063" below package (case)	260°C for 5 seconds	

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3101	GaP/GaP	Red/Green	White Diff	2.2	2.8	100	695/570	1.5/5.0	2.5/10.0	40°
351-3102	GaAsP/GaP	Hi-eff Red/Green	White Diff	2.0/2.2	2.8	100	635/570	4.0/3.0	8.0/6.0	40°

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### Dimensions (In.)



### Absolute Maximum Ratings (Ta=25°C)

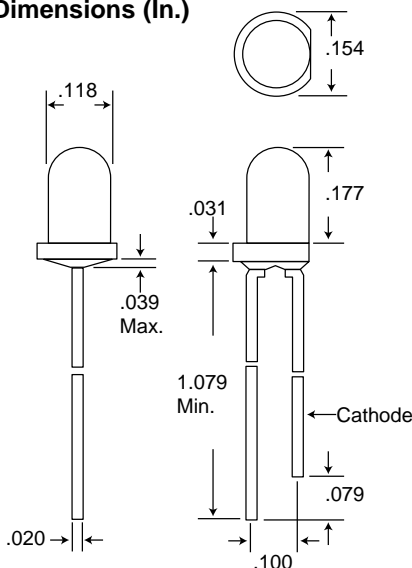
Symbol	Parameter	351-3102	351-3103	351-3104
P <sub>D</sub>	Power dissipation (mW)	80	100	100
I <sub>AF</sub>	Average forward current (mA)	30	30	30
I <sub>PF</sub>	Peak forward current (mA)	80	120	80
V <sub>R</sub>	Reverse voltage (V)	5	5	5
T <sub>OPR</sub>	Operating temperature range	-20°C to +80°C		
T <sub>STG</sub>	Storage temperature range	-40°C to +100°C		
Lead soldering temperature 0.063" from body 260°C for 5 seconds				

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3102	GaP/GaP	Red	Red Diff	2.2	2.8	100	695	2.0	4.0	40°
351-3103	GaP/GaP	Green	Green Diff	2.2	2.8	100	570	7.0	17.0	40°
351-3104	GaAsP/GaP	Yellow	Yellow Diff	2.1	2.8	100	590	7.0	17.0	40°

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Dimensions (In.)



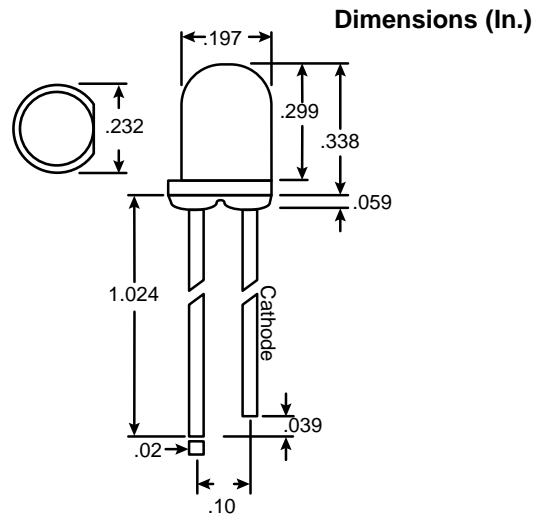
**Absolute maximum ratings (Ta=25°C)**

Symbol	Parameter	351-3011	351-3013	351-0314
P <sub>D</sub>	Power dissipation (mW)	80	100	100
I <sub>F</sub>	Average forward current (mA)	30	30	30
I <sub>PF</sub>	Peak forward current (mA)	80	120	80
V <sub>R</sub>	Reverse voltage (V)	5	5	5
T <sub>OPR</sub>	Operating temperature range	-20°C to +80°C		
T <sub>STG</sub>	Storage temperature range	-40°C to +100°C		
Lead soldering temperature 0.063" from body 260°C for 5 seconds				

**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (μA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3011	GaP	Red	Red trans.	2.2	2.8	100	695	3.0	6.0	40°
351-3013	GaP	Green	Green trans.	2.2	2.8	100	570	25	30	40°
351-3014	GaAsP/GaP	Yellow	Yellow trans.	2.1	2.8	100	590	6.0	18	40°

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### Absolute Maximum Ratings (Ta=25°C)

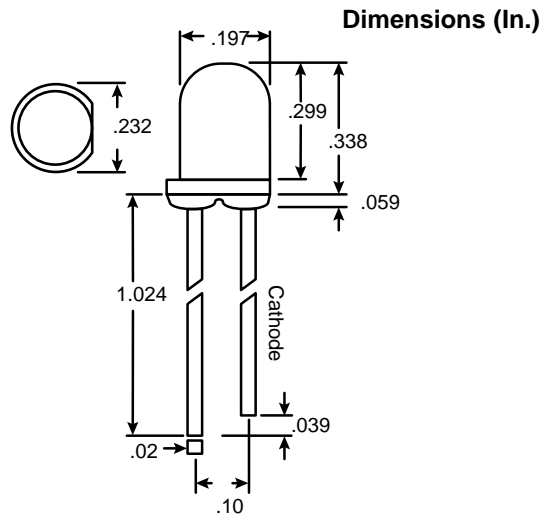
Parameter	351-5111	351-5502	351-5302
Power Dissipation (mW)	80	100	60
DC Forward Current (mA)	40	30	20
Peak Forward Current (mA)	200	120	80
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-40°C to +85°C		
Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .079" below package (case) 260°C for 5 seconds			

### Electrical Characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5111	GaAlAs	Red	Red Diffused	1.5	2.4	100	660	120	200	44°
351-5502	GaP	Green	Green Diffused	1.7	2.8	100	565	25	40	44°
351-5302	GaAsP/GaP	Yellow	Yellow Diffused	1.7	2.8	100	585	180	300	44°

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**Absolute Maximum Ratings (Ta=25°C)**

Parameter	351-5110	351-5501	351-5301
Power Dissipation (mW)	110	100	85
DC Forward Current (mA)	40	30	20
Peak Forward Current (mA)	200	160	160
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-40°C to +85°C		
Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .079" below package (case) 260°C for 5 seconds			

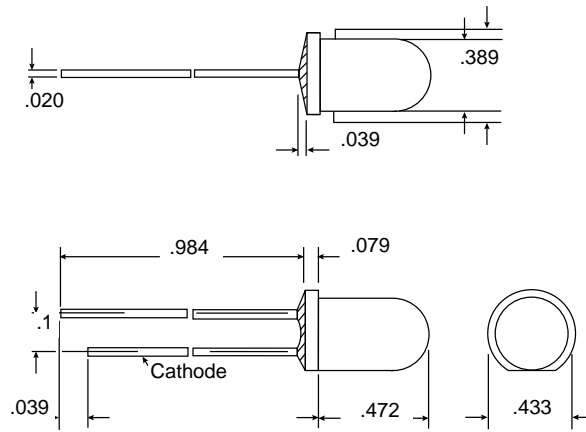
**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5110	GaAlAs	Red	Red Trans	1.5	2.4	100	660	600	1000	20°
351-5501	GaP	Green	Green Trans	1.7	2.8	100	565	180	300	20°
351-5301	GaAsP/GaP	Yellow	Yellow Trans	1.7	2.8	100	585	150	250	20°

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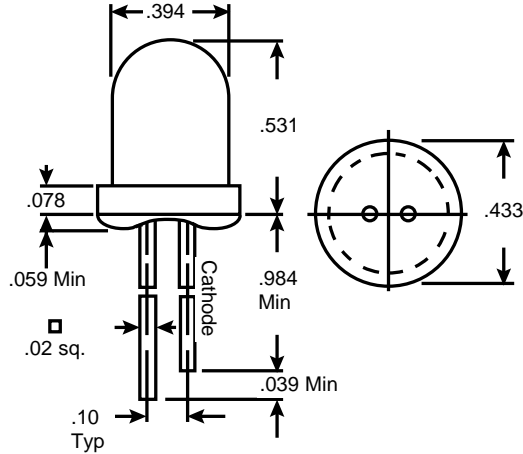
LED Lamp



Pin	Dice Material	Emitted Light color	Lens	Luminous Intensity $I_F=20\text{mA}$ (mcd)		Forward Voltage $I_F=20\text{mA}$ (V <sub>F</sub> )		Reverse Current $V_R=5\text{V}$ (I <sub>R</sub> )	Peak Emission Wavelength $I_F=20\text{mA}$ (λ <sub>P</sub> )	Half Intensity Angle $I_F=20\text{mA}$ (Δθ)
				Min.	Typ.	Max.	Typ.	Max.	Typ.	Typ.
351-21000CR	GaAlAs Red	Red	Water Clear	600	1000	2.5	1.8	100	660	10
351-21200CR	GaAlAs Red	Red	Water Clear	800	1200	2.5	1.8	100	660	10
351-2600CR	GaAlAs Red	Red	Water Clear	400	600	2.5	1.8	100	660	10
351-2350CR	GaAlAs Red	Red	Water Clear	200	350	2.5	1.8	100	660	10

Absolute Maximum Ratings @ Ta=25°C		
Parameter (Per Segment or DP.)	Max.	Unit
Power Dissipation	100	mW
Reverse Voltage	5	V
Peak Forward Current (Duty Cycle = 0.1, 10Khz)	200	mA
Average Fwd Current	40	mA
Operating Temperature Range	-20°C to +80°C	
Storage Temperature Range	-40°C to +100°C	
Lead Solder Temperature (0.063" from body)	260°C for 5 Sec	

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#### Absolute Maximum Ratings (Ta=25°C)

Parameter	
Power Dissipation (mW)	110
Average Forward Current (mA)	40
Peak Forward Current (mA)	200
Reverse Voltage (V)	5
Operating and Storage Temperature Range	-55°C to +100°C
Lead Solder Temperature .079" from body	260°C for 5 seconds

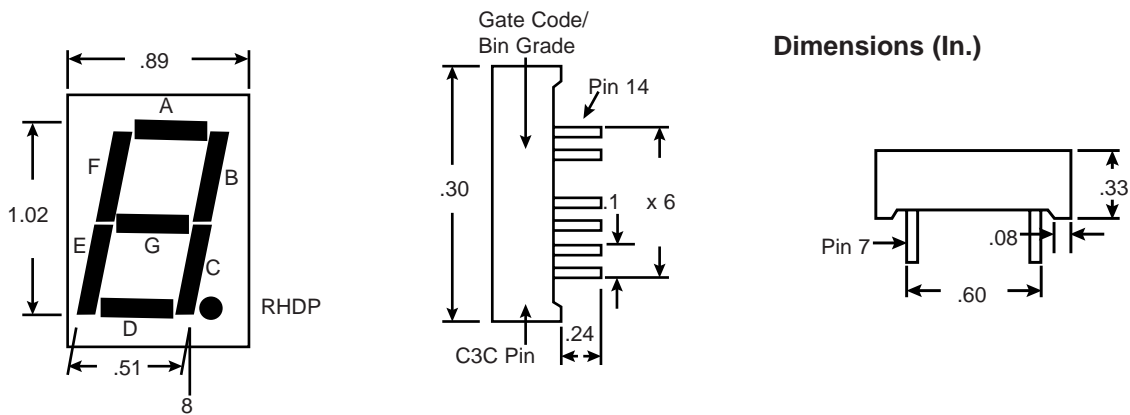
#### Specifications:

- Dice material: GaAlAs
- Emitted color: red
- Lens color: water clear

#### Electrical Specifications:

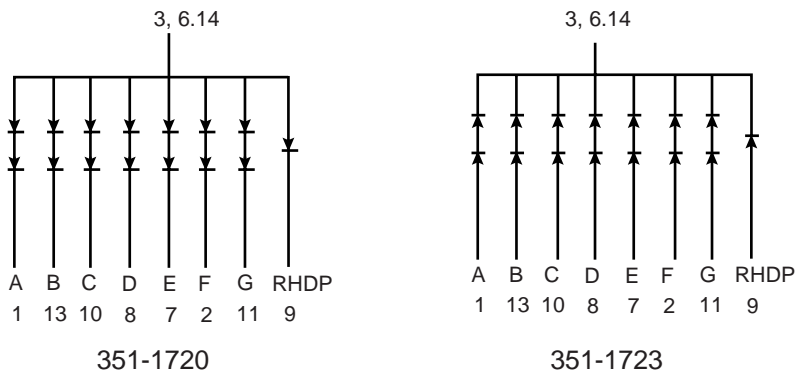
- Peak wavelength: 660 nm
- Luminous intensity: 600mcd (min.), 1000mcd (typ.)
- Forward voltage: 1.5V (typ.), 2.4V (max)
- Reverse current: 100µA max
- Viewing angle: 25°

### Mechanical Dimensions



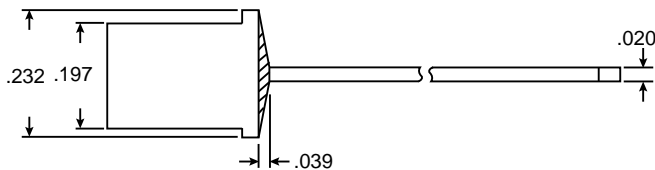
Dimensions (In.)

### Typical Internal Equivalent Circuit

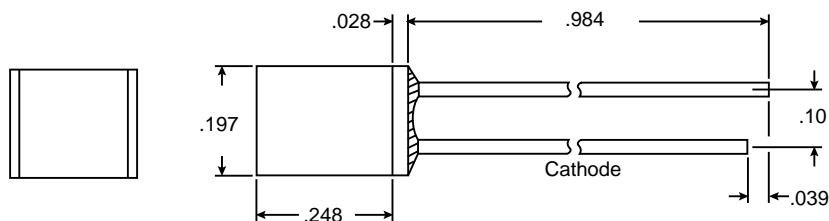


Red	Description
351-1720	Common Anode, RHDP
351-1723	Common Cathode, RHDP

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Dimensions (In.)



**Absolute Maximum Ratings (Ta=25°C)**

Symbol	Parameter	351-6801	351-6803	351-6804
P <sub>D</sub>	Power dissipation (mW)	120	100	100
I <sub>F</sub>	DC Forward Current (mA)	20	30	30
I <sub>PF</sub>	Peak forward current (mA)	55	120	80
V <sub>R</sub>	Reverse voltage (V)	5	5	5
T <sub>stg</sub>	Operating and Storage temperature range	-40°C to +100°C		

Lead soldering temperature 0.063" from body 260°C for 5 seconds

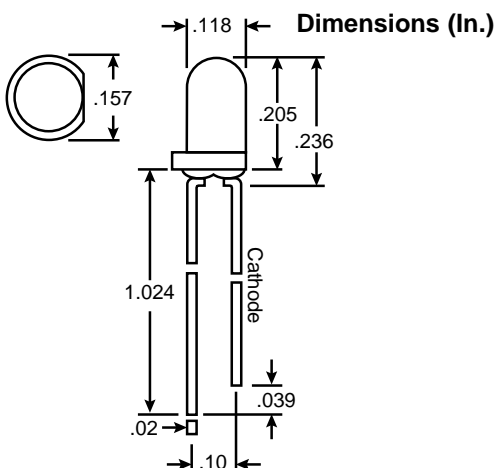
**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)	
				Typ	Max			Min	Typ
351-6801	GaP	Red	Red Diff	2.2	2.8	100	695	0.7	1.0
351-6803	GaP	Green	Green Diff	2.1	2.8	100	565	2.5	4.5
351-6804	GaAsP/GaP	Yellow	Yellow Diff	2.1	2.8	100	590	1.5	4.0

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**Absolute maximum ratings (Ta=25°C)**

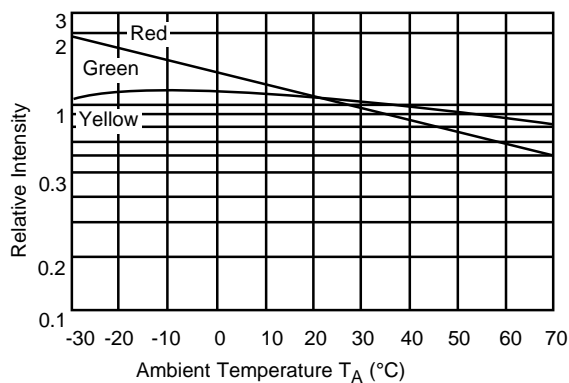
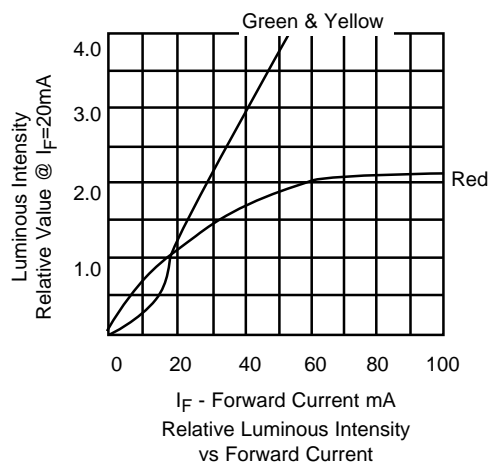
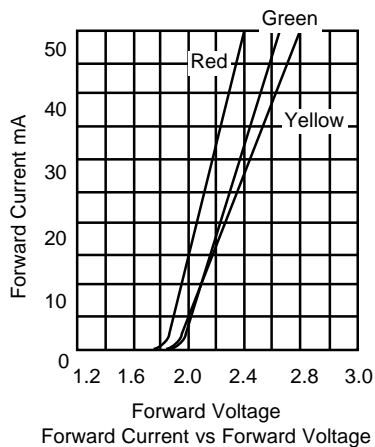
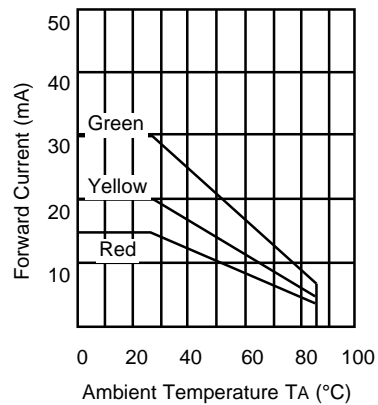
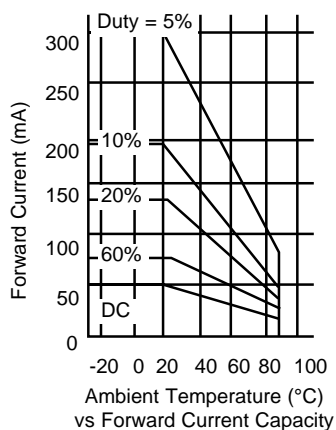
Parameter	351-3230	351-3240	351-3250
Power Dissipation (mW)	80	100	60
DC Forward Current (mA)	15	30	20
Peak Forward Current (mA)	200	120	80
Reverse Voltage (V)	5	5	5
Storage Temperature Range	-40°C to +100°C		
Operating Temperature	-40 to +85°C		
Lead Solder Temperature .079" below package (case) 260°C for 5 seconds			

**Electrical characteristics (Ta=25°C)**

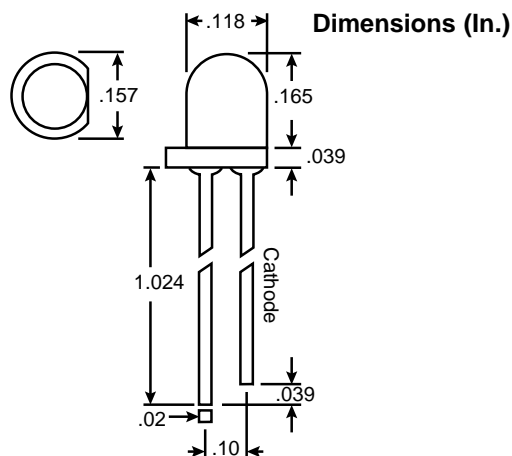
Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3230	GaAlAs	Red	Water Clear	1.5	2.4	100	660	160	300	20
351-3240	GaP	Green	Water Clear	1.7	2.8	100	565	38	60	20
351-3250	GaAsP/GaP	Yellow	Water Clear	1.7	2.8	100	585	28	54	20

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### Absolute maximum ratings (Ta=25°C)

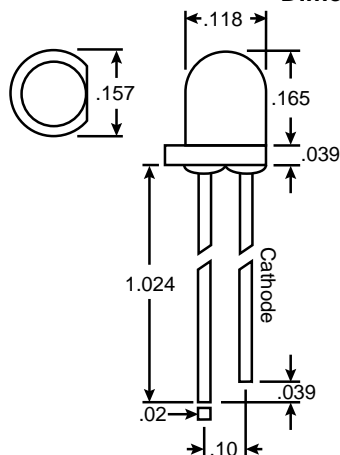
Parameter	351-3231	351-3241	351-3251
Power Dissipation (mW)	80	100	60
DC Forward Current (mA)	40	30	20
Peak Forward Current (mA)	200	120	80
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-40°C to +85°C		
Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .079" below package (case) 260°C for 5 seconds			

### Electrical characteristics (Ta=25°C)

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3231	GaAlAs	Red	Red Trans	1.5	2.4	100	660	180	300	20°
351-3241	GaP	Green	Green Trans	1.7	2.8	100	565	36	60	20°
351-3251	GaAsP/GaP	Yellow	Yellow Trans	1.7	2.8	100	585	36	60	20°

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Dimensions (In.)



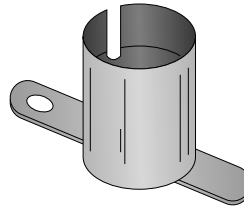
**Absolute maximum ratings (Ta=25°C)**

Parameter	351-3232	351-3242	351-3252
Power Dissipation (mW)	80	100	60
DC Forward Current (mA)	40	30	20
Peak Forward Current (mA)	200	120	80
Reverse Voltage (V)	5	5	5
Operating Temperature Range	-40°C to +85°C		
Storage Temperature Range	-40°C to +100°C		
Lead Solder Temperature .079" below package (case) 260°C for 5 seconds			

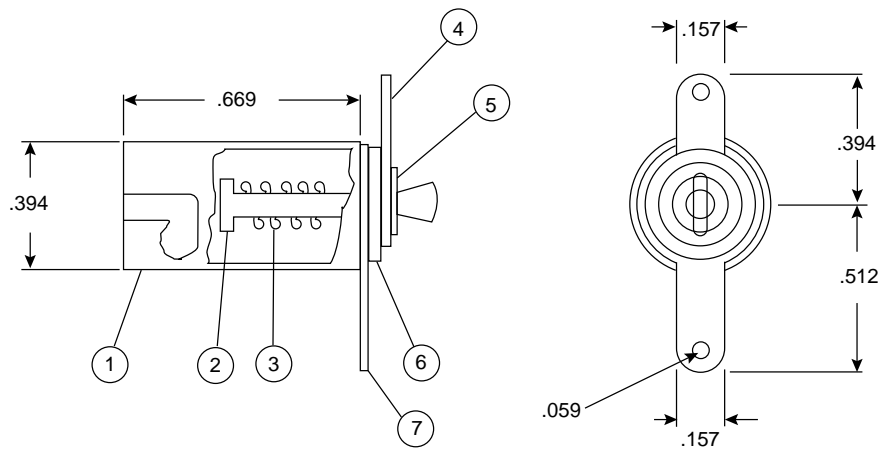
**Electrical characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-3232	GaAlAs	Red	Red Trans	1.5	2.4	100	660	100	180	68°
351-3242	GaP	Green	Green Trans	1.7	2.8	100	565	18	30	68°
351-3252	GaAsP/GaP	Yellow	Yellow Trans	1.7	2.8	100	585	150	280	68°

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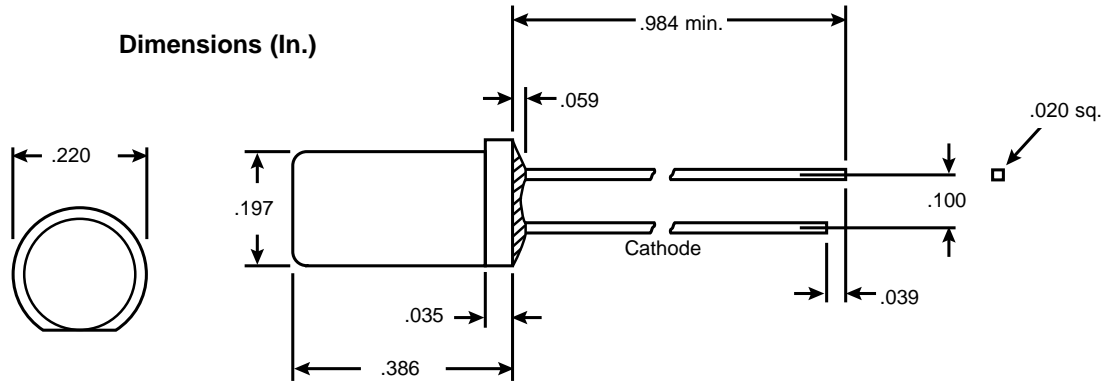
**Dimensions (In.)**



No.	Name	Finish
1	Socket base	Nickel plated brass
2	Contact rivet	Nickel plated brass
3	Spring	Nickel plated piano wire
4	Terminal (+)	Nickel plated brass
5	Eyelet	Brass
6	Washer	Phenol
7	Terminal (-)	Nickel plated brass

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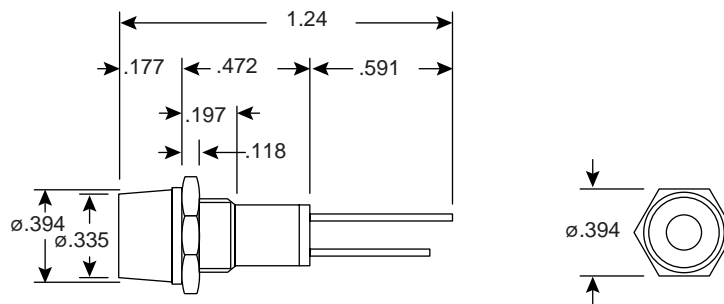
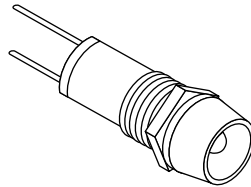
**Absolute Maximum Ratings @ Ta=25°C**

Parameter	351-5042	351-5043	351-5044
Power Dissipation (mW)	100	100	60
DC Forward Current (mA)	30	30	20
Peak Forward Current (mA)	120	120	80
Reverse Voltage (V)	5	5	5
Operating & Storage Temperature Range	-55°C to +100°C		
Lead Solder Temperature .079" below package (case)	260°C for 5 seconds		

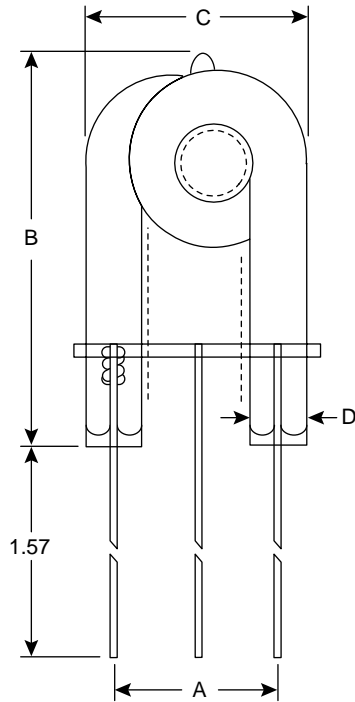
**Electrical Characteristics (Ta=25°C)**

Mouser Stock No.	Dice Material	Emitted Light Color	Lens	Forward Voltage (V)		Reverse Current (µA)	Peak Wavelength (nm)	Luminous Intensity (mcd)		Viewing Angle
				Typ	Max			Min	Typ	
351-5042	GaAsP/GaP	Red	Red Diff	1.7	2.8	100	635	1.8	3.0	40°
351-5043	GaP	Green	Green Diff	1.7	2.8	100	565	1.0	2.0	40°
351-5044	GaAsP/GaP	Yellow	Yellow Diff	1.7	2.8	100	585	1.8	3.0	40°

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**Dimensions (In.)****Specifications:**

- Type: standard T-1 3/4 (5mm) with gold bezel
- Color: red
- Lens: red diffused
- Body: brass over gold plated
- Base: ABS plastic
- Voltage: 2VDC
- Current: 15mA~20mA
- Endurance: over 20000 hrs.



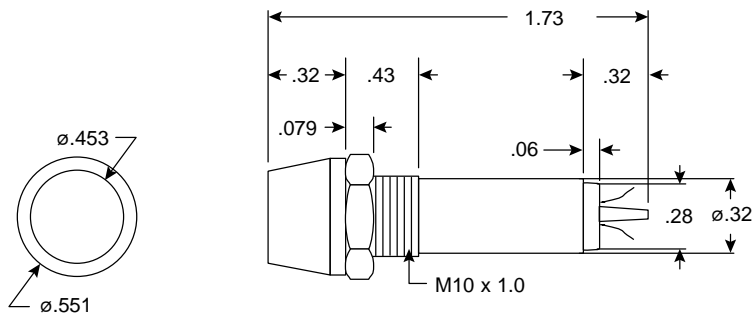
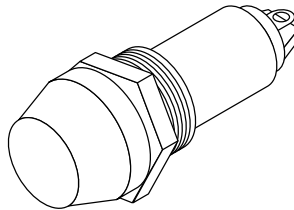
Dimensions (In.)

**Specifications:**

- Anode to cathode voltage: 350V min., 450V working, 500V max.
- Nominal life: 10,000 flashes
- Maximum flash rate: 4 flashes/ minute
- Minimum trigger voltage: 6KV
- Minimum trigger input: 0.8MWS
- Applications: photographic

Mouser Stock No.	Max. Energy Per Flash	Dimensions (In.)			
		A	B	C	D
361-0118	125 WS	.790	1.380	1.020	.240
361-0218	250 WS	.980	1.770	1.300	.310





Dimensions (In.)

**Specifications:**

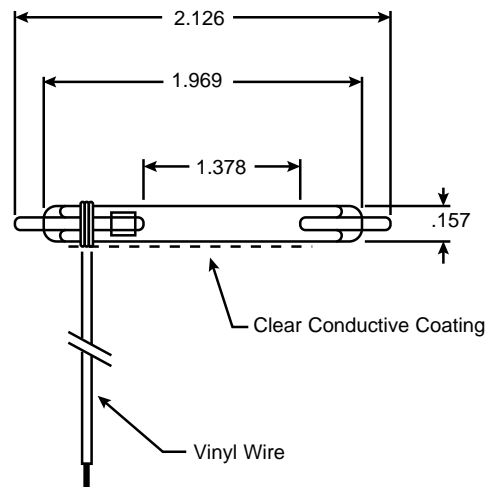
- Head: acrylonitrile
- Body: Insulation tubing
- Voltage: 110VAC + 33K $\Omega$  resistor
- Current: 1.2mA  $\pm$  0.2mA
- Endurance: over 20,000 hrs.
- Dielectric strength: over 1,000V for 1 minute
- Lens color: 361-7671: Red  
361-7672: Amber  
361-7673: Green

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<http://www.mouser.com>

### Dimensions (In.)

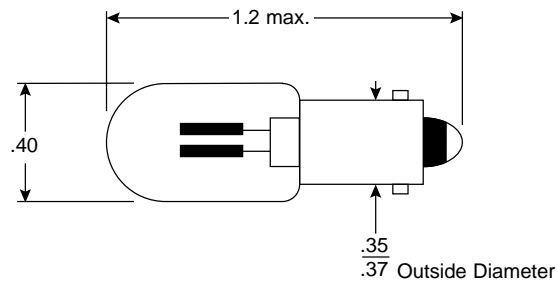


### Specifications:

- Tube material: hard glass
- Wall thickness: .9mm
- Type of gas: xenon
- Internal gas pressure: 150mm Hg
- Anode to cathode voltage (V): 220 min. 360 nom. 400 max.
- Max. energy per flash: 60 ws
- Flashes with max. energy input: max. flash rate 6/minute  
Nominal life: 5000 flashes
- Trigger: 4KV min. voltage .6mws min. input
- Applications: photographic

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### Dimensions (In.)



### Specifications:

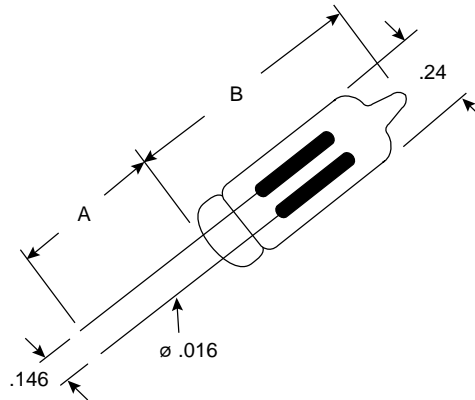
- Voltage: 110VAC
- Lamp current: .3mA
- Life time: 20,000 hours
- Bulb diameter: 10mm
- Base: brass BA96
- Lamp watts: 1/25W
- Max. striking volts: 45AC / 85DC

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### Dimensions (In.)



### Electrical Specifications:

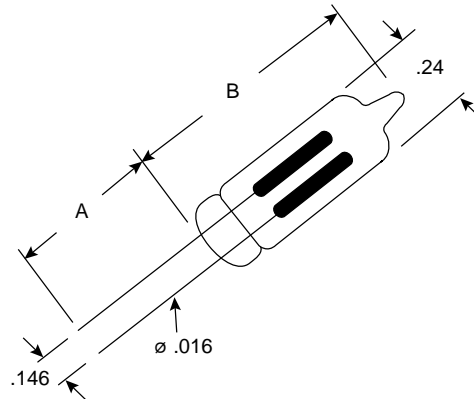
- Circuit voltage: 120VAC
- Max breakdown voltage: 95VAC / 135VDC
- Average life: 25,000 hrs

Mouser Stock No.	Type	Nominal Current (mA)	Dimensions (In.)		Series Resistor
			A	B	
36NE004	A1C	1.20	1.18	.47	30KΩ @ 110V/100KΩ @ 220V
36NE005	NE-2H	1.20	1.18	.63	33KΩ @ 110V/100KΩ @ 220V

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### Dimensions (In.)



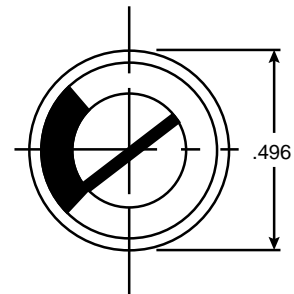
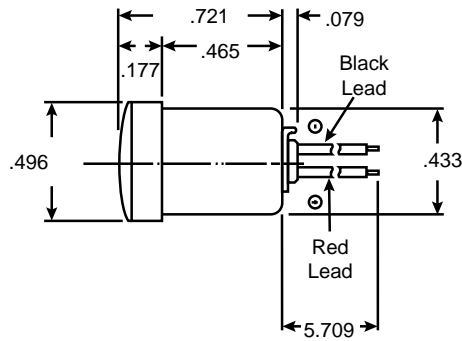
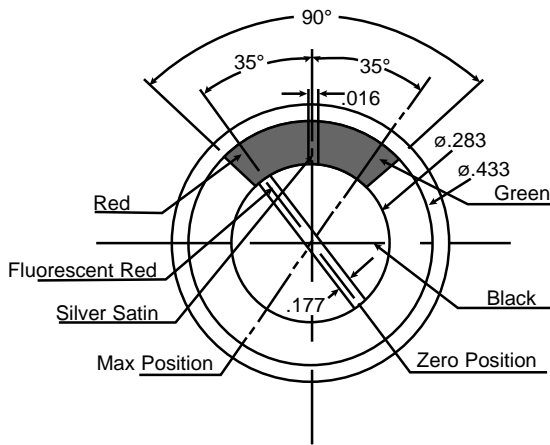
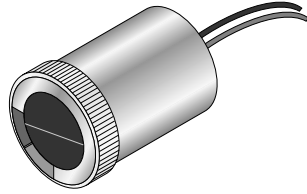
### Electrical Specifications:

- Circuit volts: 120VAC
- Max breakdown voltage: 65VAC / 90VDC
- Average useful life: 25,000 hrs

Mouser Stock No.	Type	Nominal Current (mA)	Dimensions (In.)		Series Resistor
			A	B	
36NE002	NE-2	.50	1.00	.68	100K $\Omega$
36NE003	NE-2B	.50	1.00	.50	100K $\Omega$
36NE006	A1B	.30	1.18	.47	150K $\Omega$ @ 110V/360K $\Omega$ @ 220V
36NE007	NE-2E	.30	1.18	.63	150K $\Omega$ @ 110V/360K $\Omega$ @ 220V

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**Specifications:**

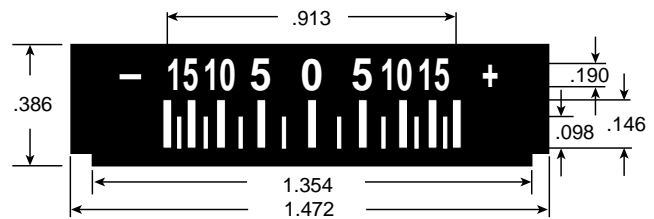
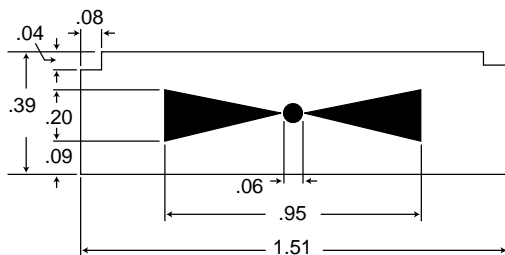
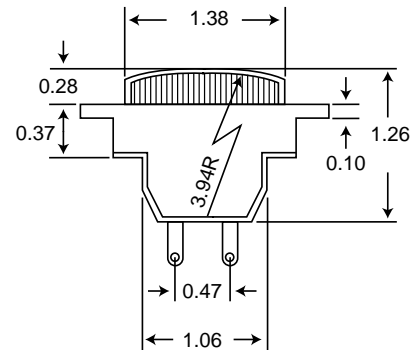
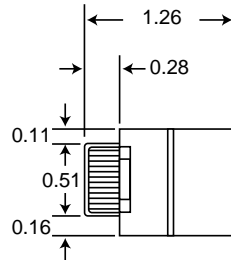
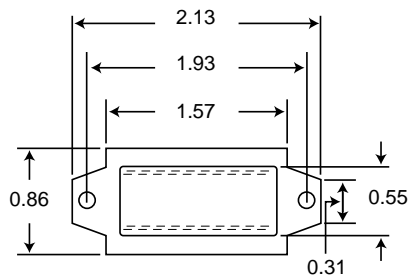
- Response time:  $\leq 2$  seconds
- $\pm 10\%$  accuracy
- Scale: red-green
- Internal resistance:  $345\Omega \pm 20\%$
- Moving coil type meter
- Sensitivity:  $630\mu A \pm 15\%$
- The black lead is connected to the metal case
- 22AWG leads

**Material**

- Cover: delpet 80N - polymethyl methacrylate resin (PMMA)
- Body: steel with chromate plating

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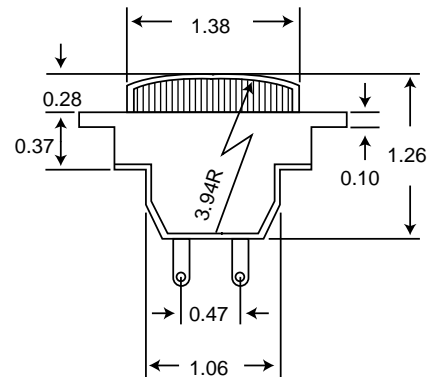
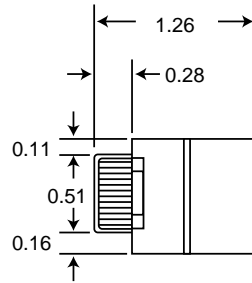
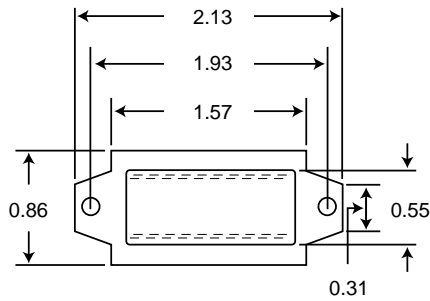
### Dimensions (In.)



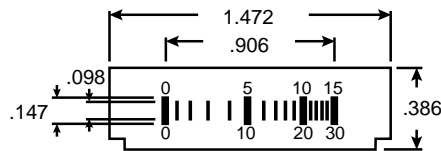
### Specifications:

- Sensitivity: -250  $\mu$ A to +250  $\mu$ A ( $\pm 15\%$ )
- Internal resistance: 650  $\Omega \pm 15\%$
- Insulation resistance: 50M $\Omega$  (100VDC @ 68°F, 70% relative humidity)
- Damping: Pointer reaches final position within one second

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Dimensions (In.)

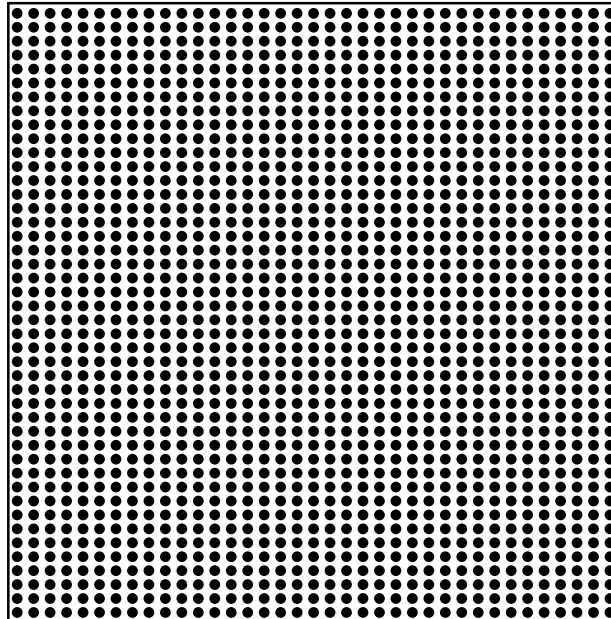


**Specifications:**

- Sensitivity: 500 $\mu$ A ( $\pm$ 15%)
- Internal resistance: 650  $\Omega$   $\pm$ 15%
- Insulation resistance: 50M $\Omega$  (100VDC @ 68°F, 70% relative humidity)
- Damping: Pointer reaches final position within one second

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**Material Specifications:**

- Base material: paper
- Resin: phenolic (153-1108), modified phenolic (153-1122)

**Specifications:**

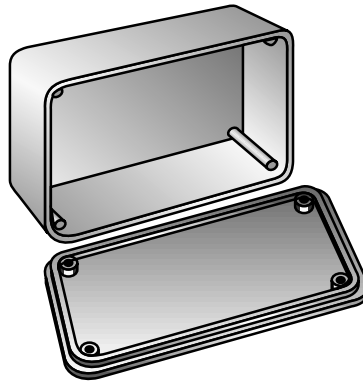
- Color: light brown
- Pre-punched
- .042" hole diameters
- UL file no: E47-629/CCIL (153-1122)

Mouser Stock No.	Width	Length	Thickness	Grid Spacing
153-1108	5.91	7.874	.06	.098
153-1122	5.91	19.685	.06	.200

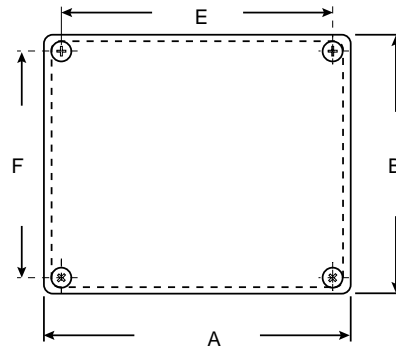
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Dimensions (In.)



**Material Specifications:**

- Aluminum alloy: LM 24
- 400-4587 & 400-4591 screw: 4 each size M3.5 x 0.6 stainless steel cross recessed countersunk head 'W' point taptite with de-coppered finish
- 400-4590 & 400-4592 screws: 4 each size M3.5 zinc plated steel, countersunk head, corfls N taptite

**Specifications:**

- Natural finish
- Lid: secured by 4 countersunk screws
- Internal lip: provides effective EMC screening

Mouser Stock No.	A	B	C	D	E	F	General Thickness
400-4587	4.50	2.50	2.16	2.20	4.06	2.71	.063
400-4590	3.50	1.37	1.02	1.22	3.12	1.00	.063
400-4591	4.50	2.50	1.02	1.22	4.12	2.14	.063
400-4592	4.50	3.50	2.14	2.10	4.12	3.12	.063

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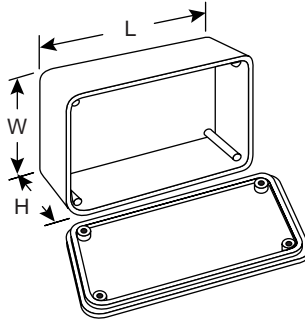
<http://www.mouser.com>

400-4620  
400-4621  
400-4622

400-4623  
400-4624  
400-4625

400-4626  
400-4627

Diecast Cases



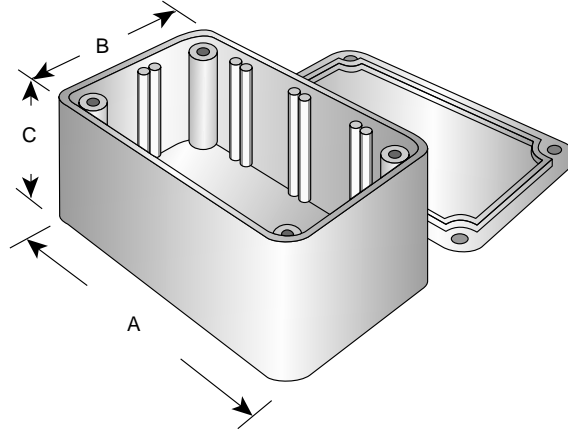
**Dimensions (In.)**

**Specifications:**

- Nylon coating: 75-100 microns thick
- Material: aluminum
- PCB guides: none
- Color: black

Mouser Stock No.	Dimensions (In.)			Wall Thickness
	L	W	H	
400-4620	3.5	1.4	1.2	.063
400-4621	4.5	2.5	1.2	.063
400-4622	4.5	3.5	2.2	.063
400-4623	4.5	2.5	2.2	.063
400-4624	6.8	4.7	2.2	.075
400-4625	6.8	4.7	4.2	.075
400-4626	8.8	5.7	2.2	.075
400-4627	8.8	5.7	4.2	.075

Dimensions (In.)



**Specifications:**

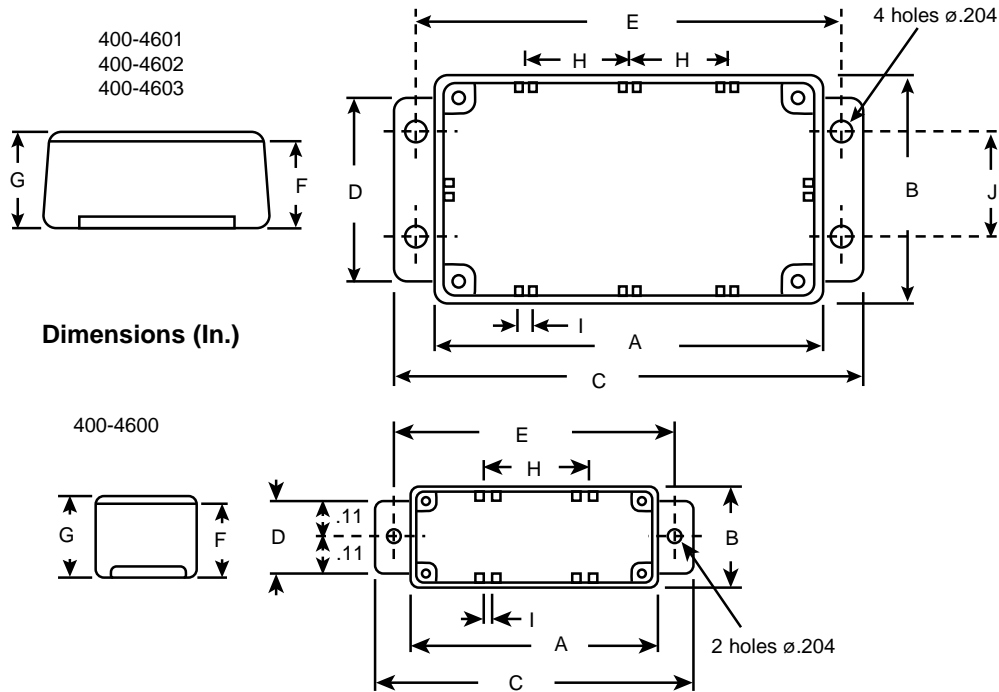
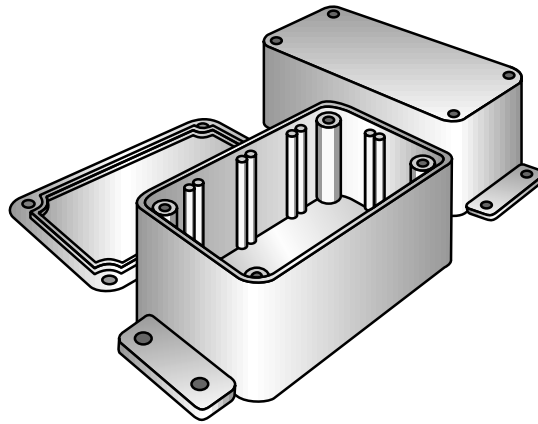
- Natural finish, diecast aluminum enclosures for numerous uses E.G., instruments, electronic circuitry, junction boxes, etc.
- The close fitting lid is secured by 4, 6, or 8 (depending on box size) countersunk screws. An internal lip provides effective EMC screening
- Internal guide slots allow the interior to be subdivided by screens, dividers, PCBs, or component mounting boards
- Material: aluminum alloy LM 24 to British standard BS 1490  
 temperatures up to 250°C can be used, as LM24 retains a high proportion of it's room temperature strength properties at these temperatures
- Screws: M3.5 zinc plated steel, supadrive countersunk head, corflex N tapite

Mouser Stock No.	Dimensions (In.)			Wall Thickness
	A	B	C	
400-4585	2.4	2.2	1.2	.063
400-4586	3.1	2.2	1.0	.063
400-4595	4.7	4.0	1.4	.083
400-4596	5.5	4.0	3.0	.075
400-4597	6.5	5.0	3.0	.075
400-4598	10.8	6.9	2.2	.075
400-4599	9.8	9.8	3.9	.098

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**Material Specifications:**

- Aluminum alloy: LM 24
- Temperature: up to 250°C
- Screws: M 3.5 zinc plated steel, countersunk head, corflex N tapite

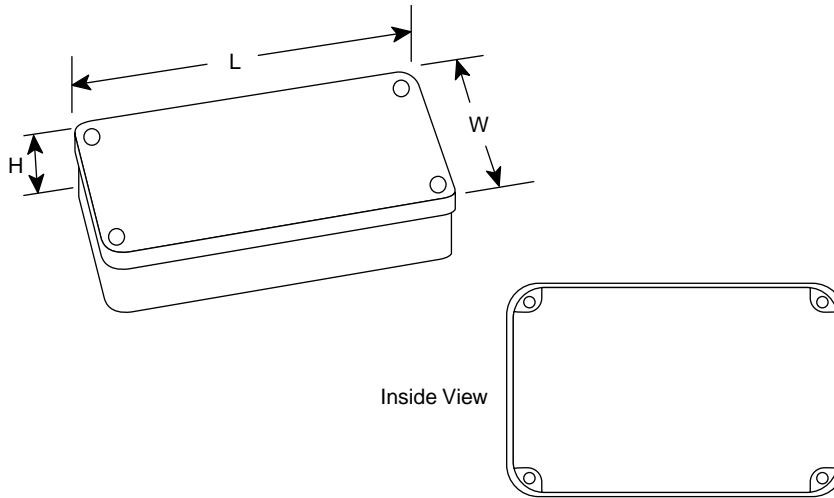
**Specifications:**

- Natural finish
- Lid: secured by four countersunk screws
- Internal lip: provides effective screening

Mouser Stock No.	A	B	C	D	E	F	G	H	I	J	Wall Thickness
400-4600	3.50	1.41	4.48	.984	4.00	1.00	1.16	1.41	.100	-	.063
400-4601	4.49	2.50	5.50	1.77	4.99	1.00	1.16	1.18	.100	1.181	.063
400-4602	4.49	2.50	5.50	1.77	4.99	2.00	2.16	1.18	.100	1.181	.063
400-4603	4.49	3.50	5.50	2.71	4.99	2.00	2.16	1.00	.100	1.969	.063

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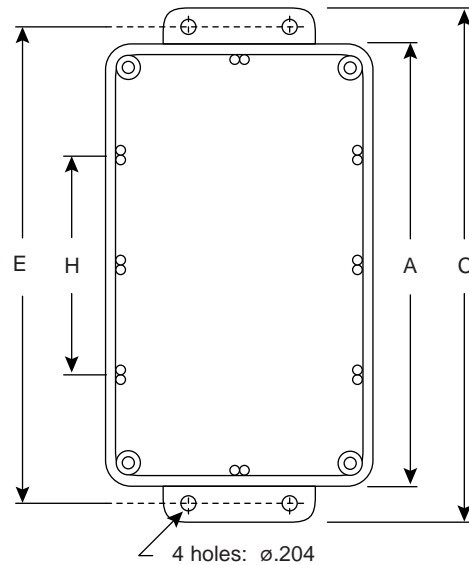
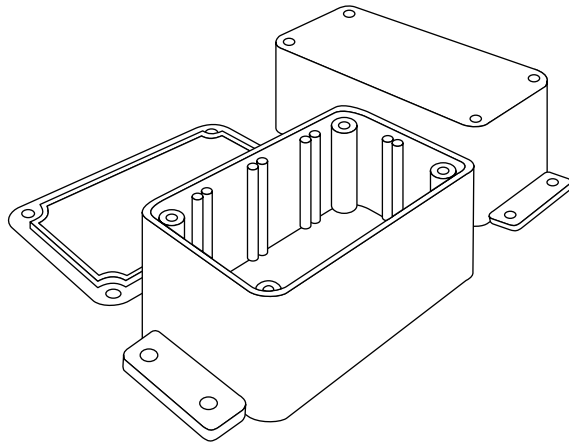
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**Specifications:**

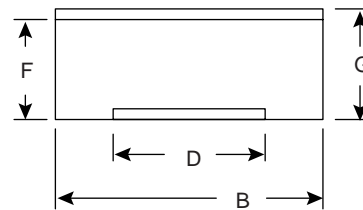
- Type: sealed diecast, RF shielded
- Diecast: LM24 aluminum alloy
- Includes: interlocking flanged cover & 3.5mm screw
- Dust / moisture proof
- Rubber extruded seal incorporated into edge of case provides extra protection against dust & moisture & resists ozone, acids, & alkalis
- Plain finish without PCB guides
- Suitable for service conditions from -40°C ~ 120°C

Mouser Stock No.	Dimensions (In.)		
	L	W	H
400-4550	3.50	1.37	1.20
400-4551	4.50	2.50	1.20
400-4552	4.50	2.50	2.20
400-4553	4.50	3.50	2.20
400-4554	6.75	4.75	2.20
400-4555	6.75	4.75	4.20
400-4556	8.75	5.75	2.20
400-4557	8.75	5.75	4.20



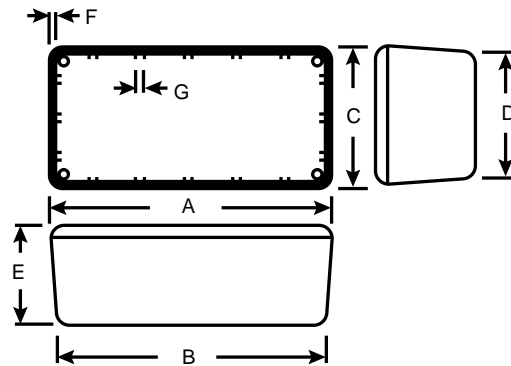
**Specifications:**

- Type: sealed; has mounting flanges & PCB guides
- Temperature:  $\leq 250^{\circ}\text{C}$
- Hardware: 6 countersunk screws; M3.5 zinc plated steel, corflex N taptite
- Aluminium alloy: LM 24
- Finish: natural ( unpainted)
- Other: internal lip provides effective screening
- General thickness: 0.075



**Dimensions (In.)**

Mouser Stock No.	A	B	C	D	E	F	G	H
400-4604	6.76	4.75	7.95	3.93	7.44	2.00	2.20	6.76
400-4605	6.50	4.99	7.67	3.93	7.16	2.83	3.07	6.50
400-4606	8.33	5.76	9.92	4.64	9.40	2.00	2.16	8.33
400-4607	6.76	4.75	7.95	3.93	7.44	4.00	4.16	6.76



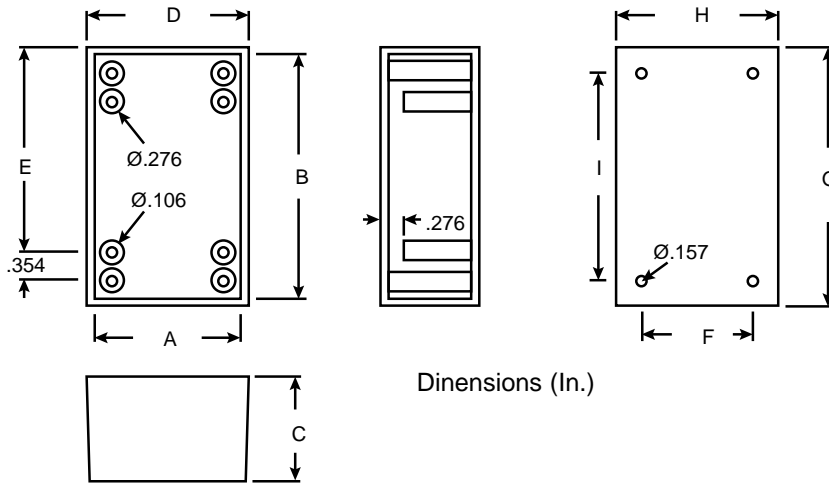
**Material Specifications:**

- Molded ABS plastic
- PCB guides (400-1561 & 400-1571 only)
- Interlocking flanged cover  
(with 4 countersunk screws included)
- Temperature range: -30°C (-22°F) to 84°C (184°F)

Mouser Stock No.	A	B	C	D	E	F	G	Weight (g)
400-1541	3.000	2.913	2.000	1.909	1.055	0.063	None	26
400-1551	4.394	4.331	2.272	2.209	0.866	0.059	None	43
400-1561	3.969	3.909	3.012	2.957	1.606	0.063	None	61
400-1571	5.906	5.780	3.937	3.819	2.331	0.067	None	115

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Dimensions (In.)

**Material Specifications:**

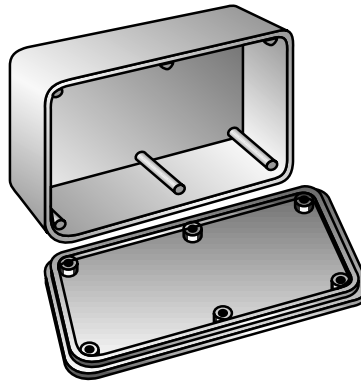
- Material: ABS plastic
- Flammability: UL-94HB

**Electrical Specifications:**

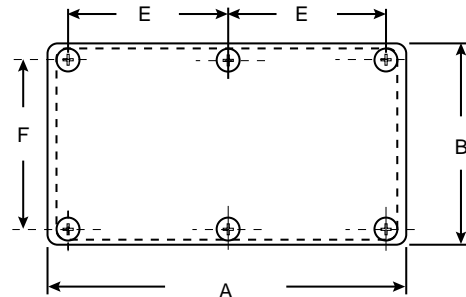
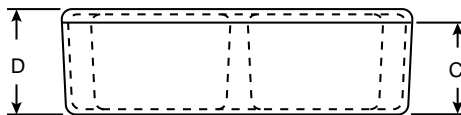
- Heat distortion temperature: 89°C

Mouser Stock No.	Dimensions (In.)								
	A	B	C	D	E	F	G	H	I
400-7022	1.378	1.968	.984	.866	.827	1.299	1.890	.866	1.457
400-7032	1.732	2.717	1.181	1.102	1.378	1.575	2.559	1.102	2.087
400-7043	2.126	3.307	1.378	1.496	1.969	1.968	3.150	1.496	2.677
400-7053	2.756	4.213	1.575	2.087	2.835	2.559	4.016	2.087	3.543
400-7064	3.346	5.315	1.575	2.678	3.937	3.150	5.118	2.677	4.646

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Dimensions (In.)



**Material Specifications:**

- Aluminum alloy: LM 24
- 400-4588 & 400-4589 screws: 6 each size M3.5x0.6 stainless steel cross recessed countersunk head 'W' point taptite with de-coppered finish
- 400-4593 & 400-4594 screws: 6 each size M3.5 Zinc plated steel, countersunk head, corflex N taptite

**Specifications:**

- Natural finish
- Lid: secured by six countersunk screws
- Internal lip: provides effective EMC screening
- Diecast aluminum

Mouser Stock No.	A	B	C	D	E	F	General Thickness
400-4588	8.75	5.75	2.16	2.17	4.15	5.31	.074
400-4589	8.75	5.74	4.16	4.20	4.15	5.31	.074
400-4593	6.75	4.74	2.14	2.16	3.15	4.31	.074
400-4594	6.75	4.74	4.00	4.20	3.15	4.31	.074

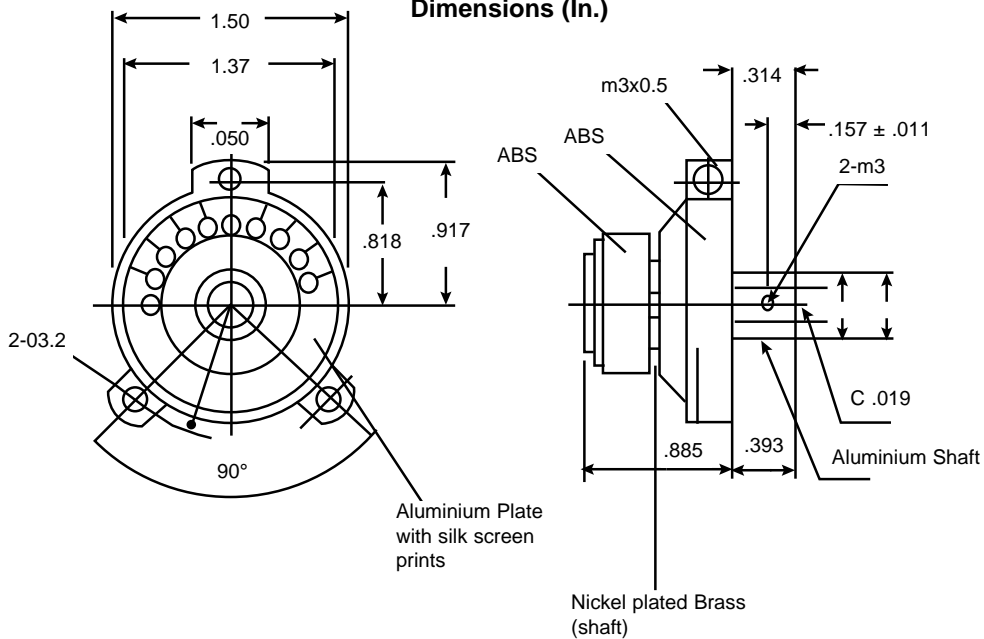
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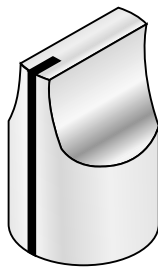
**Dimensions (In.)**



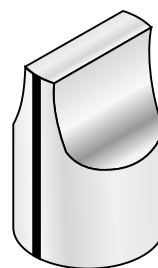
**Specifications:**

- Knob fit: .25 inch shafts
- Graduated 0-100 (10)
- 180° Rotation
- Ratio: 6.3 to1-0: 1

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450-3000



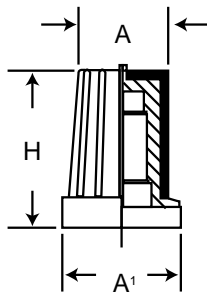
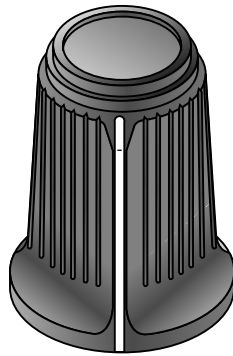
450-3001

**Features:**

- Material: 99% pure aluminum
- Color: Natural
- Finish: Sandblast
- Set screw: Carbon steel (hex head)

MOUSER STOCK NO.	Description	Dia. (In.)	Height (In.)	Shaft Dia. (In.)
450-3000	Aluminum control knob	1.00	1.00	.25
450-3001	Aluminum control knob	.87	.98	.25

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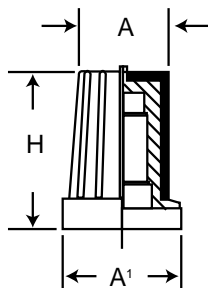
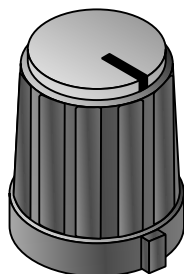


**Dimensions (In.)**

Material: ABS Plastic  
Shaft Hole Size: .238" (6.05mm)  
Fits: 6mm 18T spline shaft

MOUSER STOCK NO.	Color	Dimensions (In.)		
		A'	A	H
450-3012	Black with yellow cap and white indicator	.68	.45	.87
450-3013	Black with blue can and white indicator	.68	.45	.87
450-3014	Black with green cap and white indicator	.68	.45	.87
450-3015	Black with red cap and white indicator	.68	.45	.87

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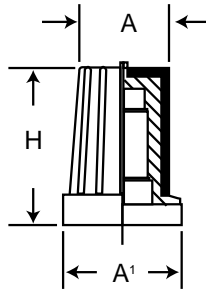
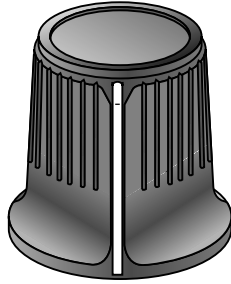


Dimensions (In.)

Material: ABS Plastic  
Shaft Hole Size: .238" 6.05mm  
Fits: 18T spline shaft

MOUSER STOCK NO.	Color	Dimensions (In.)		
		A'	A	H
450-3021	Black with red cap	.52	.47	.65
450-3022	Black with yellow cap	.52	.47	.65
450-3023	Black with blue cap	.52	.47	.65
450-3024	Black with green cap	.52	.47	.65

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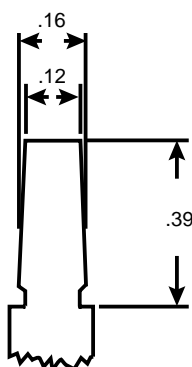
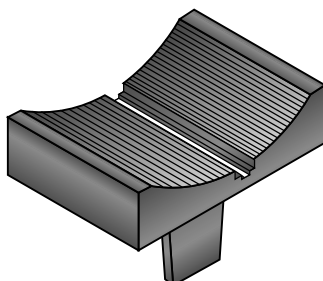


Dimensions (In.)

Material: ABS plastic  
Shaft Hole Size: .238" (6.05mm)  
Fits: 6mm 18T spline shaft

MOUSER STOCK NO.	Color	Dimensions (In.)		
		A'	A	H
450-3031	Black with red cap and white indicator line	.63	.47	.59
450-3032	Black with yellow cap and white indicator line	.63	.47	.59
450-3033	Black with blue cap and white indicator line	.63	.47	.59
450-3034	Black with green cap and white indicator line	.63	.47	.59

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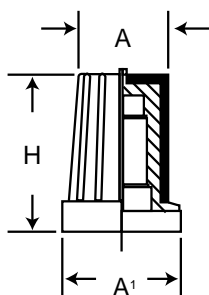
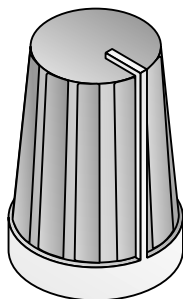
(Fits Shaft Type)  
**Dimensions (In.)**

Material: ABS Plastic  
Indicator: White Line

MOUSER STOCK NO.	Color	Description	Width (In.)	Height (In.)	Length (In.)
450-3050	Orange	Slide knob	.68	.63	.79
450-3051	Black	Slide knob	.68	.63	.79
450-3052	Gray	Slide knob	.68	.63	.79

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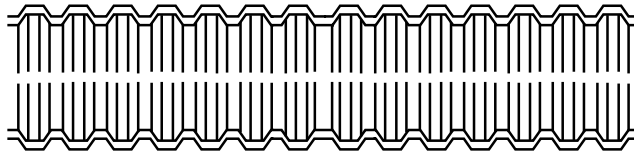
Dimensions (In.)

**Specifications:**

- Material: Polypropylene
- Shaft hole size: .238" 6.05mm
- Fits: 6mm 18T spline shaft

MOUSER STOCK NO.	Color	Shaft Dia. (In.)	Dimensions (In.)		
			A'	A	H
450-4010	Gray w/white lines	.25	.51	.41	.71
450-4011	Black w/white lines	.25	.51	.41	.71

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**Specifications:**

- Temperature rating: 100°C max.
- Flammability rating: not UL approved, but meets the flammability rating of UL94V-2

481-1007:	.29 ID size
481-1011:	.42 ID size
481-1013:	.52 ID size
481-1015:	.59 ID size

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Standard

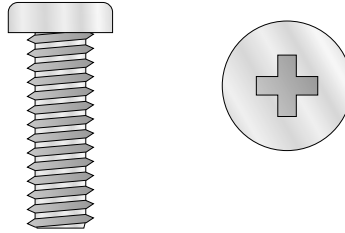
P/N's ending in "UV" are black weather resistant

**Specifications:**

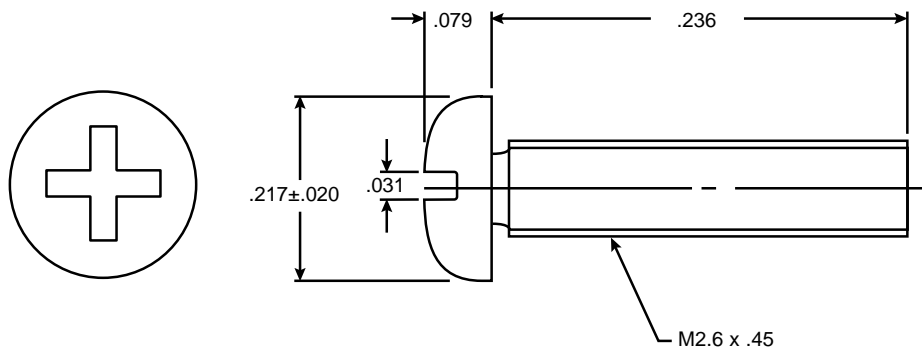
- Material: UL approved nylon 6/6
- Temperature range: -10°C to +85°C
- Weather resistance: UV resistance

Mouser Stock No.	Tensile Strength (Lbs)	Length (In.)	Max. Bundle Dia. (In.)	W mm	mm	Lbs	Kgs
481-0102UV	18	4.0	.98	2.5	25	18	8
481-0108UV	40	6.0	1.54	3.6	39	40	18
481-0115UV	50	8.0	2.17	4.6	65	50	22

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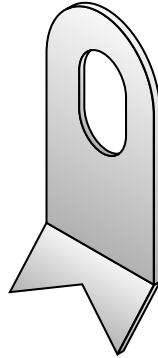
### Dimensions (In.)



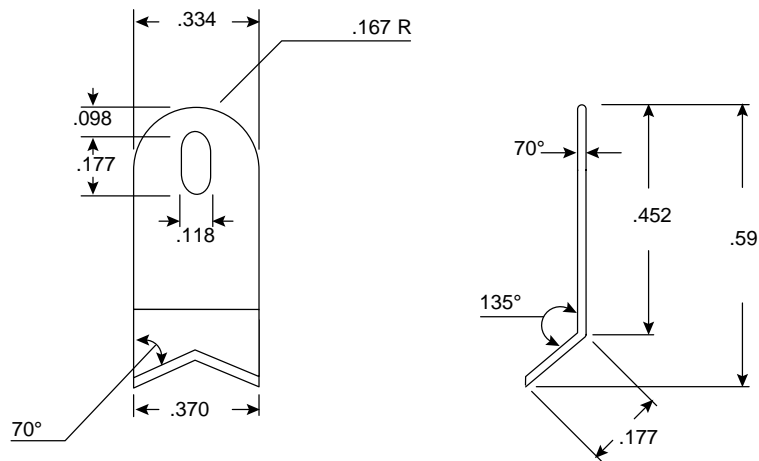
### Specifications:

- Material: zinc plated steel

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### Dimensions (In.)

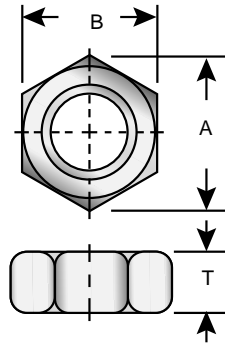


#### Specifications:

- Spring grade steel w/zinc plating
- 1/8" slotted hole for metric 3mm or #4 screw
- For use with round or oval speakers
- Thickness = 0.035"

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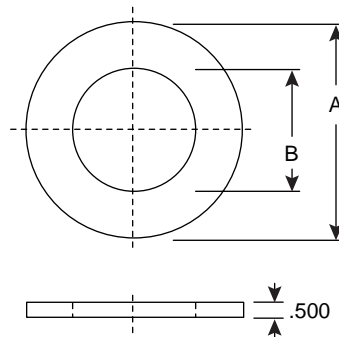


**Specifications:**

- Metric hex nut M8 x P 0.75, T=2.0mm
- Side to side 11mm, angle 12mm
- Steel with zinc plating
- Double Chamfer

Mouser Stock No.	Thread Size (mm)	Dimensions (mm)		
		A	B	T
48AN008	M8 x 0.75	12	11	2

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**Dimensions (mm.)**

**Specifications:**

- Type: flat
- Material: zinc plated steel

Mouser Stock No.	Thread Size (mm.)	Dimensions (mm.)	
		A	B
48CW007	M 7	12	7
48CW008	M 8	14	8
48CW009	M 9	14	9

**Specifications:**

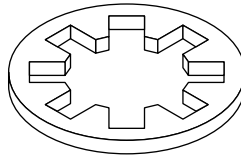
- Natural nylon: U.L. approved nylon 6/6
- Temperature range: -40°C to +85°C
- Flammability rating: UL 94V-2
- Length: 150mm (6 inches)
- Width: 3.6mm (.142 inches)
- Max. bundle dia.: 39mm (1.535 inch)
- Min. tensile strength: 40lbs. (18 kgs) intermediate

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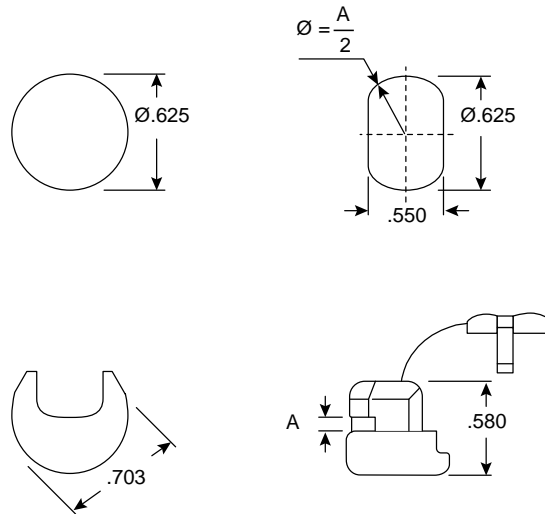




**Specifications:**

- Style: internal tooth
- Material: zinc plated steel

Mouser Stock No.	Size (mm)
481-0685	5
481-0686	6
481-0687	7
481-0688	8
481-0680	10
481-0682	12



Dimensions (In.)



**Specifications:**

- Cross section: round
- Strap size: "Y"

**MP6P34:**

- Maximum panel thickness (Fig. A): 0.125
- Cable sizes: 0.325 - 0.360
- Cable type & gauge (AWG): SJ (18/3)  
SJT (16/3, 18/3)  
SJO (18/3)

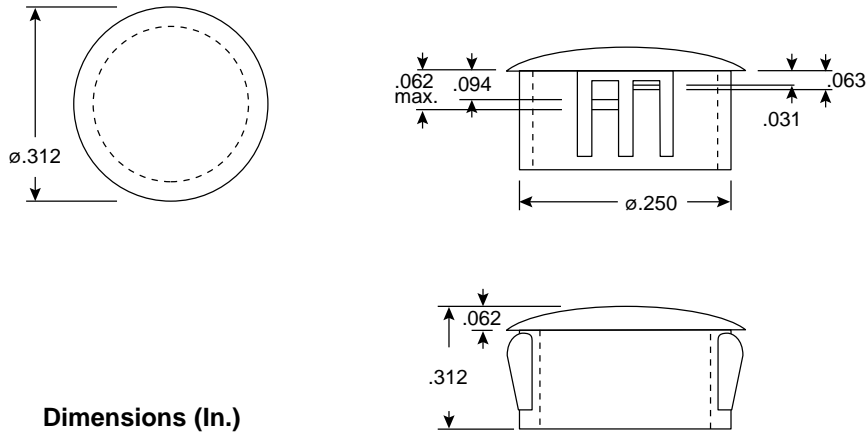
**MP6N34:**

- Maximum panel thickness (Fig. A): 0.162
- Cable sizes: 0.355, 0.405, 0.430
- Cable type & gauge (AWG): SJ (16/3)  
SJT (18/3)  
SJT (16/3)

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Dimensions (In.)

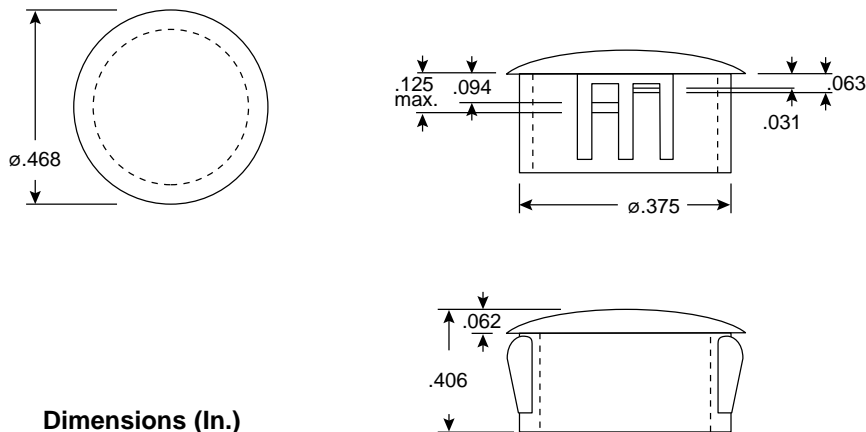
**Specifications:**

- Heat stabilized nylon 6/6 (UL 94V2)

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Dimensions (In.)

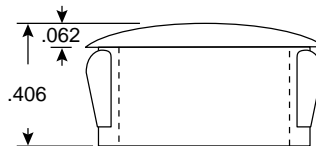
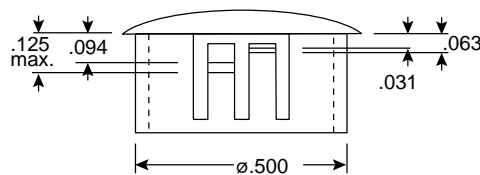
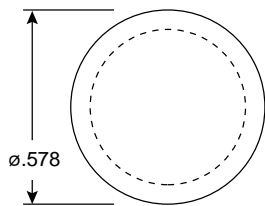
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Dimensions (In.)

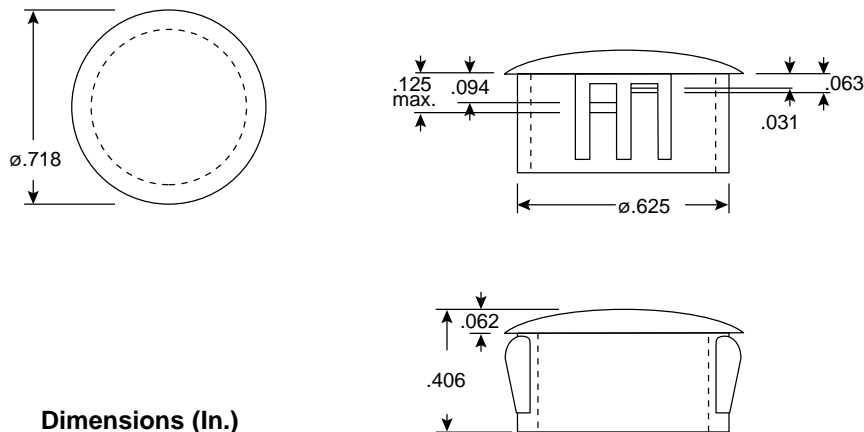
**Specifications:**

- Heat stabilized nylon 6/6 (UL 94V2)

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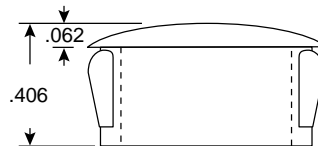
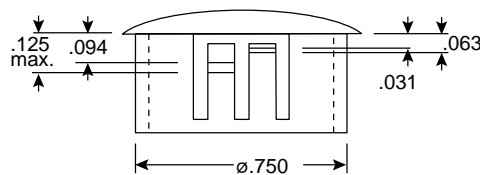
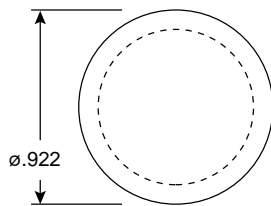
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Dimensions (In.)

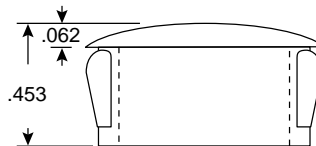
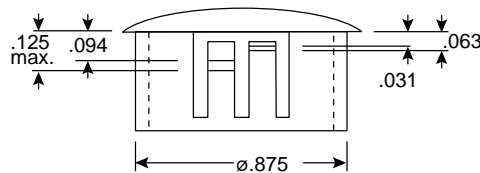
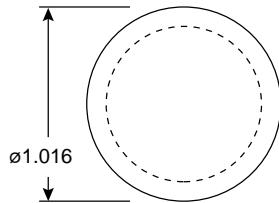
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Dimensions (In.)

**Specifications:**

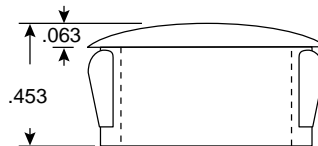
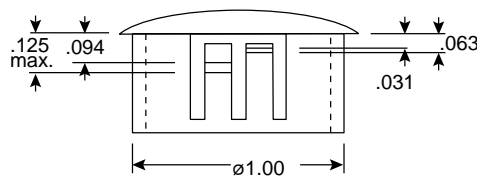
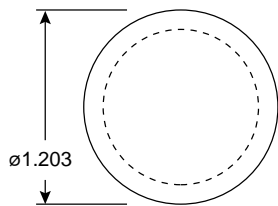
- Heat stabilized nylon 6/6 (UL 94V2)

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Dimensions (In.)

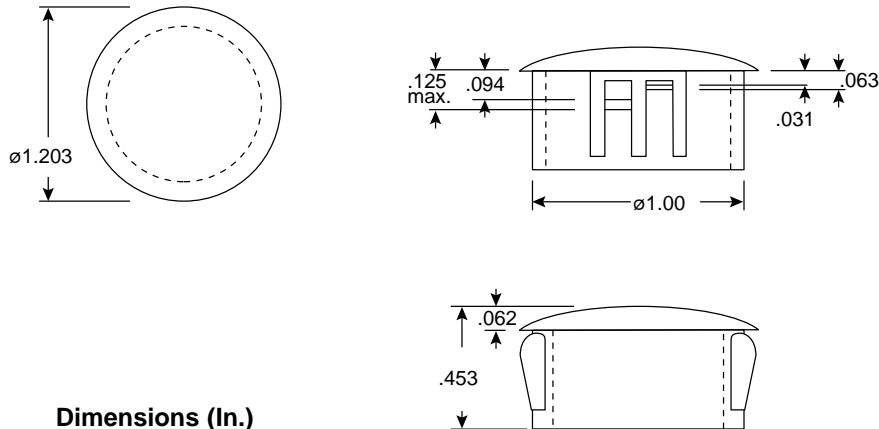
**Specifications:**

- Heat stabilized nylon 6/6 (UL 94V2)

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Dimensions (In.)

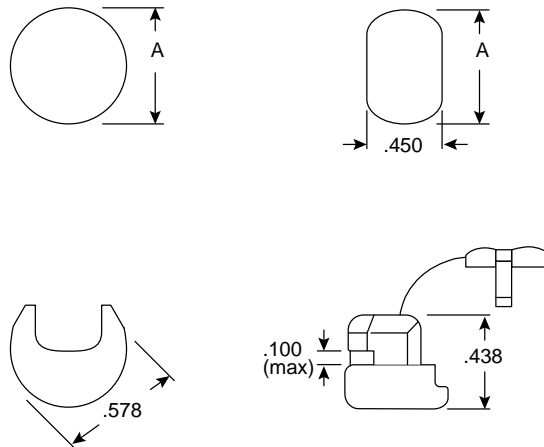
**Specifications:**

- Heat stabilized nylon 6/6 (UL 94V2)

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Dimensions (In.)



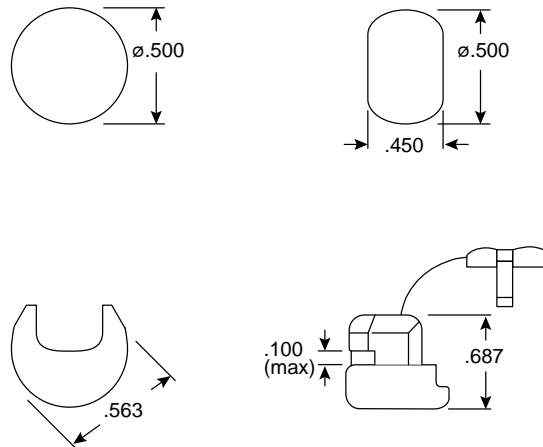
**Specifications:**

- Cross section: round
- Diameter (Fig. A):  
.500, .500x.515, .500x.515
- Cable size: 0.250, 0.255, 0.290
- Cable type & gauge (AWG):  
SV (18.2), SVT (18.2)  
SV (18.3), SVT (18.3)  
HPD (16.2)

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### Dimensions (In.)



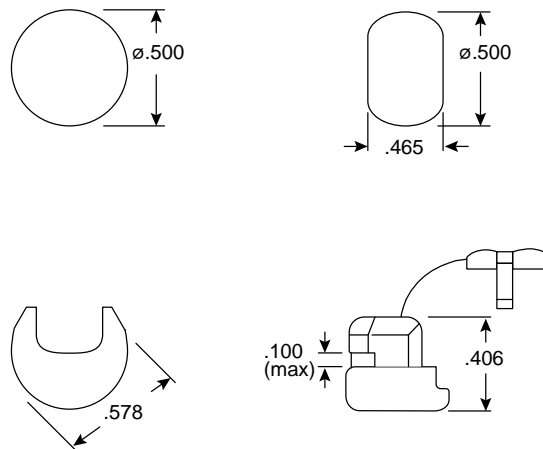
### Specifications:

- Cross section: flat
- Cable size: 0.150 x 0.280,  
0.160 x 0.300
- Cable type & gauge (AWG):  
SPT-2 (18/2, 16/2)  
HPN (16/2)  
(90° angle style)

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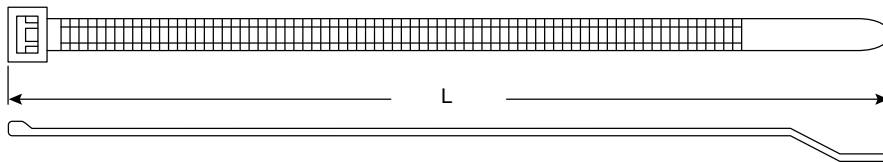
Dimensions (In.)

**Specifications:**

- Cross section: flat
- Cable size: 0.120 x 0.300
- Cable type & gauge (AWG):
  - SPT-1(18/3)
  - SPT-2 (18/2)
  - HPN (18/2)

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One piece, self locking cable ties are molded of tough. Smooth, rounded design prevents damage to insulation and components. Wire tie features a unique, double bend, tapered tip for fast, easy insertion and assembly. Ties can be installed by hand or with available installation tools. Ultra-violet stabilized black nylon ties are available upon request.

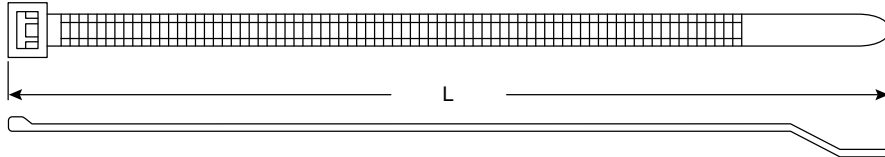
**Specifications:**

- Tested: 73°F / 23°C 1% moisture content
- Underwriters Laboratories recognized
- Component file E70534
- Assigned code B1058
- Miniature tie: 4"
- Length: 4" (102)
- Width: .100" (2.5)
- Max. bundle size: 7/8" (22.2)
- Tensile strength: 18lb. (8.2kg)

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One piece, self locking cable ties are molded of tough. Smooth, rounded design prevents damage to insulation and components. Wire tie features a unique double bend, tapered tip for fast, easy insertion and assembly. Ties can be installed by hand or with available installation tools. Ultra-Violet stabilized black nylon ties are available upon request.

Tested at 23°C 1° moisture content  
Underwriters Laboratories recognized  
Component fil E70534  
Assigned code B1058

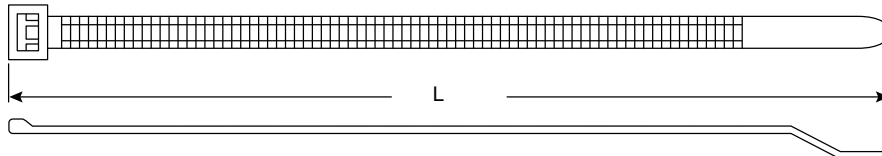
**Specifications:**

- Standard tie: 5 1/2"
- Length: 5 1/2" (104)
- Width: 144" (3.6)
- Max. bundle size: 1 1/4" (31.8)
- Tensile strength: 30lb (13.6kg)

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One piece, self locking cable ties are molded of tough, corrosion resistant and electrically insulating nylon 6/6. Smooth, rounded design prevents damage to insulation and components. Wire tie features a unique, double bend, tapered tip for fast, easy insertion and assembly. Ties can be installed by hand or with available installation tools. Ultra-violet stabilized black nylon ties are available upon request.

**Specifications:**

- Tested: 73°F / 23°C, 1% moisture content
- Underwriters Laboratories recognized
- Component file E70534
- Assigned code B1058
- Standard tie: 6 3/4"
- Length: 6 3/4" (171)
- Width: .195" (4.9)
- Max. bundle size: 1 1/2" (38.1)
- Tensile strength: 30lb (13.6kg)

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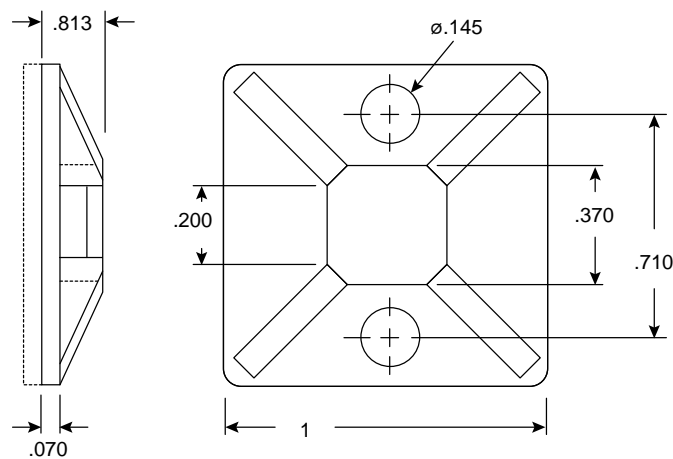
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### Dimensions (In.)



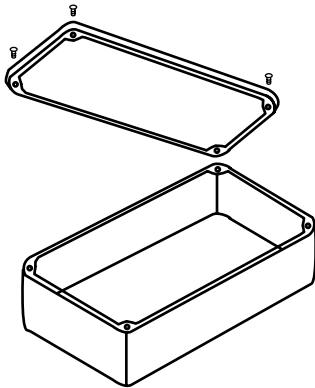
### Specifications:

- Cradle mount (adhesive)

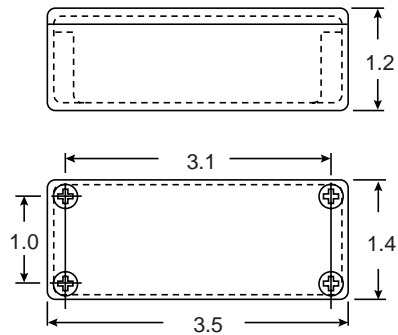
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Dimensions (In.)

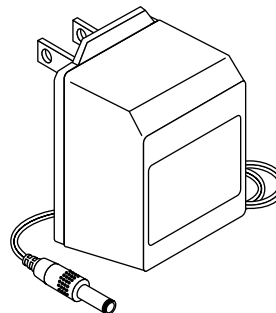
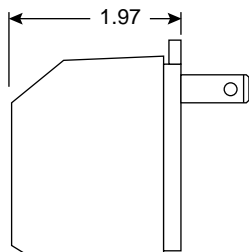
**Specifications:**

- Finish: Natural
- Enclosures: Diecast aluminium
- General wall thickness: .06
- Lid: Four countersunk screws
- Lip: Provides effective EMC screening

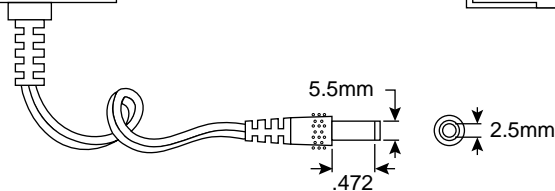
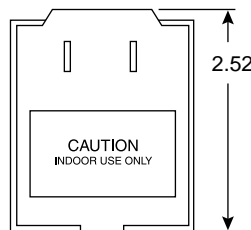
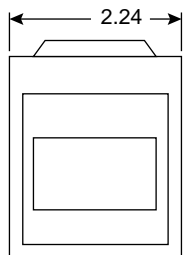
**Material Specifications:**

- Aluminium alloy LM 24
- Screws: M 3.5 zinc plated steel, supadrive
- Head: Countersunk corflex N tapitite

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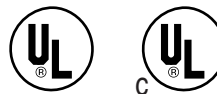


**Dimensions (In.)**  
(except where noted)

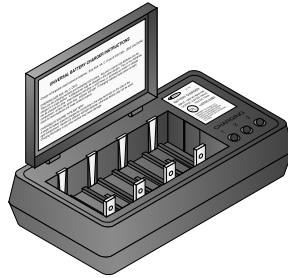


**Specifications:**

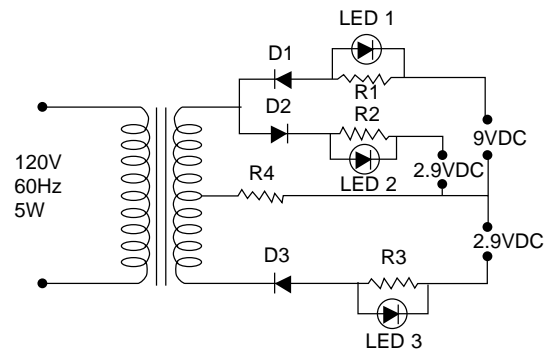
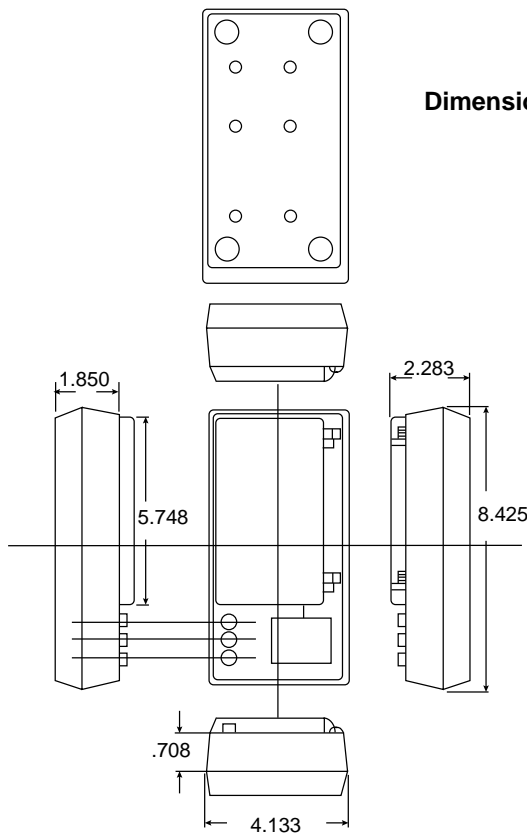
- Primary voltage: 120V 60Hz 30W
- Exciting current, open circuit: 70mA max.
- DC resistance  $\pm 15\%$ :  $51\Omega$
- Secondary, no load voltage: .74VDC
- Loaded voltage: 12VDC @ 1000mA
- DC resistance  $\pm 10\%$ :  $0.80\Omega$
- Insulation resistance:  $100M\Omega$  @ 500VDC
- Dielectric strength: primary-secondary: 1,500VAC for 1 minute  
primary-core: 1,500VAC for 1 minute  
secondary-core: 500VAC for 1 minute
- Temperature rise: 65°C max. @ rated load



File No. E170147



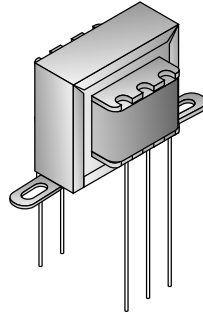
Dimensions (In.)



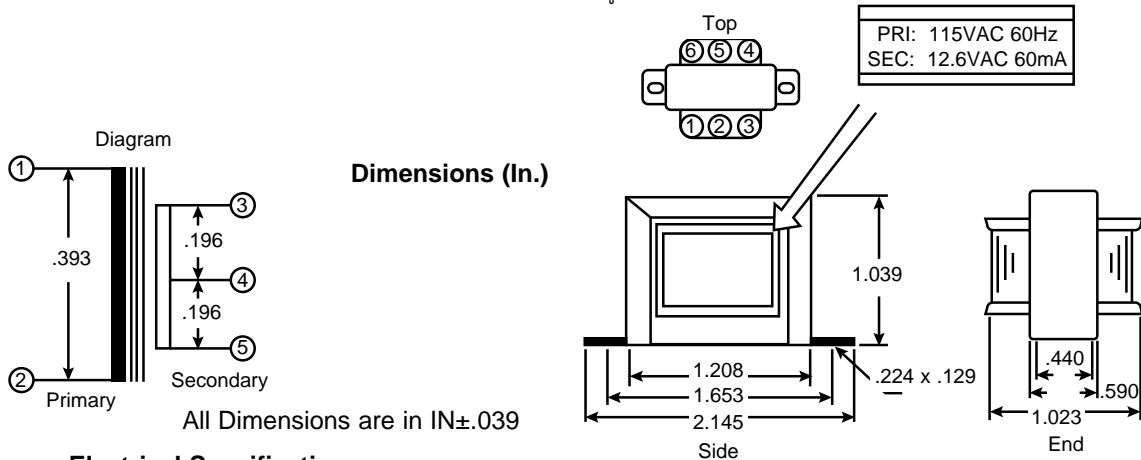
**Specifications:**

- Input: 120VAC / 60Hz 5W
- Output: 9VDC @ 14mA or 2.9VDC @ 100mA
- R1, R2: resistor 10Ω 0.5W
- R3: resistor 270Ω 0.5W
- R4: resistor 5Ω 0.5W
- D1, D2, D3: diode 1N4001 50V 1A
- LED1, LED2, LED3: LED lamp 1.6V 15mA
- Case material: polystyrene

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Test Result at 50Hz  
Line input at 115VAC 50Hz  
Output: 14.6VAC CT at no load  
12.3VAC CT at 60mA load  
PRI exciting current: 14mA  
PRI rated current: 17mA



### Electrical Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 20mA (max.)
- Secondary voltage (no load): 14.6CT VAC ± 0.5V
- Secondary voltage (full load): 12.6CT VAC ± 0.5V
- Rated secondary current: 0.06 Amperes (AC) 60Hz
- Voltage Regulation: Less than 16%  $(V_{NL} - V_{FL}) / (V_{FL}) \times 100$
- Temperature rise: Less than 45°C
- Breakdown voltage (HIPOT): 2000VAC 50Hz 1 minute (s)
- Coil to coil insulation: 200MΩ (min.) 500VDC
- Strain relief: 5 lbs
- Channel frame material and thickness: Iron 0.5mm
- Crossover insulation: 0.05mm Polyester tape

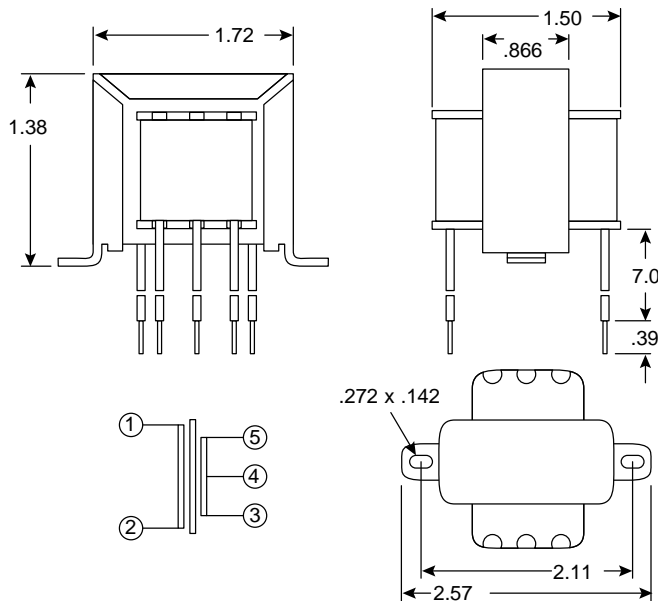
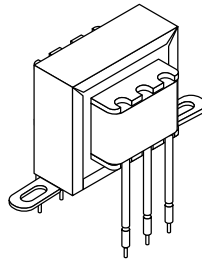
### Mechanical Specification:

- Core size: EI-28
- Core material: Hilite core 0.5mm thickness H-23
- Inner insulation: 3 layer of thickness polyester tape
- Outer wrap insulation: 3 layer of 0.05mm thickness polyester tape with fibre board
- Bobbin: Nylon type no. 66 8 x 11.2mm
- Impregnation: Varnish
- Lead wire: SWG23 - SWG25 diameter (0.5-0.6mm)
- Length: 15mm ± 5mm / .590" ± .196"

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## HiQ™

Dimensions (In.)



### Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 40mA (max.)
- Secondary voltage (no load): 20.6CT VAC $\pm$ 0.6V%
- Secondary voltage (full load): 18.0CT VAC $\pm$ 0.6V%
- Rated secondary current: 0.3 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL)x100
- Temperature rise (@ room temp. 25°C): less than 50°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.

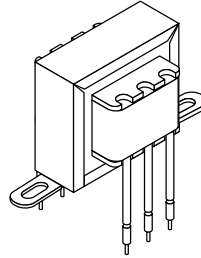
- Channel frame material & thickness: iron 0.6mm
- Crossover insulation: 0.05mm polyester tape
- Primary winding: SWG38 (0.15mm)
- Secondary winding: SWG29 (0.35mm)
- Core size: EI-41
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of 0.05mm polyester tape
- Outer wrap insulation: 3 layers of 0.05mm polyester tape w/1 pc. of fibre board (yellow)
- Bobbin: nylon, normal type 13mm x 19.2mm
- Impregnation: varnish
- Lead wire: Pri. UL-1015 AWG22, Sec. UL-1007 AWG22

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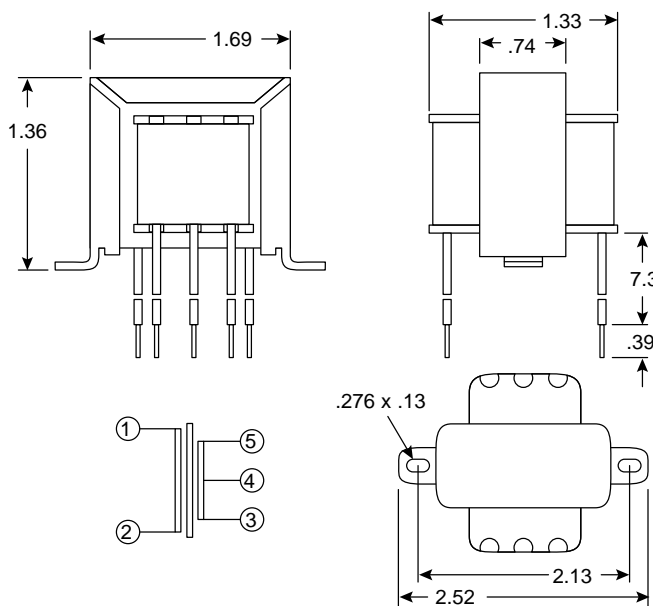
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## HiQ™



Dimensions (In.)



### Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 35mA (max.)
- Secondary voltage (no load): 14.3CT VAC $\pm$ 0.6V%
- Secondary voltage (full load): 12.6CT VAC $\pm$ 0.6V%
- Rated secondary current: 0.3 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL) $\times$ 100
- Temperature rise (@ room temp. 25°C): less than 50°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.

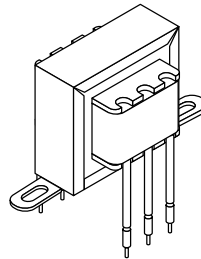
- Channel frame material & thickness: iron 0.6mm
- Crossover insulation: .05mm polyester tape
- Primary winding: SWG38 (0.15mm)
- Secondary winding: SWG29 (0.35mm)
- Core size: EI-41
- Core material: hilite core H-23 .5mm
- Inner insulation: 3 layers of 0.05mm polyester tape
- Outer wrap insulation: 3 layers of 0.05mm polyester tape w/1 pc. of fibre board (yellow)
- Bobbin: nylon, normal type 13mm x 16.5mm
- Impregnation: varnish
- Lead wire: Pri. UL-1015 AWG22 & Sec. UL-1007 AWG22

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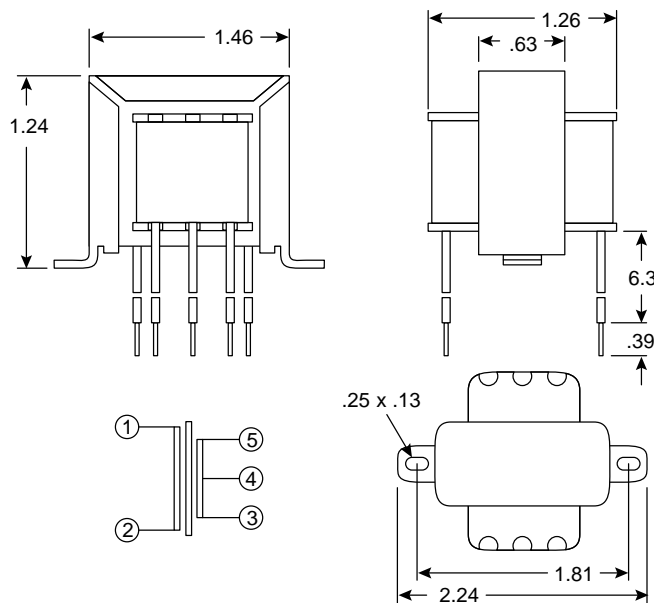
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## HiQ™



Dimensions (In.)



### Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 30mA (max.)
- Secondary voltage (no load): 16.4CT VAC $\pm$ 0.3V%
- Secondary voltage (full load): 12.6CT VAC $\pm$ 0.3V%
- Rated secondary current: 0.2 Amperes (AC) 60Hz
- Voltage regulation: less than 30% (VNL-VFL)/(VFL)x100
- Temperature rise (@ room temp. 25°C): less than 45°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.

- Channel frame material & thickness: iron 0.6mm
- Crossover insulation: .05mm polyester tape
- Primary winding: SWG24
- Secondary winding: SWG32
- Core size: EI-35
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of .05mm polyester tape
- Outer wrap insulation: 3 layers of 0.05mm polyester tape w/1 pc. of fibre board (yellow)
- Bobbin: nylon no. 66, normal type 10mm x 14.5mm
- Impregnation: varnish
- Lead wire: Pri. & Sec. UL-1007 AWG22

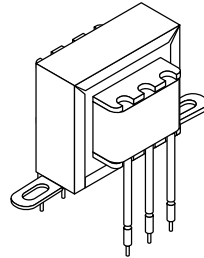
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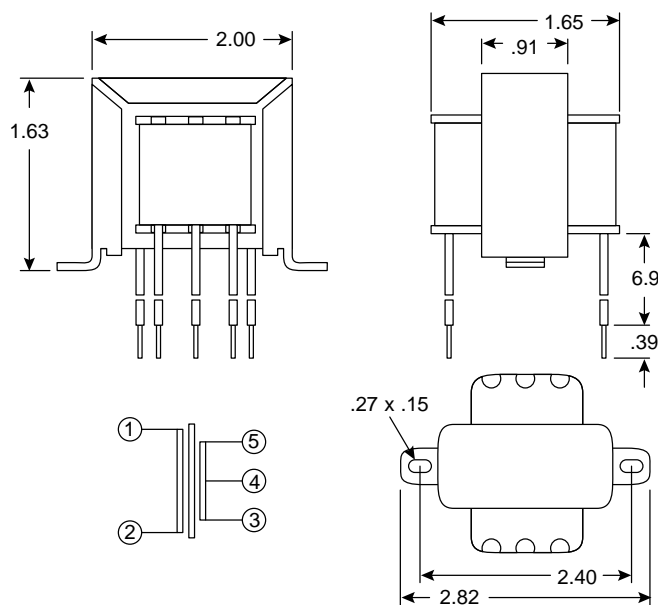
<http://www.mouser.com>



## HiQ™



Dimensions (In.)



### Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 65mA (max.)
- Secondary voltage (no load): 27.9CT VAC $\pm$ 0.6V%
- Secondary voltage (full load): 24.0CT VAC $\pm$ 0.6V%
- Rated secondary current: 0.6 Amperes (AC) 60Hz
- Voltage regulation: less than 18% (VNL-VFL)/(VFL)x100
- Temperature rise (@ room temp. 25°C): less than 60°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.
- Channel frame material & thickness: iron 0.7mm
- Crossover insulation: 0.05mm thickness polyester tape
- Primary winding: SWG36 (0.19mm)
- Secondary winding: SWG26 (0.45mm)
- Core size: EI-48
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of 0.05mm polyester tape
- Outer wrap insulation: 3 layers of polyester tape w/ 1 pc. fibre board (yellow)
- Bobbin: nylon, normal type 16mm x 21.5mm
- Impregnation: varnish
- Lead wire: Pri. & Sec. UL-1015 AWG22

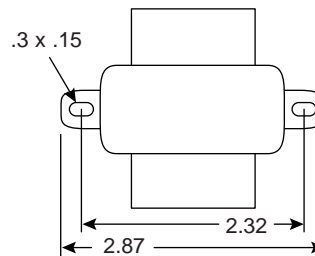
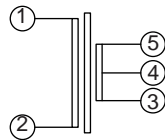
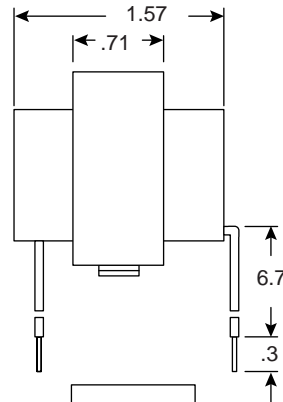
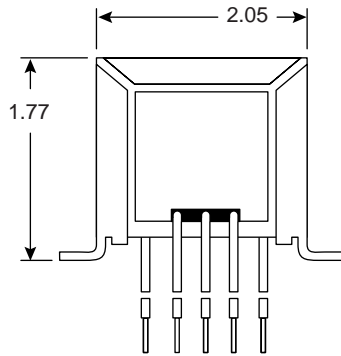
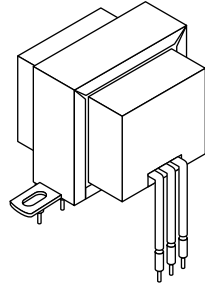
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## HiQ™

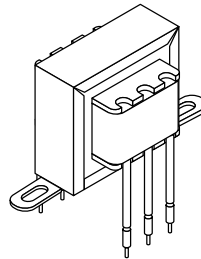
Dimensions (In.)



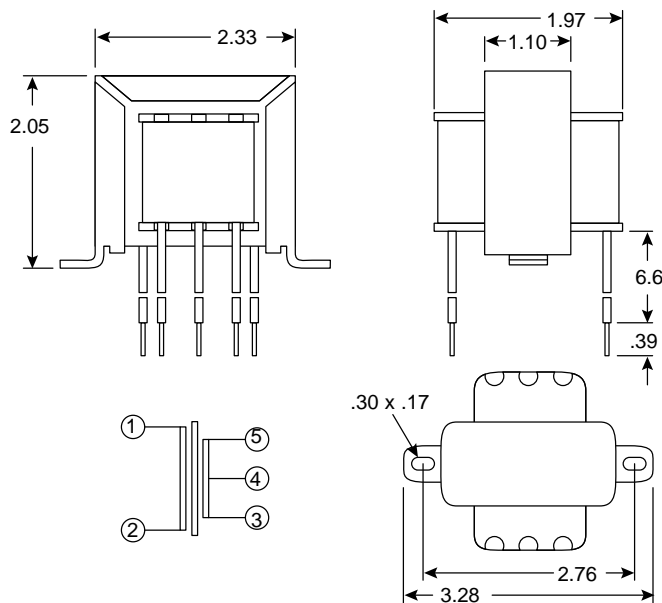
### Specifications:

- Primary voltage: 115VAC 60Hz
- Secondary voltage (no load): 7.25CT VAC (min.)
- Secondary voltage (full load): 6.3CT VAC (max.)
- Rated secondary current: 1 Amperes (AC)
- Primary current: 65mA (max.)
- Temperature rise: less than 40°C
- Breakdown voltage (HiPOT): 1.5KV, 1minute
- Coil to coil insulation: 200MΩ (min.)
- Bobbin: nylon no.66, normal type
- Frame: steel
- Lead wire: 22AWG FR-1 UL1015

## HiQ™



Dimensions (In.)



### Specifications:

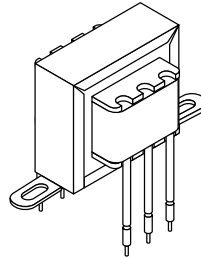
- Primary voltage: 115VAC 60Hz
- Primary exciting current: 90mA (max.)
- Secondary voltage (no load): 7.3CT VAC $\pm$ 0.4V%
- Secondary voltage (full load): 6.3CT VAC $\pm$ 0.4V%
- Rated secondary current: 3.0 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL)x100
- Temperature rise (@ room temp. 25°C): less than 65°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.
- Channel frame material & thickness: iron 0.3"
- Crossover insulation: .002" polyester tape
- Primary winding: SWG31
- Secondary winding: SWG22 x 2, SWG27 x 1
- Core size: EI-57
- Core material: hilite core
- Inner insulation: 3 layers of .002" polyester tape
- Outer wrap insulation: 3 layers of .002" polyester tape w/1 pc. of fibre board (yellow)
- Bobbin: nylon no. 66, normal type .75" x .98"
- Impregnation: varnish
- Lead wire: Pri. UL-1015 AWG22 & Sec. UL-1015 AWG18

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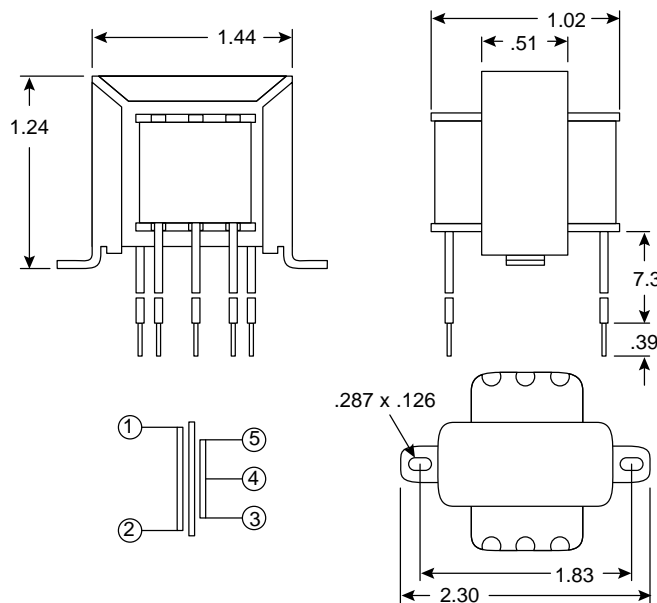
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## HiQ™



Dimensions (In.)



### Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 30mA (max.)
- Secondary voltage (no load): 14.4CT VAC $\pm$ 0.4V%
- Secondary voltage (full load): 12.6CT VAC $\pm$ 0.4V%
- Rated secondary current: 0.1 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL) $\times$ 100
- Temperature rise (@ room temp. 25°C): less than 45°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.

- Channel frame material & thickness: iron 0.6mm
- Crossover insulation: .05mm polyester tape
- Primary winding: SWG43 (0.09mm)
- Secondary winding: SWG34 (0.23mm)
- Core size: EI-35
- Core material: hilite core H-23 .05mm
- Inner insulation: 3 layers of .05mm polyester tape
- Outer wrap insulation: 3 layers of 0.05mm polyester tape w/1 pc. of fibre board (yellow)
- Bobbin: nylon, normal type 10mm x 11mm
- Impregnation: varnish
- Lead wire: Pri. & Sec. UL-1007 AWG22

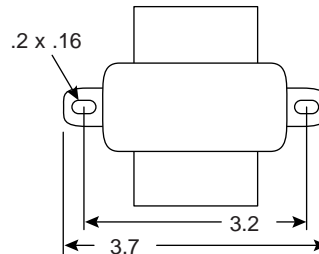
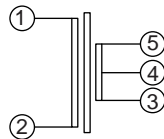
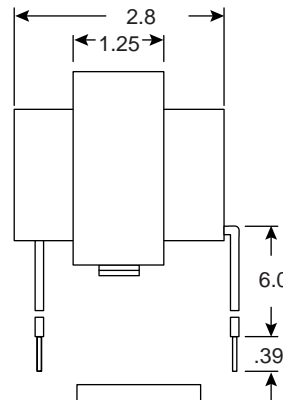
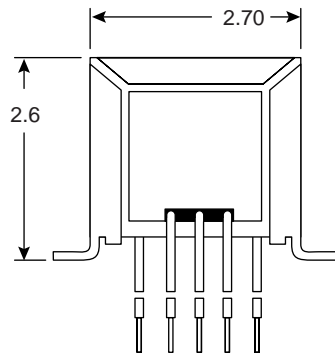
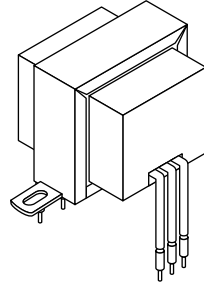
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## HiQ™

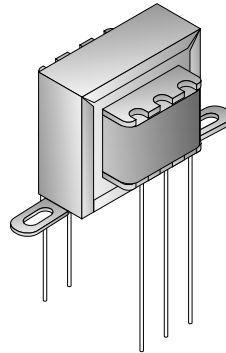
Dimensions (In.)



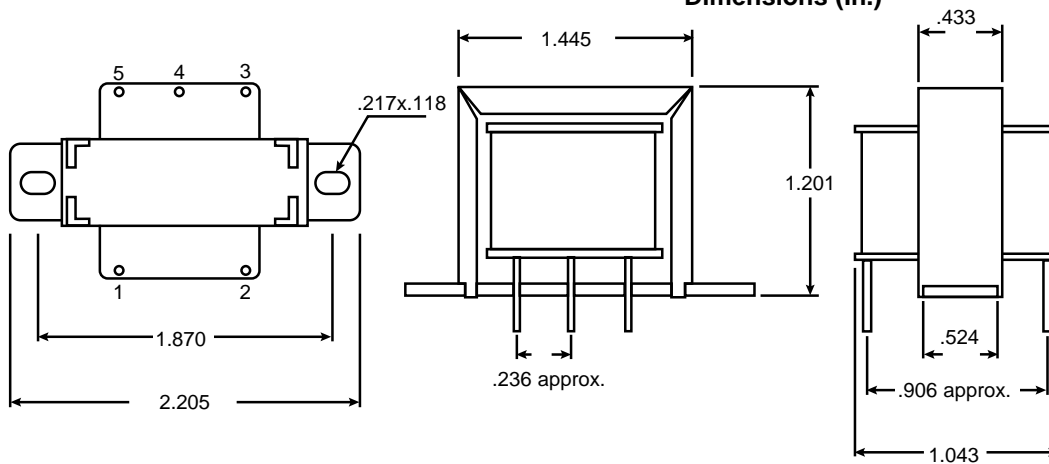
**Specifications:**

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 100mA (max.)
- Secondary voltage (no load): 25.7CT VAC @ 3%
- Secondary voltage (full load): 24.0CT VAC @ 3%
- Rated secondary current: 2 Amperes (AC) 60Hz
- Temperature rise: less than 75°C
- Breakdown voltage (Hi-pot): 1500VAC @ 60Hz, 1 minute
- Coil to coil insulation: 200MΩ @ 500VDC
- Core size: EI-66
- Lead wire strength: 1.5kg, 15 seconds
- Lead color coding: pri.=black, sec.=red/white





Dimensions (In.)



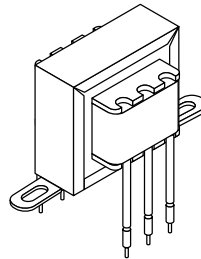
**Specifications:**

- Primary voltage: 115VAC, 60Hz
- Primary exciting current: 40mA (max)
- Secondary voltage (no load): 13.8VAC ct  $\pm$ .4V
- Secondary voltage (full load): 12.0VAC ct  $\pm$ .4V
- Rated secondary current: .12A(AC) @ 60Hz
- Voltage regulation: 15%
- Temperature rise: 45 deg. c
- Breakdown voltage: 2000VAC @ 50Hz, for 1 minute
- Coil to coil insulation: 200M $\Omega$  (min) @ 500VDC
- Channel frame material & thickness: iron .6mm
- Crossover insulation: .05mm thick polyester tape
- Primary winding: .10mm dia., 3200 turns
- Secondary winding: .25mm thick polyester tape
- Core size: hilite core H-23 .5mm
- Inner insulation: 3 layers of .05mm thick polyester
- Outer wrap insulation: 3 layers of .05mm thick yellow polyester tape with 1 pc. of fiber board
- Bobbin: nylon, normal type 10mm x 11mm
- Impregnation: varnish
- Type: class 2 power transformer

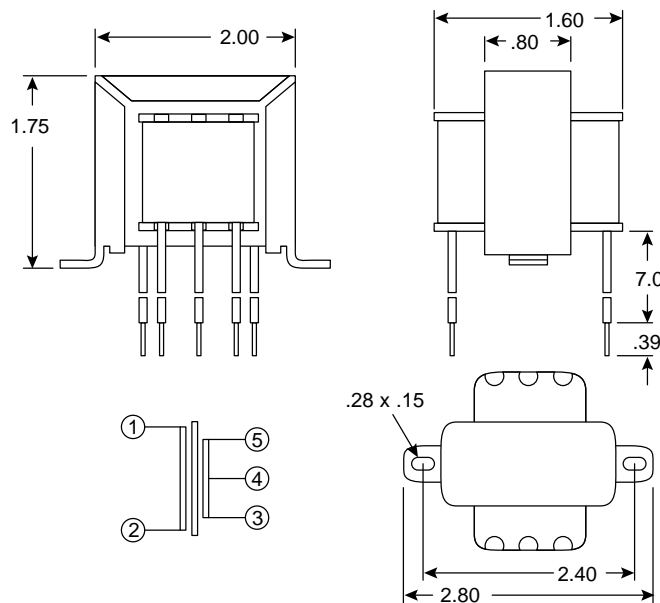
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Dimensions (In.)



**Specifications:**

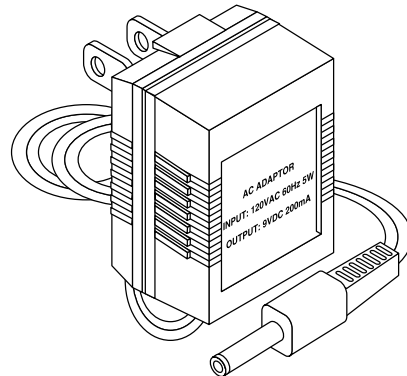
- Primary voltage: 115VAC 60Hz
- Primary exciting current: 65mA (max.)
- Secondary voltage (no load): 20.6CT VAC $\pm$ 0.6V%
- Secondary voltage (full load): 18.0CT VAC $\pm$ 0.6V%
- Rated secondary current: 0.6 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL)x100
- Temperature rise (@ room temp. 25°C): less than 60°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs.

- Channel frame material & thickness: iron 0.7mm
- Crossover insulation: .05mm polyester tape
- Primary winding: SWG36 (0.17mm)
- Secondary winding: SWG26 (0.45mm)
- Core size: EI-48
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of .05mm polyester tape
- Outer wrap insulation: 3 layers of 0.05mm polyester tape w/1 pc. of fibre board (yellow)
- Bobbin: nylon, normal type 16mm x 18mm
- Impregnation: varnish
- Lead wire: Pri. & Sec. UL-1015 AWG22

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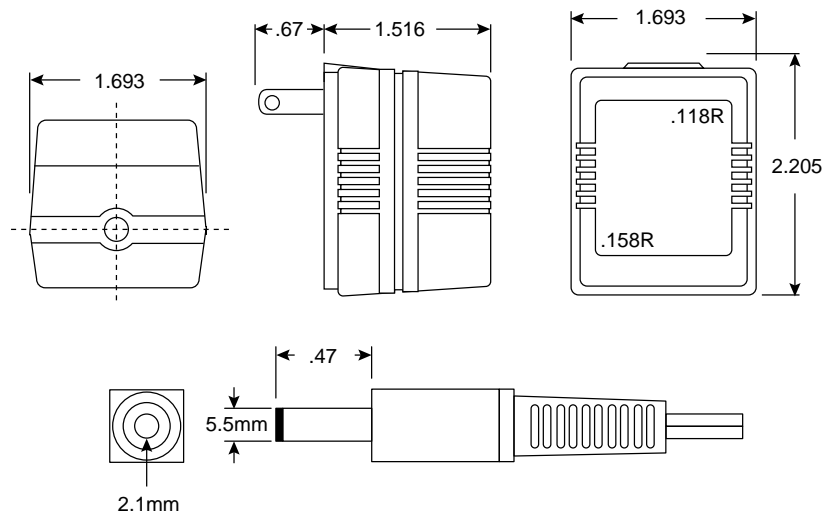
<http://www.mouser.com>



E 151992



LR57562



### Dimensions (In.)

#### Specifications:

- Primary exciting current: 35.0mA max. @ 120VAC 60Hz
- Primary full load current: 55.0mA max. @ 120VAC 60Hz
- Secondary no load voltage: 15.5VDC
- Secondary load voltage: 9.5VDC max., 9.0VDC nom., 8.5VDC min. @ 200mA load
- Ripple voltage: 1.8VPP @ 200mA load
- Dielectric withstanding voltage test: 1.5KV for 1 second
- Plug polarity: hole/positive

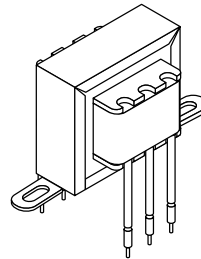
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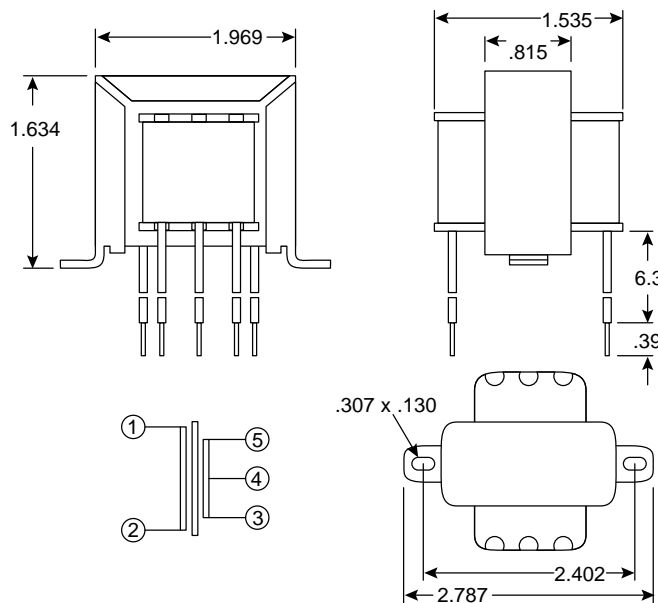
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Dimensions (In.)



### Specifications:

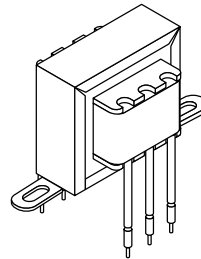
- Primary voltage: 115VAC 60Hz
- Primary exciting current: 65mA (max.)
- Secondary voltage (no load): 14.0CT VAC±0.5V%
- Secondary voltage (full load): 12.6CT VAC±0.5V%
- Rated secondary current: 0.6 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL)x100
- Temperature rise: less than 60°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200MΩ (min.) 500VDC
- Strain relief: 10 lbs.
- Channel frame material & thickness: iron 0.7mm
- Crossover insulation: 0.05mm thickness polyester tape
- Core size: EI-48
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of 0.05mm thickness polyester tape
- Bobbin: nylon, normal type 16mmx18mm
- Impregnation: varnish
- Lead wire: Pri. & Sec. use UL-1015 AWG22

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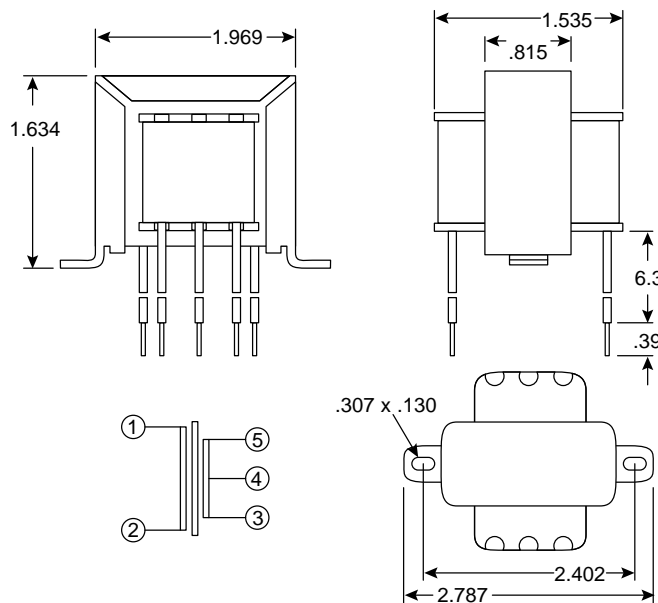
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Dimensions (In.)



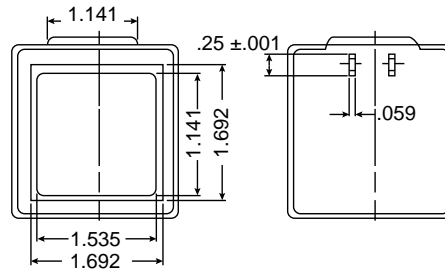
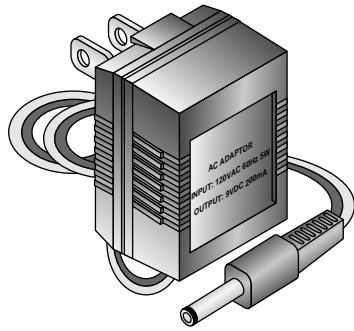
### Specifications:

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 65mA (max.)
- Secondary voltage (no load): 14.0CT VAC±0.5V%
- Secondary voltage (full load): 12.6CT VAC±0.5V%
- Rated secondary current: 0.6 Amperes (AC) 60Hz
- Voltage regulation: less than 15% (VNL-VFL)/(VFL)x100
- Temperature rise: less than 60°C
- Breakdown voltage (HiPOT): 2000VAC 50Hz, 1minute
- Coil to coil insulation: 200MΩ (min.) 500VDC
- Strain relief: 10 lbs.
- Channel frame material & thickness: iron 0.7mm
- Crossover insulation: 0.05mm thickness polyester tape
- Core size: EI-48
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of 0.05mm thickness polyester tape
- Bobbin: nylon, normal type 16mmx18mm
- Impregnation: varnish
- Lead wire: Pri. & Sec. use UL-1015 AWG22

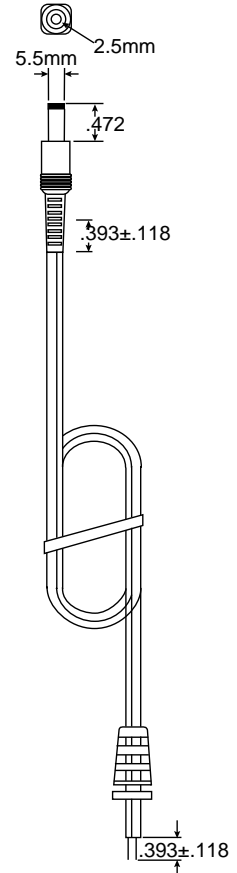
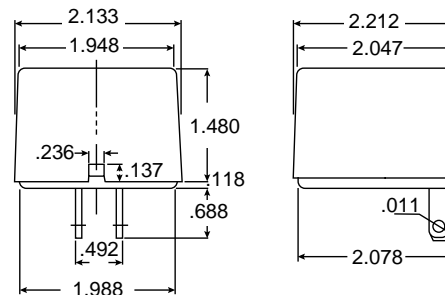
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Dimensions (In.)



**Specifications:**

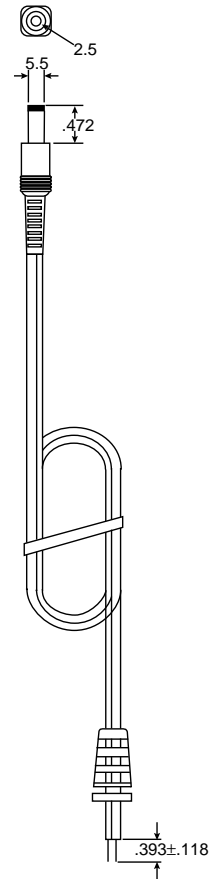
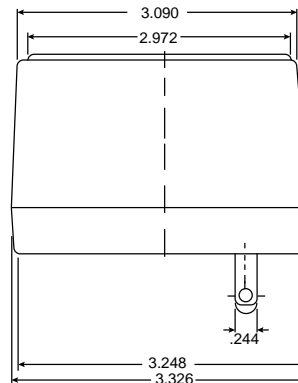
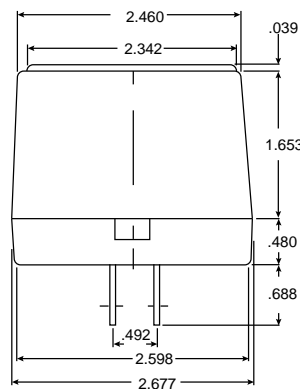
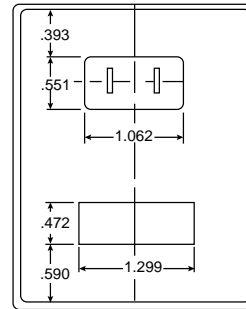
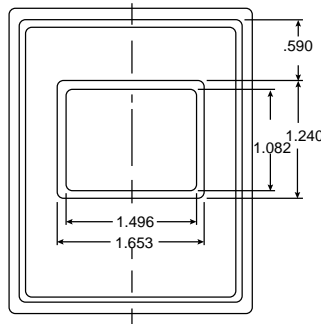
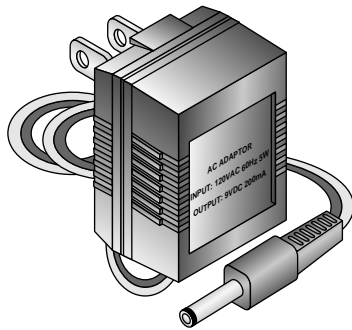
- Tolerance: .019
- Output Cord: AWG# 22(2468)
- Length: 6ft +3" -0"
- White: Positive
- Black: Negative

Electrical Specification

Item	Description	Spec				Test Condition
		Max.	Nom.	Min.	Unit	
I <sub>O</sub>	Primary Exciting Current	80	-----	-----	mA	I/P 120VAC 60Hz
I <sub>P</sub>	Primary Full Load Current	120	-----	-----	mA	I/P 120VAC 60Hz
V <sub>O</sub>	Secondary No Load Voltage	19.5	-----	-----	VDC	I/P 120VAC 60Hz at sec. open circuit
V <sub>L</sub>	Secondary Load Voltage	12.6	12.0	11.4	VDC	I/P 120VAC 60Hz at 500mA load
V <sub>R</sub>	Ripple Voltage	3.5	-----	-----	V <sub>PP</sub>	500mA load
T <sub>R</sub>	Temperature Rise	70	-----	-----	°C	After 8 hrs full load (in 25°C ambient) by resistance method
V <sub>DPS</sub>	Dielectric Withstanding Voltage Test	1.5k	-----	-----	V	At leakage current 0.5mA max. from input to output terminal for 1 sec.
PP	Plug Polarity	-----	-----	-----	-----	hole/ tip positive

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**Dimensions (In.)**



**Specifications:**

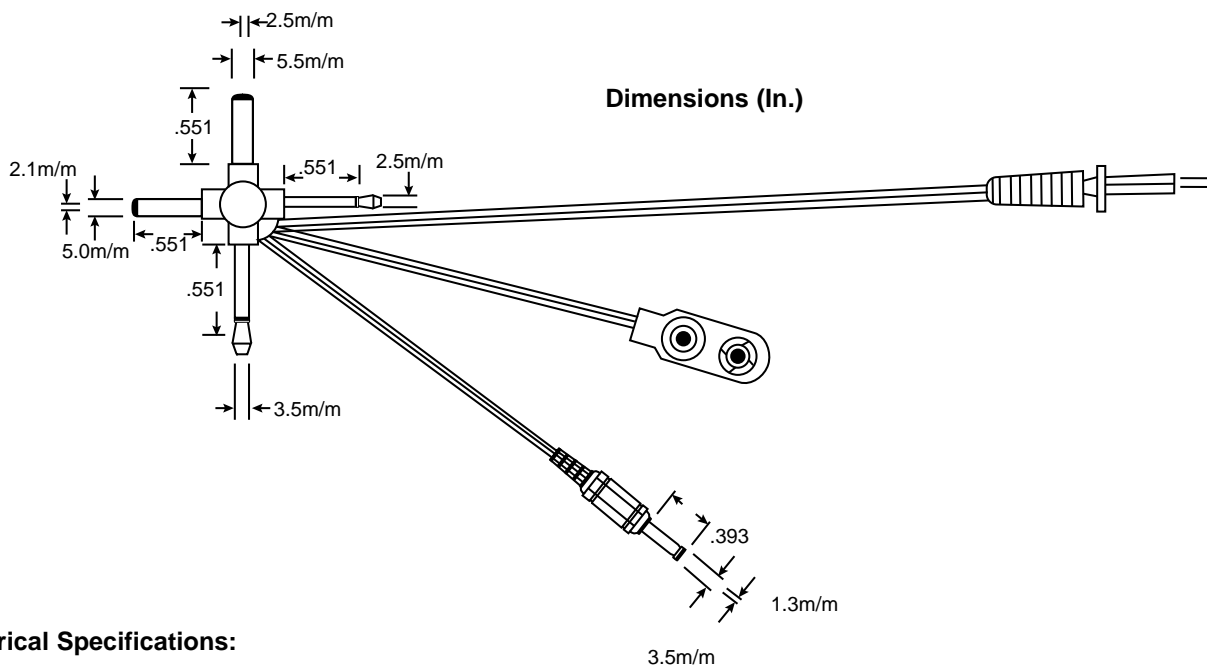
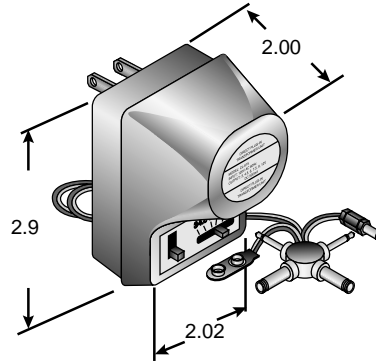
- Tolerance: .019
- Output Cord: AWG# 22(2468)
- Length: 6ft +3" -0"
- White: Positive
- Black: Negative

**Electrical Specification**

Item	Description	Spec				Test Condition
		Max.	Nom.	Min.	Unit	
I <sub>O</sub>	Primary Exciting Current	100	-----	-----	mA	I/P 120VAC 60Hz
I <sub>P</sub>	Primary Full Load Current	200	-----	-----	mA	I/P 120VAC 60Hz
V <sub>O</sub>	Secondary No Load Voltage	19.5	-----	-----	VDC	I/P 120VAC 60Hz at sec. open circuit
V <sub>L</sub>	Secondary Load Voltage	12.6	12.0	11.4	VDC	I/P 120VAC 60Hz at 1000mA load
V <sub>R</sub>	Ripple Voltage	3.6	-----	-----	V <sub>PP</sub>	1000mA load
T <sub>R</sub>	Temperature Rise	70	-----	-----	°C	After 8 hrs full load (in 25°C ambient) by resistance method
V <sub>DPS</sub>	Dielectric Withstanding Voltage Test	1.5k	-----	-----	V	At leakage current 0.5mA max. from input to output terminal for 1 sec.
PP	Plug Polarity	-----	-----	-----	-----	hole/ tip positive

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Position	Rated Voltage	Rated Current	Voltage Regulation	No Load Voltage
1	3VDC	60mA	500mA	5.2V
2	4.5V	66mA	500mA	7.1V
3	6.0V	72mA	500mA	9.1V
4	7.5V	79mA	500mA	11.1V
5	9.0V	85mA	500mA	13.0V
6	12.0V	98mA	500mA	17.7V



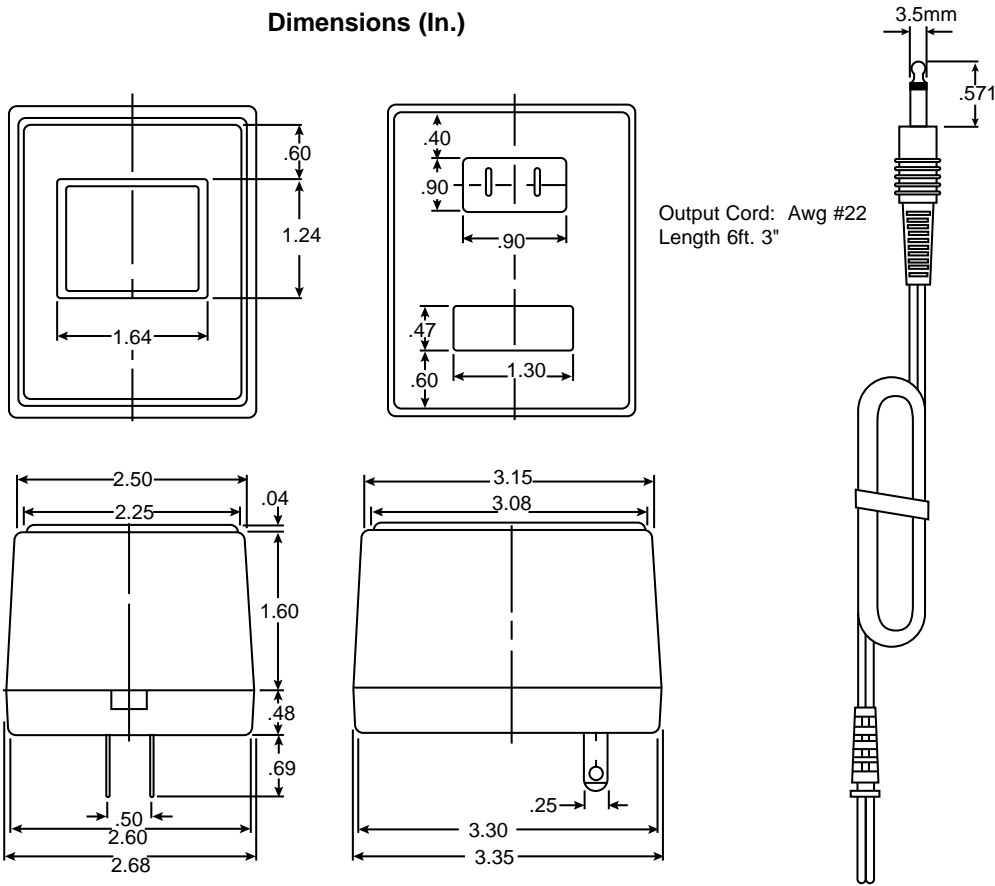
**Electrical Specifications:**

- Exciting current: Input primary 120V 60Hz 50mA max.
- Primary rated voltage & frequency: 120V 60Hz
- HIPOT test: Input 60Hz 1500V for one minute between primary and secondary and between primary to core  
1000V for one minute between secondary and secondary and between secondary to core
- Induced voltage: At secondary open input primary 400Hz 240V for 15 seconds
- Insulation test: 500VDC 100MΩ min. between windings and windings and core
- Humidity test: Temp. 32±2°C relative humidity 90%RH for 6 hours, after keeping 30 minutes following insulation must be larger than 5MΩ
- Temperature rise test: Less than 70°C for rated test with resistance method

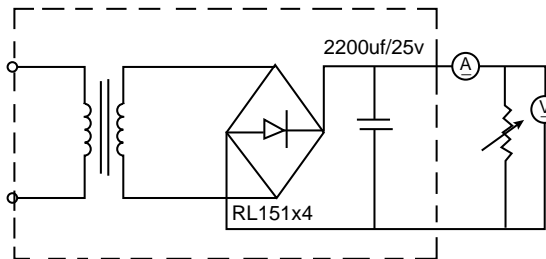
Mouser Stock No.	Output Rating (mA)	Output Plug
412-3111	Universal 3, 4.5, 6, 7.5, 9 and 12VDC/500mA	6 way 2.5mm, 3.5mm male, 1.3mm3.5mm, 2.1mm5.0mm, 2.5mm5.5mm female 9VDC batt., snap, ± polarity switch

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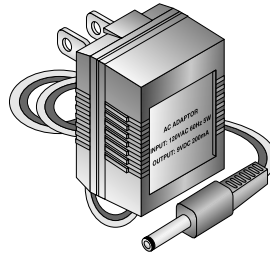


Circuit Diagram:

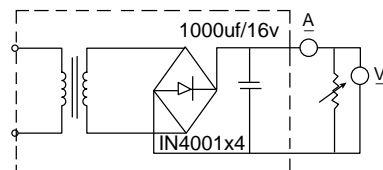
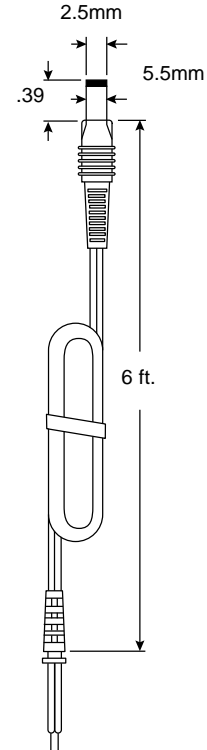
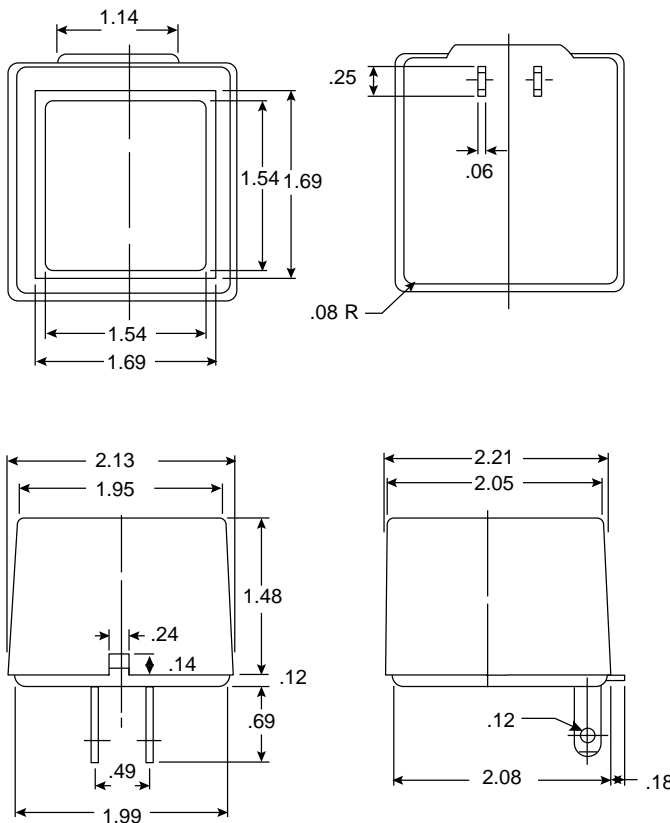


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Item	Description	Spec				Test Condition
		Max.	Nom.	Min.	Min.	
I <sub>O</sub>	Primary Exciting current	100.0	-----	-----	mA	I/P 120VAC 60Hz
I <sub>P</sub>	Primary Full Load Current	200.0	-----	-----	mA	I/P 120VAC 60Hz
V <sub>O</sub>	Secondary No Load Voltage	19.5	-----	-----	V <sub>DC</sub>	I/P 120VAC 60Hz at sec. open circuit
V <sub>L</sub>	Secondary Load Voltage	12.6	12.0	11.4	V <sub>DC</sub>	I/P 120VAC 60Hz at 1000mA load
V <sub>R</sub>	Ripple Voltage	3.6	-----	-----	V <sub>PP</sub>	at 1000mA load
T <sub>P</sub>	Temperature Rise	70.0	-----	-----	°C	After 8 hrs full load (in 25°C ambient) by resistance method
V <sub>OPS</sub>	Dielectric Withstanding Voltage Test	1.5k	-----	-----	V	At leakage current 0.5 mA max. From input to output terminal for 1 second
PP	Plug Polarity	-----	-----	-----	-----	Hole/ tip WHT Positive
V <sub>L</sub>	Grounding Continuity				V <sub>DC</sub>	Input grounding to output grounding resistance



**Dimensions (In.)**



**Specifications:**

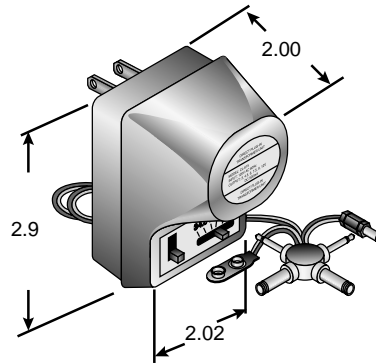
- Primary exciting current: 65.0mA @ 120VAC, 60Hz
- Primary full load current: 80.0mA
- Secondary no load voltage: 15.5VDC
- Secondary load voltage: 9.0VDC (nom.) @ 300mA load
- Ripple Voltage: 2.4V @ 300mA load
- Dielectric withstanding voltage: 1.5KV @ .5mA (max) from input to output terminal for 1 second
- Tip positive

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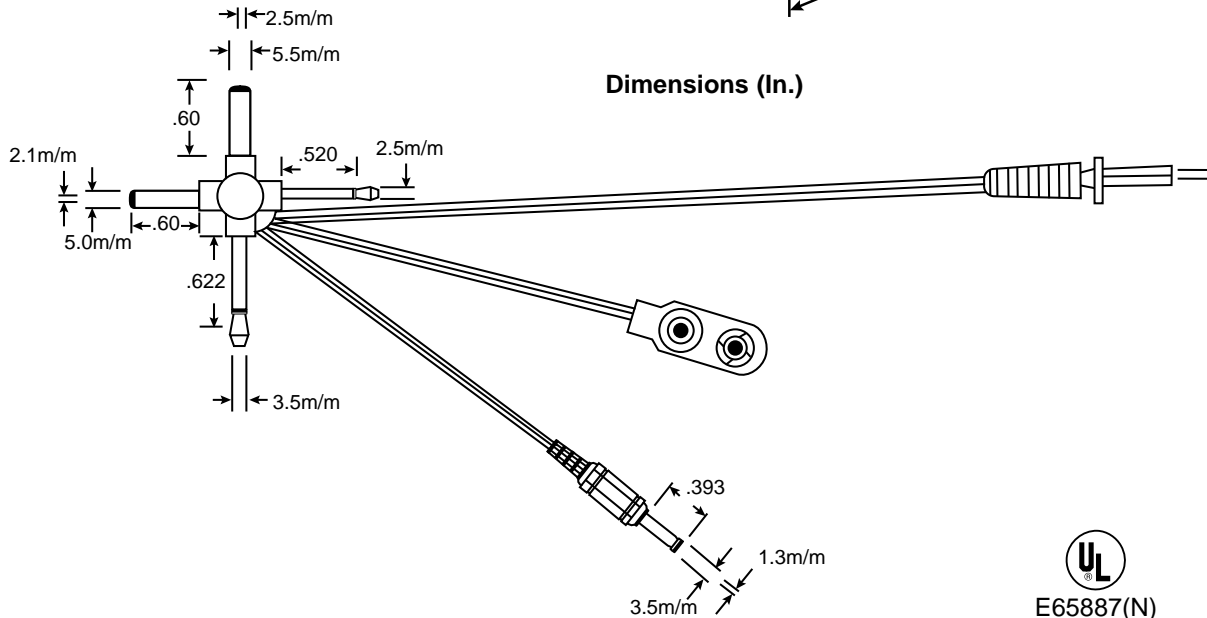
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Rated Voltage	Rated Current	Load	No Load Voltage
3	28	210mA	4.3
4.5	43	400mA	7
6	48.6	430mA	9
7.5	55.5	430mA	11.3
9	61.6	430mA	13.5
12	77.6	430mA	18



Dimensions (In.)



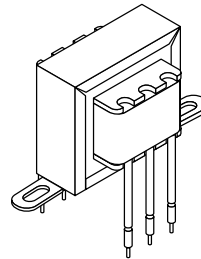
**Electrical Specifications:**

- Exciting current: Input primary 120V 60Hz 45mA max.
- Primary rated voltage & frequency: 120V 60Hz
- HIPOT test: Input 60Hz 1500V for one minute between primary and secondary
- Insulation test: 500VDC 100MΩ min. between windings
- Temperature rise test: Less than 65°C for rated test with resistance method
- Meet UL 1310 requirements

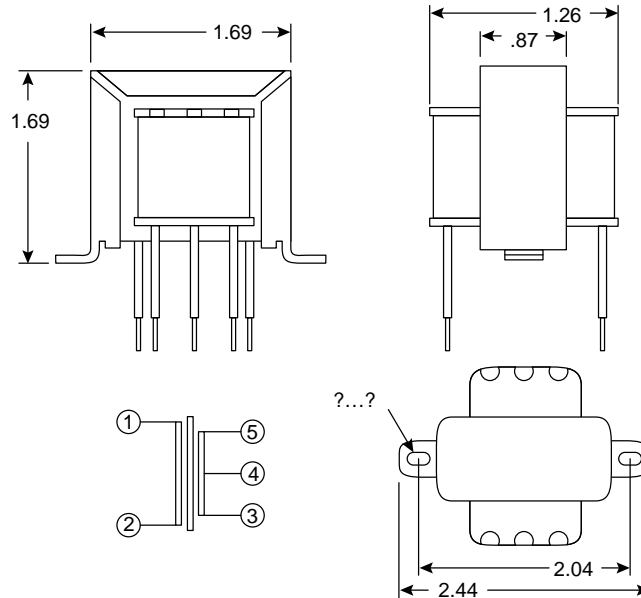
Mouser Stock No.	Output Rating (mA)	Output Plug
412-3120	Universal 3, 4.5, 6, 7.5, 9 and 12VDC/500mA	6 way 2.5mm, 3.5mm male, 1.3mm3.5mm, 2.1mm5.0mm, 2.5mm5.5mm female 9VDC batt., snap, ± polarity switch

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## HiQ™



Dimensions (In.)



**Specifications:**

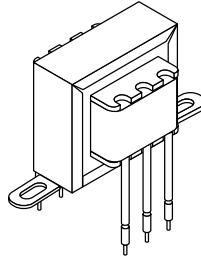
- Primary voltage: 115VAC 60Hz
- Primary exciting current: 115V 60Hz, 45mA (max.)
- Secondary voltage (no load): 24.0CT VAC±0.5V%
- Secondary voltage (full load): 27.5CT VAC±0.5V%
- Voltage regulation: 14.6% (VNL-VFL)/(VFL)x100
- Breakdown voltage (HiPOT): 12KV 60Hz for 1 minute
- Coil to coil insulation: 100MΩ (min.) 500VDC
- Core size: EI-41
- Lead wire: Pri. UL-1015 AWG22, Sec. UL-1007 AWG22
- Wire: 153mm in length, 9mm stripped & tinned  
1,2-black, 3,5-red, 4-white

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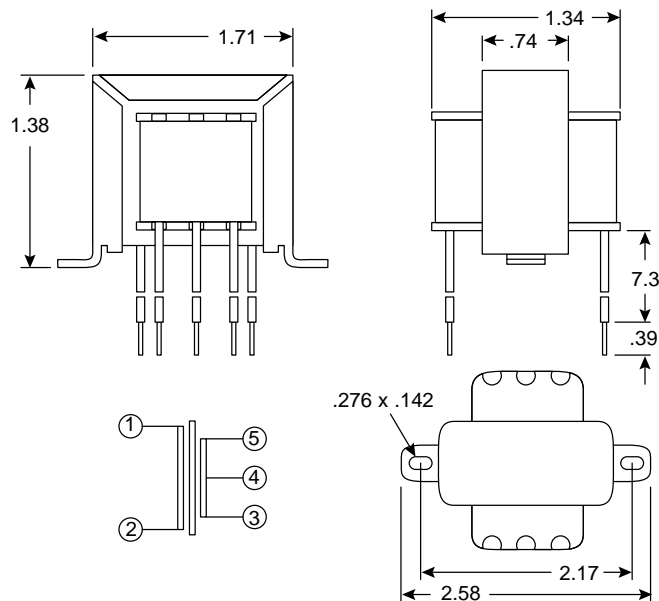
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**HiQ™**



Dimensions (In.)



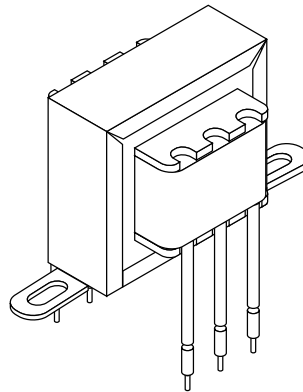
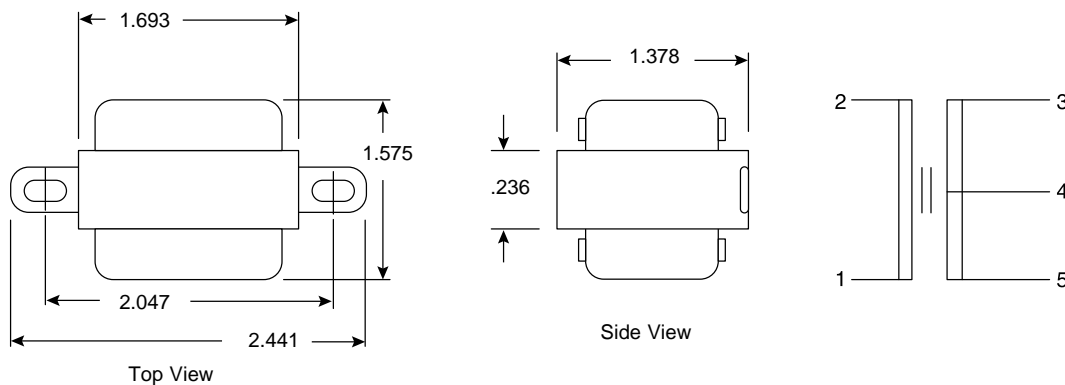
**Specifications:**

- Primary voltage: 115VAC 60Hz
- Primary exciting current: 35mA (max.)
- Secondary voltage (no load): 20.4CT VAC  $\pm 0.8V$
- Secondary voltage (full load): 18.0CT VAC  $\pm 0.8V$
- Rated secondary current: 0.2 amperes (AC) 60Hz
- Voltage regulation: less than 15%  $(V_{NL} - V_{FL}) / (V_{FL})$  x 100
- Temperature rise (@ room temperature 25°C): less than 50°C
- Breakdown voltage (HIPOT): 2000VAC 50Hz 1 minute
- Coil to coil insulation: 200M $\Omega$  (min.) 500VDC
- Strain relief: 10 lbs
- Channel frame material & thickness: iron 0.6mm
- Crossover insulation: 0.05mm polyester tape
- Core size: EI-41
- Core material: hilite core H-23 0.5mm
- Inner insulation: 3 layers of 0.05mm polyester tape
- Outer wrap insulation: 3 layer of 0.05mm polyester tape w/1 pc of fibre board (yellow)
- Bobbin: nylon, normal type 13mm x 16.5mm
- Impregnation: varnish
- Lead wire: PRI UL-1015 AWG22, SEC UL-1007 AWG22

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**Dimensions (In.)****Specifications:**

- Core type/size: EI-41
- Primary rated voltage & line frequency: 115V 60Hz
- Exciting current: 115V 60Hz, 65mA max.
- Secondary rating: with 5% tolerance
  - Lead number: 3-4-5
  - Rated voltage: AC 24.0VCT
  - Rated load: AC 200mA
  - Open voltage: 27.6VAC max.
  - Regulation: less than 15%
- Hi-pot test: apply 60Hz 1.5KV for 1 minute between the primary windings and the core, and between primary and secondary
- Insulation test: 500VDC 100MΩ min. between windings, and between primary and core

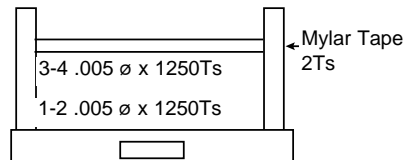
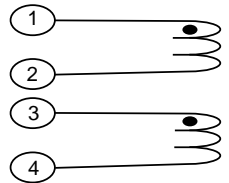
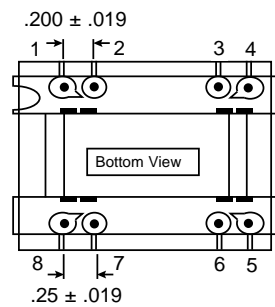
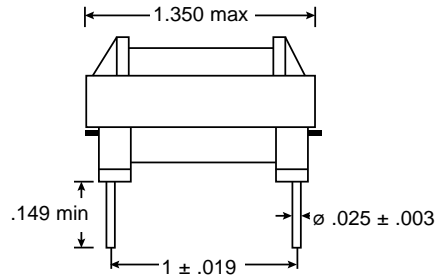
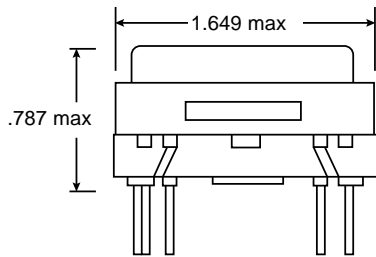
**Lead Specifications:**

- Color: 1-black, 2-black, 3-red, 4-white, 5-red
- Length: 153mm
- Stripped: 9mm
- Tinned: 9mm
- Description: 1 & 2- 1015/22 AWG; 3,4 & 5- 1007/22AWG

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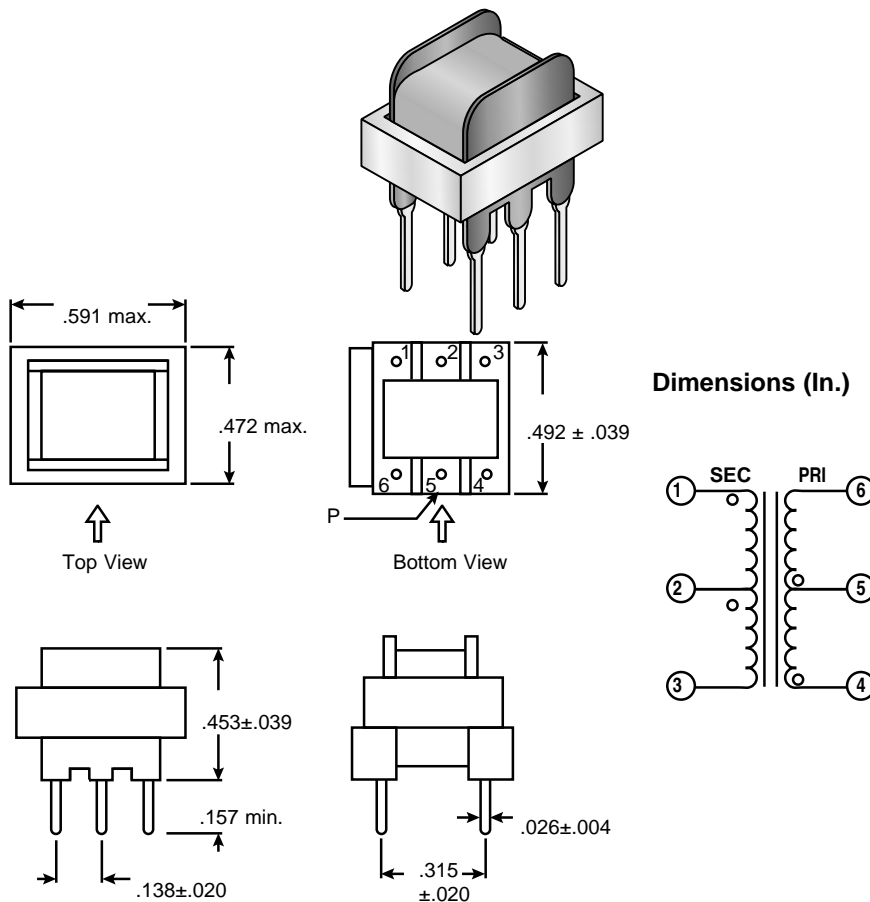
<http://www.mouser.com>



### Specifications:

- Inductance: 1.4H ± 20% @ 1KHz 1Vrms
- DC resistance: 1-4: 285Ω ± 15% (pins 2-3 Shorted)
- Hi pot test: 1500VAC 1mA, for 1 min
- Insulation resistance: @ 500VDC, > 100MΩ
- Temp range: -20°C -80°C (ambient temp)

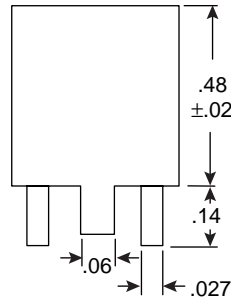
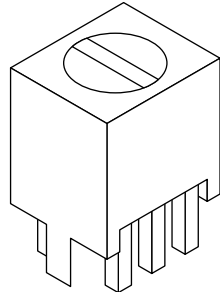
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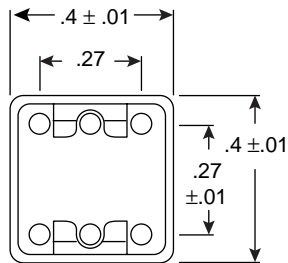
**Electrical Specifications:**

- Impedance variation: ±10% @ 1KHz
- DC Resistance tolerance: ±15%
- Insulation: >10MΩ @ 100VDC
- Core type / size: EI-14
- Breakdown voltage: 100VAC Hipot for 1 minute
- Waxing: Vacuum treatment can be water washed with water temperature less than 20°C
- Max output: 75mW
- Freq. response: ±3dB, 300Hz-3.5 KHz @ 1KHZ 0dB
- Can be water washed with water temperature less than 20°C

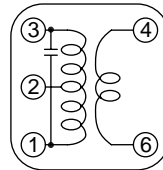
Mouser Stock No.	Impedance		Resistance	
	PRI	SEC	PRI	SEC
42XL001	8Ω	500Ω	1Ω	35Ω
42XL002	10KΩ	2KΩ	580Ω	200Ω
42XL003	1.2KΩ	8Ω	1Ω	80Ω
42XL009	500Ω	500Ω	38Ω	40Ω
42XL016	600Ω	600Ω	55Ω	65Ω
42XL031	600Ω	100Ω	74Ω	28Ω



Dimensions (In.)



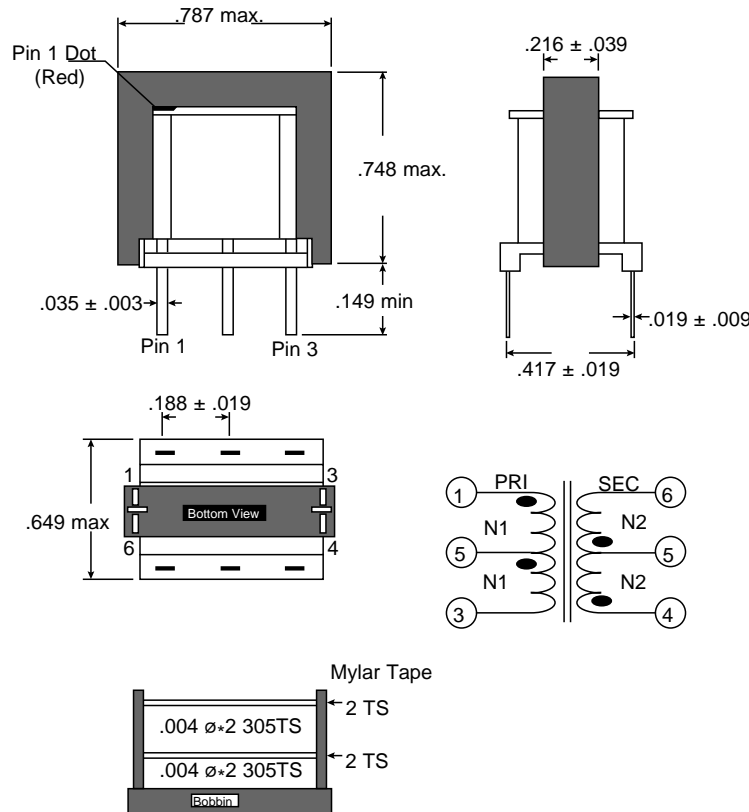
Schematic



**Specifications:**

- Type: Sub-miniature
- Mounting: PC

Mouser Stock No.	Application (Typical) (IF)	Impedance		Unload Q Value	Tuning Capacitance	Inductance	Turns			Cap Color
		Pri.	Sec.				(1-2)	(2-3)	(4-6)	
Center Frequency: 455KHz ±3%										
42IF101	1st	60KΩ	600Ω	80±20%	180PF+5pF (ext.)	680uH	70	87	7	Yel
42IF102	2nd	30KΩ	500Ω	80±20%	180PF+5pF (ext.)	680uH	98	57	7	White
42IF103	3rd	20KΩ	6KΩ	75±20%	180PF+5pF (ext.)	680uH	103	50	27	Black
Center Frequency: 10.7MHz ±3%										
42IF122	2nd & 3rd	15KΩ	300Ω	80 min.	47PF+5pF (ext.)	4.5uH	7	7	1	Brown
42IF123	1st	25KΩ	4KΩ	95±20%	47PF+5pF (ext.)	4.5uH	5	9	2	Green
42IF129	2nd & 3rd	15KΩ	100Ω	100±20%	30PF	7.4uH	12	6	1	Black



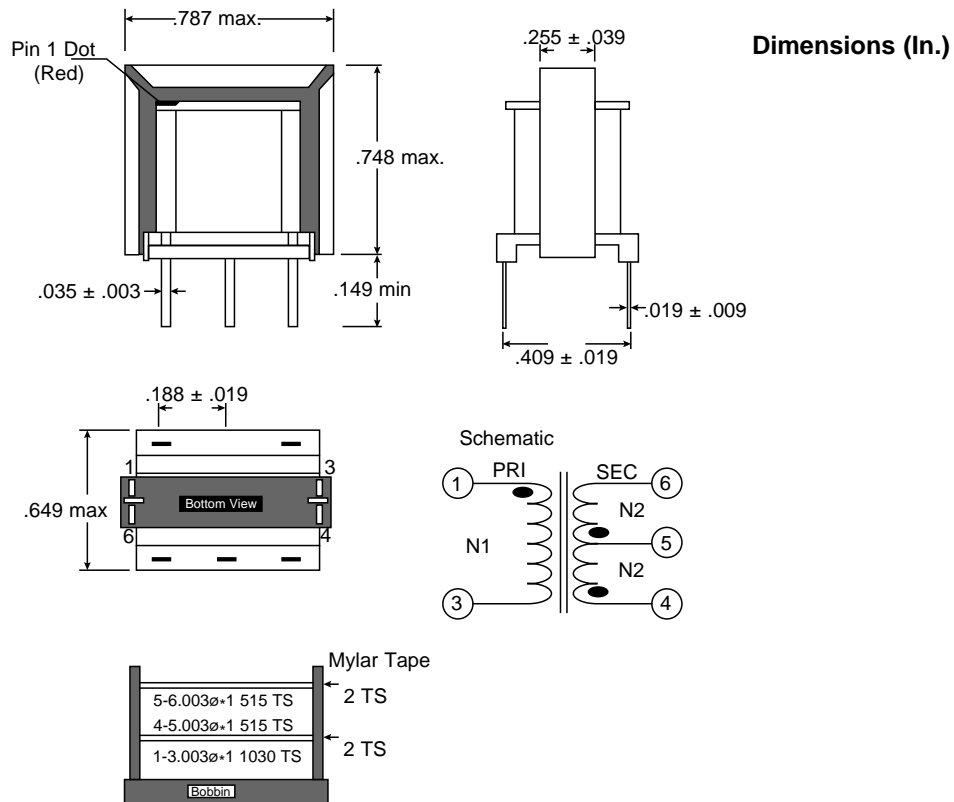
Dimensions (In.)

**Electrical Specifications:**

- Impedance primary: 600Ω  
Secondary: 600Ω load (±1%)
- Impedance variation: +/-10% 1KHz 0.25V series test
- DC resistance primary: 32Ω +/- 10%  
Secondary: 40Ω +/- 10%
- Insertion loss: 1.5 dB max. at 1000Hz
- Frequency response: ±0.5 dB @ 300-3500Hz; 1KHz 0 dB
- Turns ratio: 1:1, +/-3%
- Breakdown voltage: 1500VAC 60Hz HIPOT for 1 minute
- Insulation resistance: @500VDC > 100MΩ

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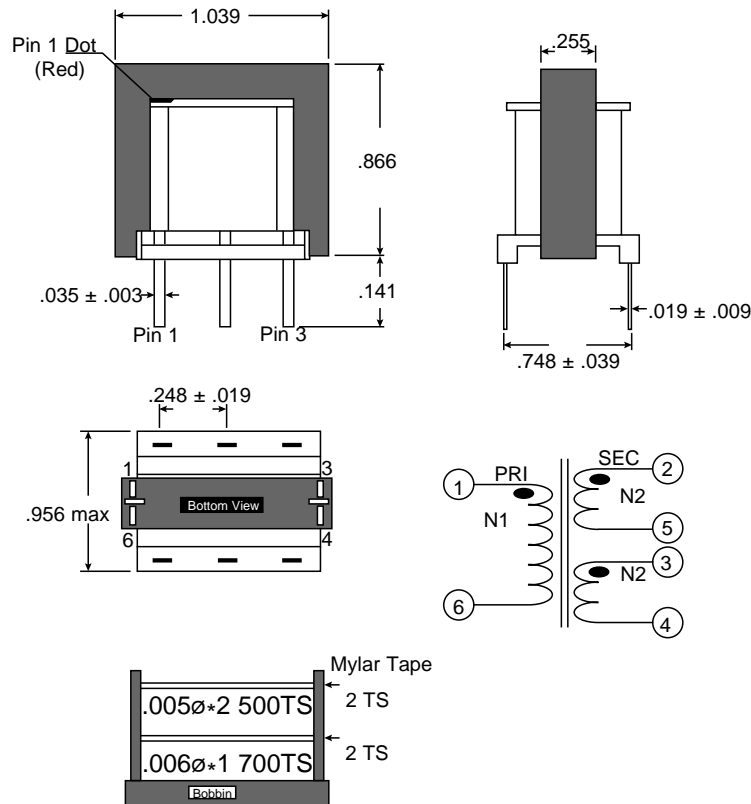




### Electrical Specifications:

- Impedance primary: 600Ω (at 90mA)  
Secondary: 600Ω load (±1%)
- Impedance variation: +/-10% 1KHz 1.0V series test
- DC resistance primary: 65Ω +/- 10%  
Secondary: 105Ω +/- 10%
- Insertion loss: 2.5 dB max. at 1KHz 1V OMA
- Frequency response: ±0.5 dB @ 600-3500Hz; 1KHz 0 dB
- Turns ratio: 1:1, +/-3%
- Breakdown voltage: 1500VAC 60Hz HIPOT for 1 minute
- Insulation resistance: >100MΩ @ 500VDC

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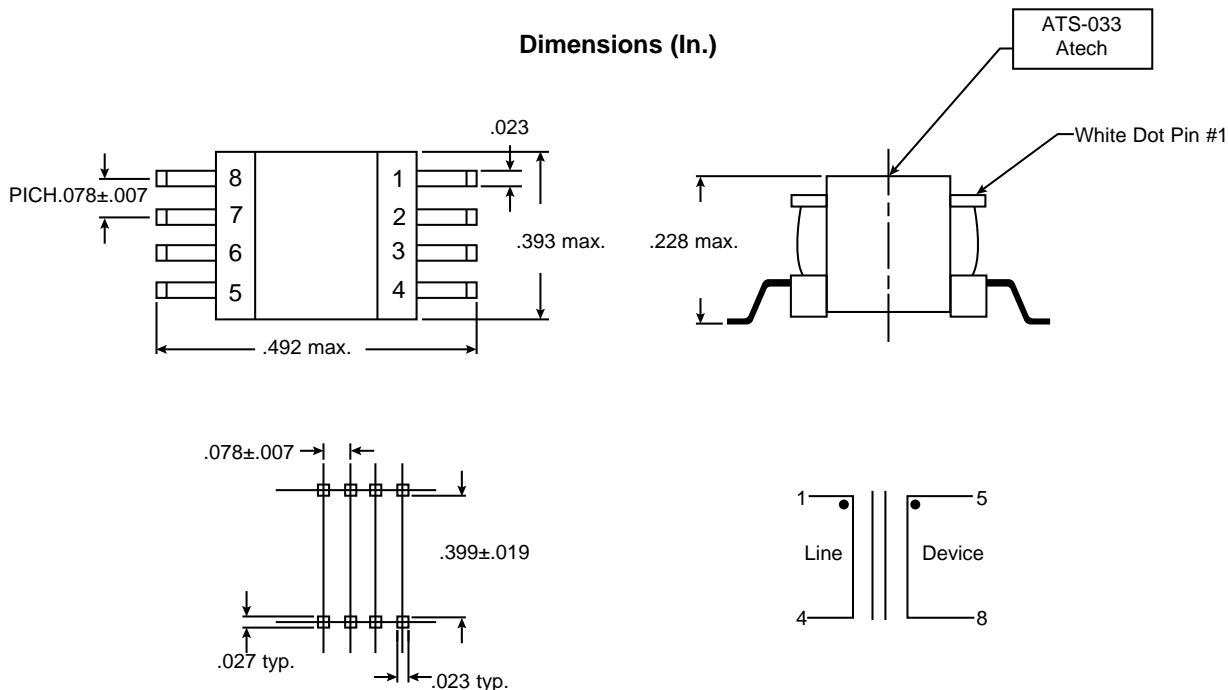
Dimensions (In.)

**Electrical Specifications:**

- Impedance primary: 600Ω  
Secondary: 1200Ω load
- Impedance variation: +/-10% 1KHz 0.25V series test
- DC resistance primary: 23Ω +/- 10%  
Secondary: 30Ω +/- 10%
- Insertion loss: 1.2 dB max. at 1000Hz
- Frequency response: ±0.5 dB @ 300-3500Hz; 1KHz 0 dB
- Breakdown voltage: 1500VAC 60Hz HIPOT for 1 minute
- Insulation resistance: >100MΩ @ 500VDC

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**Dimensions (In.)**



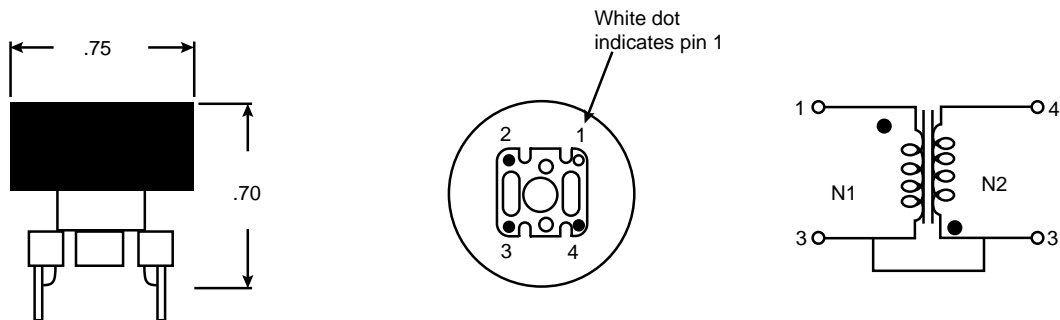
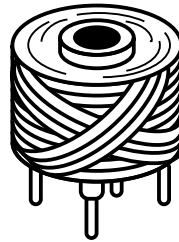
**Electrical Specifications: (671-8234 Compatible)**

1. DCR: Pin 1-4 =  $55\Omega \pm 10\%$   
Pin 5-8 =  $43\Omega \pm 10\%$
2. Inductance (@ 1KHz, 0.1 Vrms): Pin 1-4 = 320mH min.
3. Impedance (@ 1KHz, 1Vrms, Pin 5-8 W/H 600 $\Omega$  load):  
Pin 1-4 =  $600\Omega \pm 15\%$
4. Insertion loss (@ 1KHz, 1Vrms, Pin 5-8 w/h 600 $\Omega$  load) = 1db max.
5. Return loss (Pin 5-8 w/h 600 $\Omega$  load): @ 300Hz = 10db min. @ 1KHz = 15db min. @ 3400Hz = 18db min.
6. Hi-pot (@ 1500VAC, 1mA, 1 minute) Pin 1-5

**Material List:**

Item	Material	Source
Bobbin	LCP E5008	Sumitomo chemical E54705 (M)
Tape	-	Minnesota mining & MFG E17385 (N)
Wire	Polyurethane coated copper	Riken electric wire E79028(S)
Varnish	UEW-L V1630FS	Underwood Industries of New York E73071(M)

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**Specifications:**

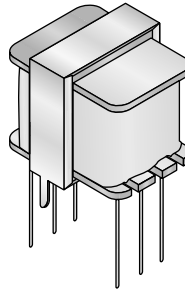
- DC resistance: AT 25°C  
R(N1): 0.16Ω max.  
R(N2): 420Ω±20%

**Material Specifications:**

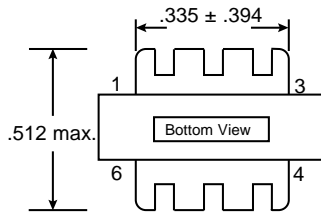
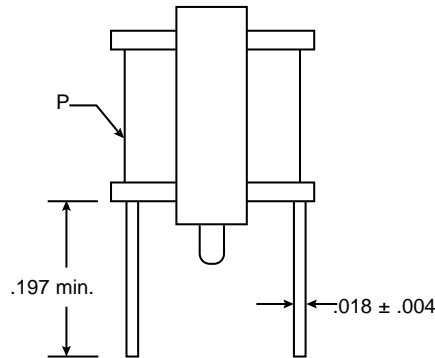
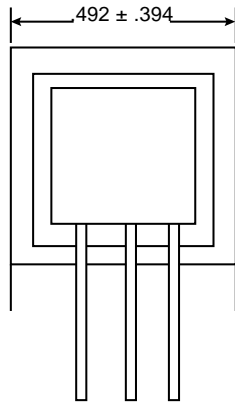
- Base: Phenolic molding powder T375J 94V-O E59481(S)
- Core: Ferrite core T2F R6x8 or equivalent
- Wire (N1): Polyurethane enameled copper wire; 0.23ø +NY 111/2 TS
- Wire (N2): Polyurethane enameled copper wire; USTC-0.06ø 1500Ts
- Insulation tape (between N1 and N2): polyester film insulating tape no. 500 E74186(S)
- Wax: Fully refined paraffin wax 135/140°F no. 1-624

Mouser Stock No.	Input Volts	Output Volts
42FM901	300	10000

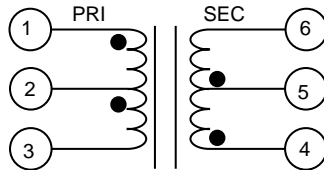
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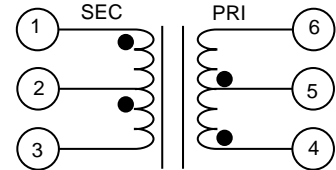
Dimensions (In.)



2. Schematic: A



2. Schematic: B

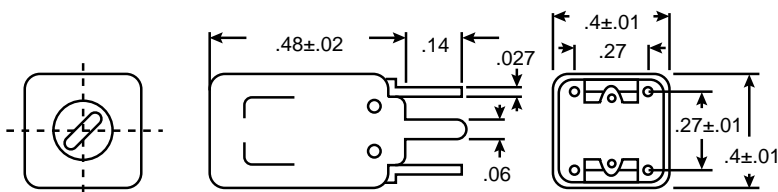
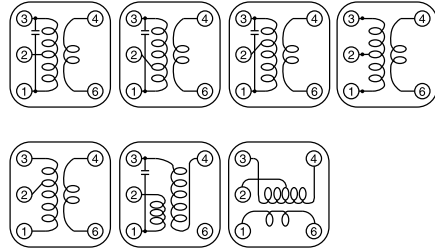
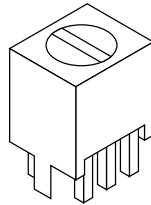


**Electrical Specifications:**

- Core type/size: EI-12
- Impedance variation:  $\pm 10\%$  @ 1KHz
- D.C. resistance:  $\pm 15\%$
- Insulation:  $>10M\Omega$  @ 100VDC
- Breakdown voltage: 100VAC HIPOT for 1 minute
- Max. output: 75mW
- Frequency response:  $\pm 3dB$ , 300-3.4KHz @ 1KHz OdB
- Waxing: Vacuum treatment
- Can be water washed with water temperature less than 20°C.

Mouser Stock No.	Schematic	Impedance		Resistance	
		PRI	SEC	PRI	SEC
42TC001	A	500 $\Omega$	8 $\Omega$	44 $\Omega$	1 $\Omega$
42TC013	A	1K $\Omega$	8 $\Omega$	55 $\Omega$	1 $\Omega$
42TC016	A	600 $\Omega$	600 $\Omega$	68 $\Omega$	55 $\Omega$
42TC019	B	10K $\Omega$	600 $\Omega$	375 $\Omega$	62.6 $\Omega$
42TC021	B	4.0K $\Omega$	600 $\Omega$	173 $\Omega$	45.5 $\Omega$
42TC030	B	100 $\Omega$	100 $\Omega$	9.12 $\Omega$	7.20 $\Omega$

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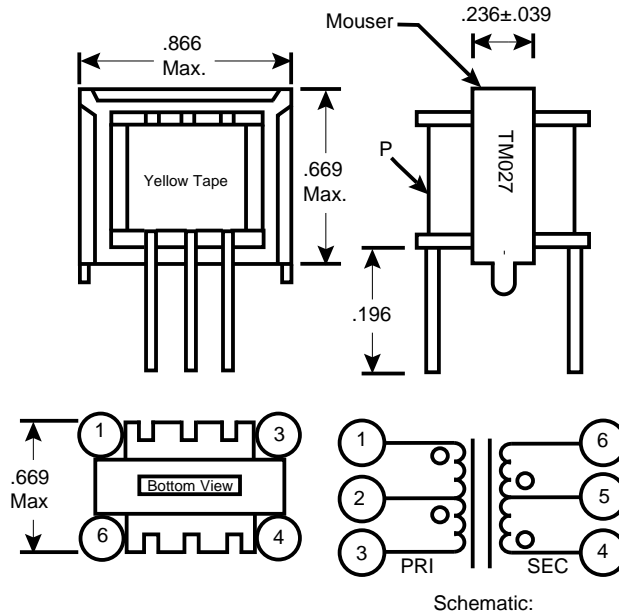


**Specifications:**

- Frequency: 455KHz ±3% variable
- Turns: 1-2: 82, 2-3: 74, 1-3: 156, 4-6: 7
- Q: 80±20%
- L (or C): 180pF (ext.)
- Impedance: Primary 50K, Secondary 500
- Cap color: Yellow
- Test voltage: 100VAC for 1 minute
- Insulation resistance: Over 100MΩ @ 100VDC

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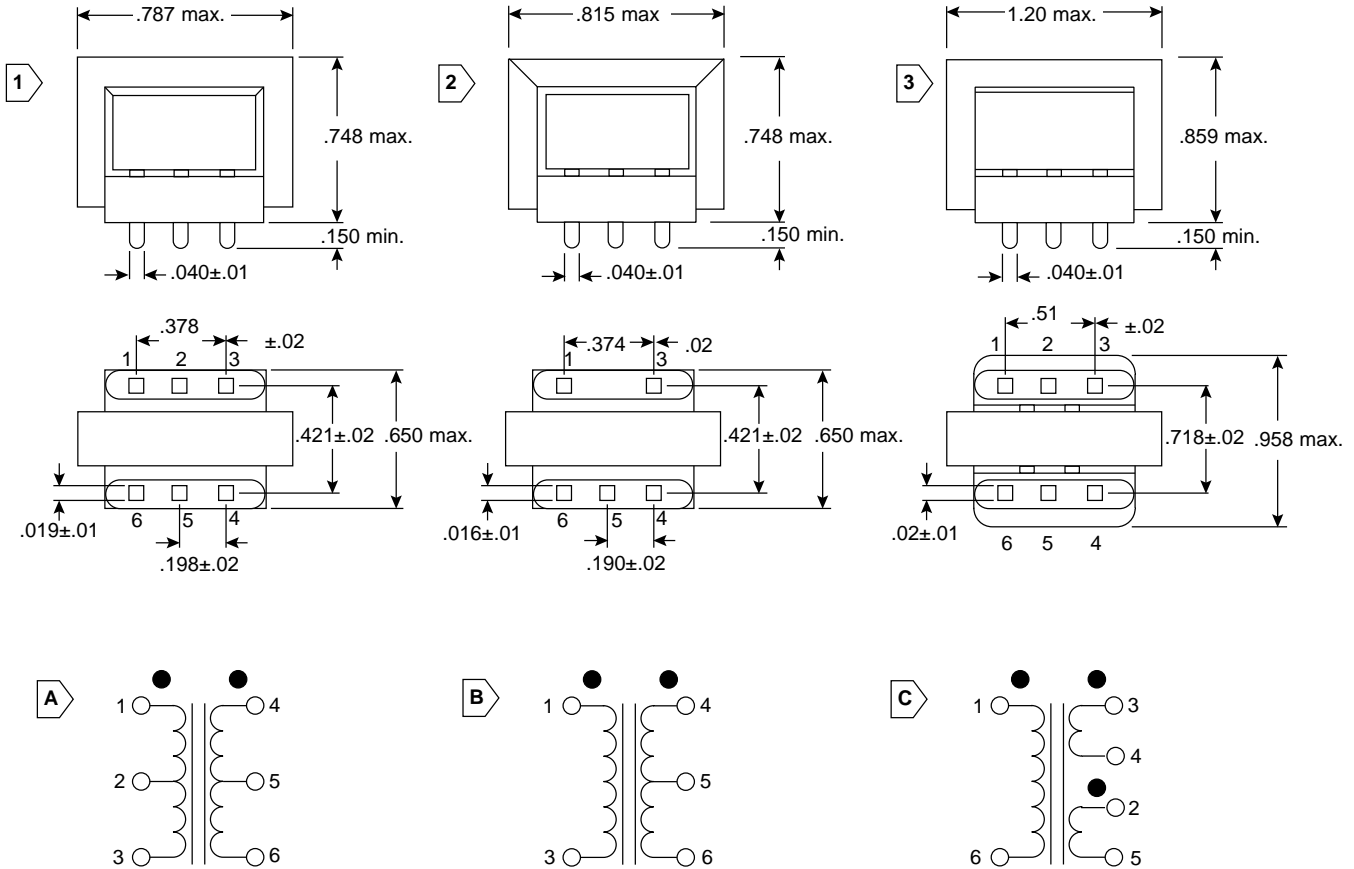
### Dimensions (In.)



### Specifications:

- Impedance ratio: PRI 1k $\Omega$  (CT) Sec 2k $\Omega$  (CT)
- Impedance variation:  $\pm 10\%$  @ 1KHZ 0.25V  
0.075 watt max output (core type E1-19)
- Primary wire: 0.08 $\phi$ x2 turns 360 ref
- Secondary wire: 0.09 $\phi$ x2 turns 500 ref
- DC resistance: primary: 85 $\Omega$   $\pm 15\%$   
secondary: 85 $\Omega$   $\pm 15\%$
- Frequency response: 3dB 300~3.4KHZ @ 1KHZ 0dB
- Insulation: more than 10M $\Omega$  VDC 100
- Break down: 100VAC hipot for 1 minute
- Waxing: vacuum treatment

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**Specifications:**

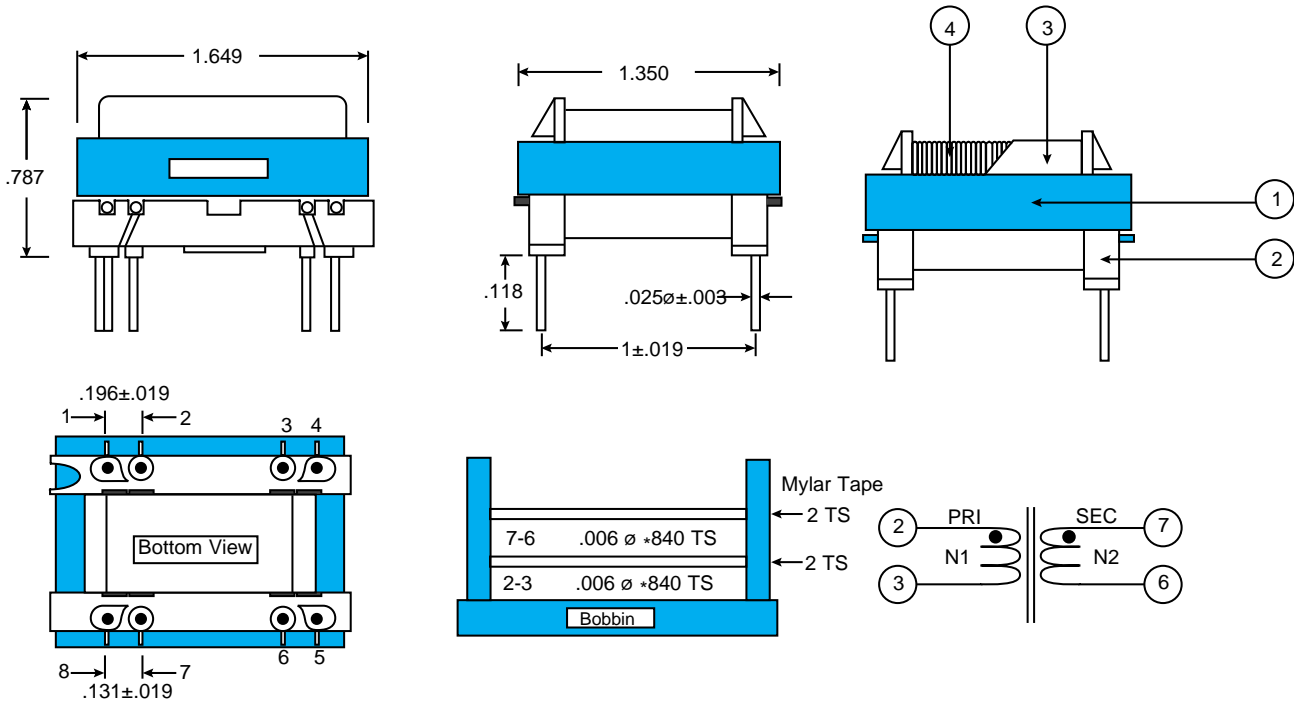
- Frequency response: 300 - 3500Hz
- Dielectric strength: 1500Vrms, 60Hz, 3mA, 60 sec. varnish impregnation

Mouser Stock No.	Fig.	Schematic	Impedance (Ω)		DC Resistance		I <sub>DC</sub> (mA)	Insertion Loss (max dB)
			Prim.	Sec.	Prim.	Sec.		
420-TT01	1	A	600CT	600CT	32Ω±10%	40Ω±10%	0	1.4
420-TT06	2	B	600	600CT	65Ω±10%	105Ω±10%	90	2.5
420-TT09	3	C	600	600/600	23Ω±10%	30Ω±10%	0	1.2
420-TT10	1	A	600CT	900CT	32Ω±10%	50Ω±10%	0	1.2

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**ELECTRICAL CHARACTERISTIC:**

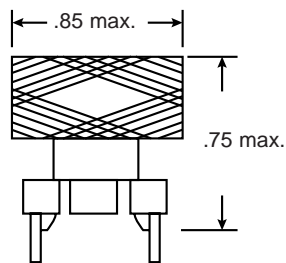
- Impedance: @ 1 KHz / 1 VRMS, 7-6: 600Ω (load), 2-3: 600Ω ± 10% (at 80 mA)
- DC resistance: 2-3: 35Ω±20%, 7-6: 41.5Ω±20%
- Insertion loss: 2.5 dB max (at 1 KHz / 1 VRMS)
- Frequency response: (1 KHz / 1 V 0dB) ±0.5dB (at 300Hz / 1 VRMS) ±0.5 dB (At 3.5 KHz / 1 VRMS)
- Hi pot test: Primary to secondary: 1000VAC 3 ma, for one minute  
 Primary to core: 500VAC 3mA, for one minute  
 Secondary to core: 500VAC 3mA, for one minute
- Insulation resistance: The insulating resistance between coil to coil and coil to core measured by 100VDC insulation resistance meter should be over100MΩ
- Temp. range: -20°C to 80°C (ambient temp)

No.	Name	Material	Rating
1	Core	Silicon Steel EI-41 Z11	
2	Bobbin	Nylon Bobbin A226	120°C
3	Tape	Mylar tape (#35660) (#1350)	130°C
4	Wire	Polyurethane enameled copper wire (2VEW)	130°C
5	Varnish	BC-346A	200°C

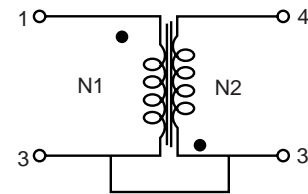
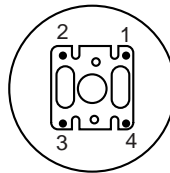
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### Dimensions (In.)



White Dot indicates  
Pin 1



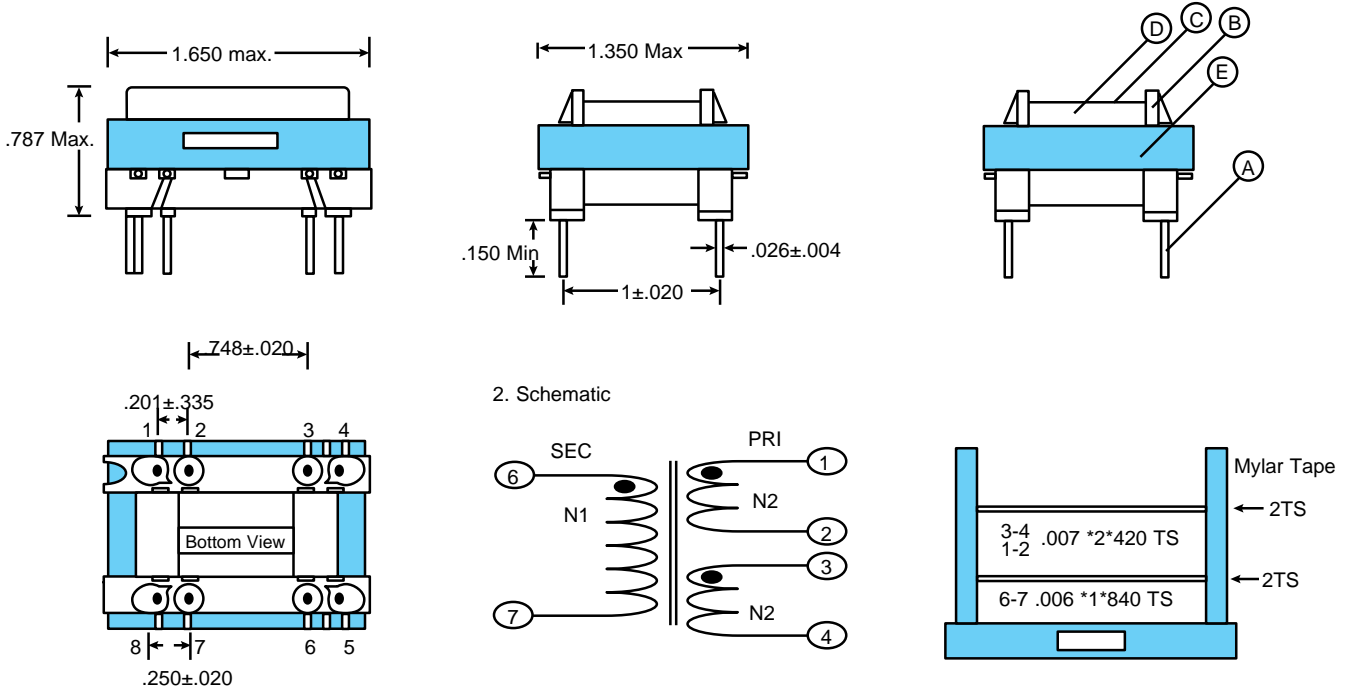
### Electrical Specifications:

- Input: 300 volts
- Output: 10000 volts
- R (N1): 0.16 $\Omega$  max. (Chen HWA 301A)
- R (N2): 420 $\Omega$ ±20% (Chen HWA301A)
- L: (1- 2) 3-4 IVC ±20% 1KHz 0.3V (Chen HWA 102)
- L: (4 -3) 28 IVC ±20% 1KHz 0.3V (Chen HWA 102)

### Material Specifications:

1. Wire: (N1): Polyurethane enameled copper; 0.23 m/m (2UEW) 11 1/4 TS
2. Wire : (N2): Polyurethane enameled copper wire; 0.06 m/m (USTC) 1500TS
3. Bobbin: Phenolic molding powder T375J 94V-0 E59481 (S)
5. Core: Ferrite core T2F TH6x8 or Equivalent
6. Insulating tape: Polyester film insulating tape no. 500 E74186 (S)
7. Wax: Fully refined paraffin wax 135/140 F

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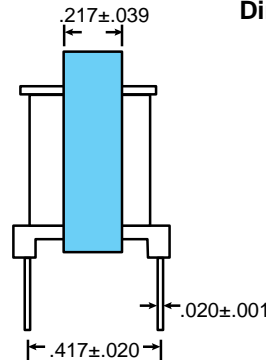
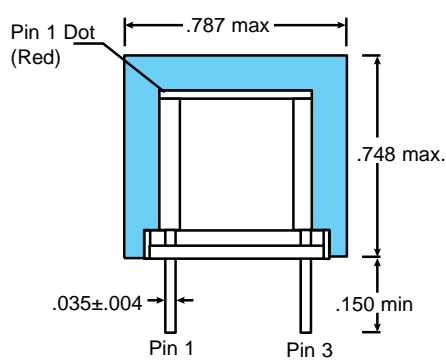
**Electrical Specification:**

- Requirement ration: 1KHz 1V series test
- Impedance: 1-4: 600Ω (load) (Pin 2, 3 shorted)  
6-7: 600Ω ±10% (@ 75mA/DC)
- DC resistance: 1-2: 19.5Ω ±20%  
3-4: 19.5Ω ±20%  
6-7: 33.0Ω ±20%
- Turns: (primary : secondary : secondary): 1 : 1, ±3%
- Breakdown voltage: 100VAC 60Hz Hi-pot for one minute is croscover between primary to secondary.  
100VAC 60Hz is winding to core
- Insulation resistance: The insulation resistance between winding to winding and winding to core measured by 100VDC insulation resistance meter should be over 100MΩ.

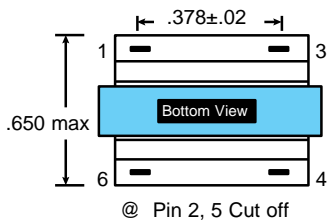
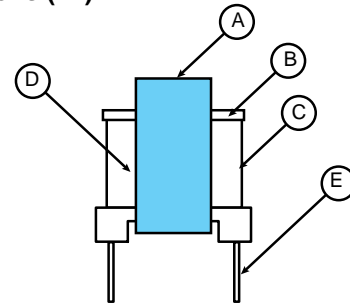
MO	Name	Material	Rating	Source
A	Core	Silicon Steel EI-41		Bnterpidrvo Co., LTD
B	Bobbin	Nylon bobbin E108944(M)A226	105°C	Imperial Chemical Industries PLC Maranyl
C	Tape	Mylar tape E50292(S)	130°C	Four Pillar Enterprise Co., LTD
D	Wire	Polyurethane enameled copper wire E84081(S)	130°C	Pacific Electric Wire & Cable Co., LTD
E	Terminal Varnish	Tin coated copper wire BC-346A E51047(M)	130°C 200°C	Pacific Electric Wire & Cable Co., LTD John C Dolph Company

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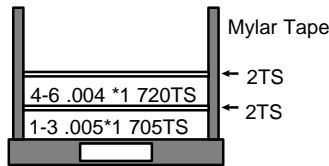
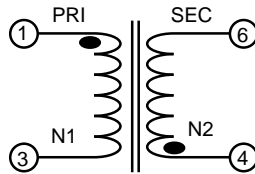
1. Outline Size:



Dimensions (In.)



2. Schematic



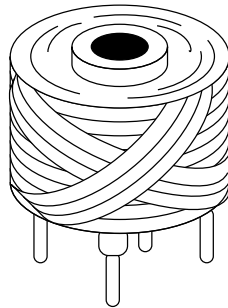
**Electrical Specifications:**

- Impedance primary: 600Ω  
secondary: 900Ω Load (±1%)
- Impedance variation: ±10% 1KHz 1.0V series test
- DC resistance primary: 32Ω±10%  
secondary: 50Ω±10%
- Insertion loss: 1.5dB max. @ 1000Hz
- Frequency response: ±0.5dB @ 300-3500Hz; 1KHz 0dB
- Turns (primary : secondary): 1 : 1.02, ±3%
- Breakdown voltage: 1500VAC 60Hz hi-pot for one minute is crossover between primary to secondary (3mA) 1500VAC 60Hz is winding to core (3mA)
- Insulation resistance: The insulation resistance between winding to winding and winding to core measured by 500VDC insulation resistance meter should be over 100MΩ
- Wire: primary: 0.005  
secondary: 0.004
- Turns: primary: 705 TS (REF)  
secondary: 720 TS (REF)

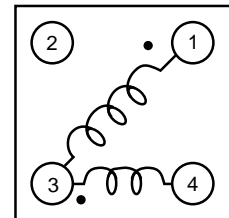
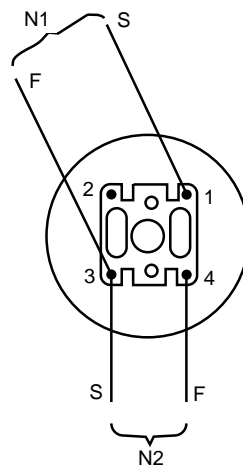
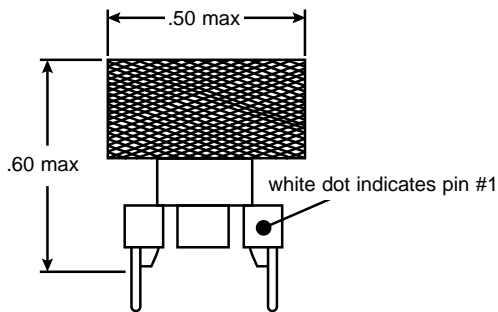
MO	Name	Material	Rating	Source
A	Core	Silicon Steel EI-19 Z11 0.35		Bnterpidrvo Co., LTD.
B	Bobbin	Nylon Bobbin E108944(M)A226	105°C	Imperial Chemical Industries PLC Maranyl
C	Tape	Mylar Tape E50292(S)	130°C	Four Pillars Enterprise Co., LTD
D	Wire	Polyurethane Enameled copper wire E84081(S)	130°C	Pacific Electric Wire & Cable Co., LTD
E	Terminal Varnish	Tin coated copper wire BC-346A E51047(M)	200°C	Pacific Electric Wire & Cable Co., LTD John C Dolph Company

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**Dimensions (In.)**



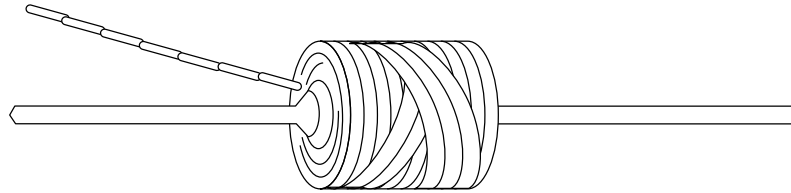
• Start

**Electrical Specifications:**

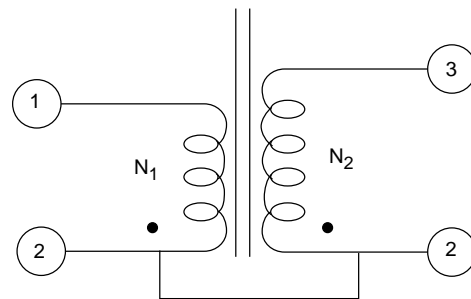
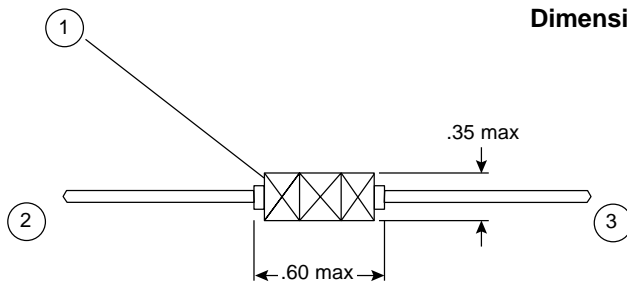
- Input volts: 300
- Output volts: 4000
- DCR (N2): 160mΩ
- DCR (N2): 115Ω max
- Wire (N1): polyurethane enameled copper wire; .25 m/m (2UEW) 11 1/2 TS
- Wire (N2): polyurethane enameled copper wire; .06 m/m (USTC) 500TS
- Bobbin: phenolic molding powder 7 m/m (S2)
- Core: ferrite core T2F TH3.6x8 or equivalent
- Insulating tape: polyester film insulating tape no. 500 E74186(S)
- Wax: fully refined paraffin wax 135/140 F

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Dimensions (In.)



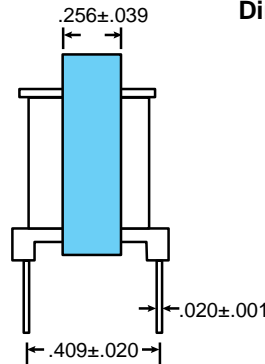
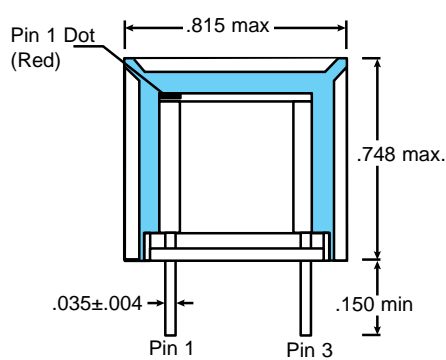
**Electrical Specifications:**

- Input voltage: 300
- Output voltage: 4000
- DCR (N1): 160mΩ max.
- DCR (N2): 115Ω max.
- Wire (N1): polyurethane enameled copper wire; .23 m/m (2UEW) 11 1/2 TS
- Wire (N2): polyurethane enameled copper wire; .06 m/m (USTC) 500TS
- Core: ferrite core GC1 DRWW 3x12
- Insulating tape: polyester film insulating tape no. 500 E74185(S)
- Wax: fully refined paraffin wax 135/140 F

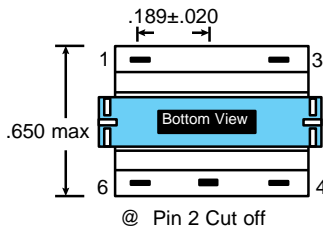
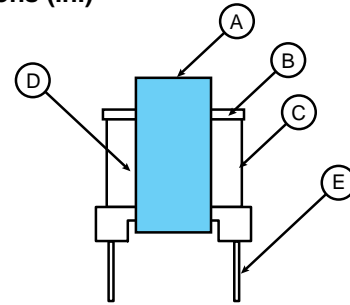
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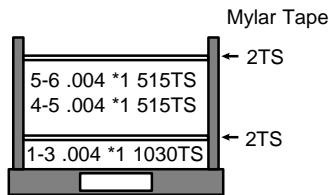
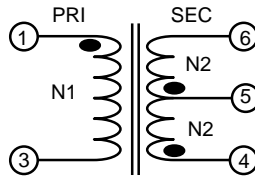
1. Outline Size:



Dimensions (In.)



2. Schematic



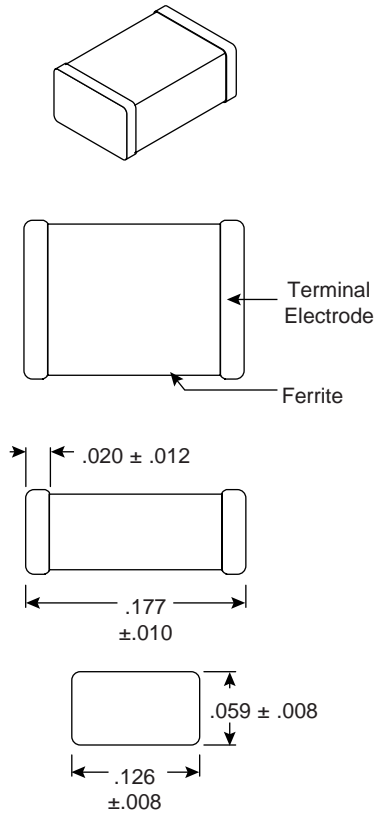
**Electrical Specifications:**

- Impedance primary: 600Ω @ 90mA  
secondary: 600Ω Load (±1%)
- Impedance variation: ±10% 1KHz 1.0V series test
- DC resistance primary: 65Ω±10%  
secondary: 105Ω±10%
- Insertion loss: 2.5dB max. @ 1KHz 1V 0Ma
- Frequency response: ±0.5dB @ 600-3500Hz; 1KHz 0dB
- Turns (primary : secondary): 1 : 1, ±3%
- Breakdown voltage: 1500VAC 60Hz hi-pot for one minute is crossover between primary to secondary (3mA)  
1000VAC 60Hz is winding to core (3mA)
- Insulation resistance: The insulation resistance between winding to winding and winding to core measured by 500VDC insulation resistance meter should be over 100MΩ
- Wire: primary: .0039ø \*1  
secondary: .0035ø \*1
- Turns: primary: 1030 TS (REF)  
secondary: 515 TS + 515 TS

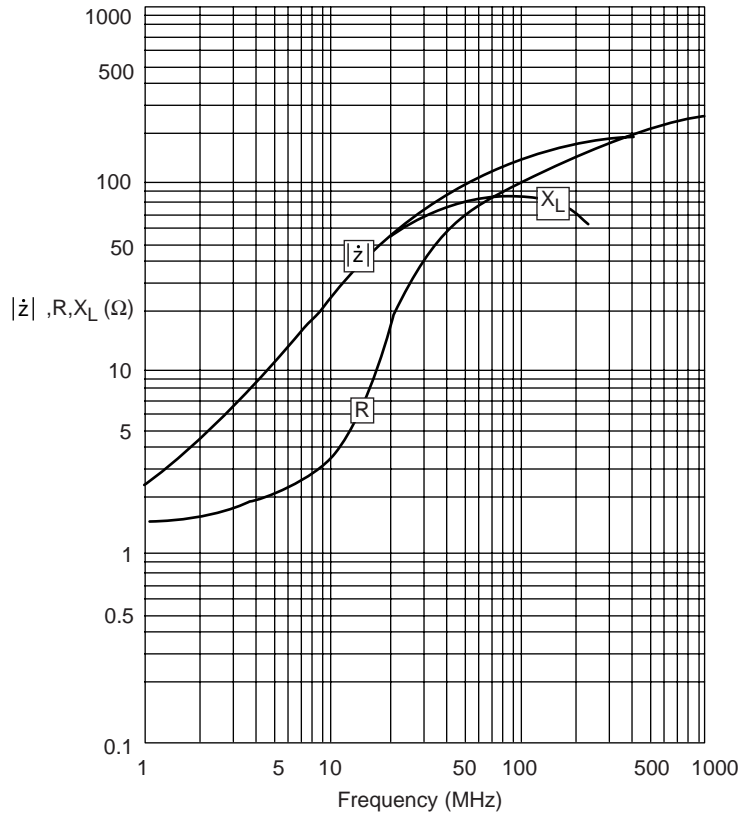
MO	Name	Material	Rating	Source
A	Core	Silicon Steel EI-19 Z11 0.35ø		Bnterpidrvo Co. , LTD
B	Bobbin	Nylon Bobbin E108944(M)A226	105°C	Imperial Chemical Industries PLC Maranyl
C	Tape	Mylar Tape E50292(S)	130°C	Four Pillars Enterprise Co. LTD
D	Wire	Polyurethane Enameled copper wire E84081(S)	130°C	Pacific Electric Wire & Cable Co. , LTD
E	Terminal Varnish	Tin coated copper wire BC-346A E51047(M)	200°C	Pacific Electric Wire & Cable Co., LTD John C Dolph Company

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Typical Electrical Characteristic Curve



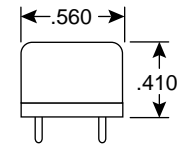
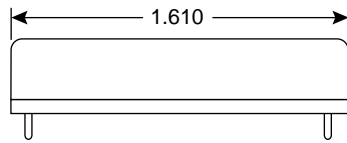
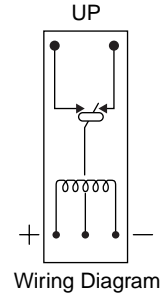
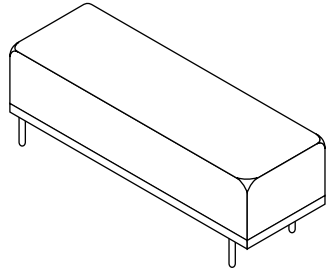
### Dimensions (In.)

#### Specifications:

- Impedance:  $120\Omega \pm 25\%$  @ 100MHz
- DC resistance:  $0.40\Omega$  max.
- Rated current: 300mA (max.)
- Operating temperature:  $-25^\circ\text{C} \sim 85^\circ\text{C}$
- Storage temperature:  $-40^\circ\text{C} \sim 85^\circ\text{C}$

Ferrite Chip Beads provide an effective means of EMI/RFI attenuation for electronic equipment. These items are specially designed for flow, reflow, and wave soldering applications.





Dimensions (In.)

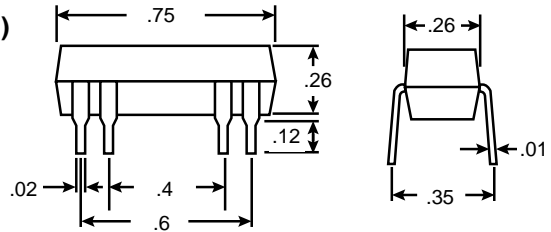
**Specifications:**

- Type: mercury-wetted reed
- Circuit: 1 form C SPDT
- Injection molded
- Magnetic cap protected
- Vertical operation:  $\pm 30^\circ$
- Pin: compatible with Clare #HGJM relay
- Switchable power: 100W max.
- Switchable current: 2mA
- Switchable volts: 500VDC
- Holding voltage: 2000VRMS
- Initial contact resistance: 30m $\Omega$  max.
- Isolation resistance: 10 $^9\Omega$  min.
- Operating time: 3ms
- Release time: 3ms
- Max. bounce time: do not bounce when closing
- Operating frequency: 125Hz max.
- Capacitance between blades (typ.1Khz): 2pF
- Shock (11mS): 30g
- Vibration (10 ~ 500Hz): 10g
- Operating temperature: -35 $^\circ$  ~ +100 $^\circ$ C

• DC Voltage

Mouser Stock No.	Nominal Voltage	Coil Resistance (at 20 $^\circ$ C) $\Omega$	Must Operate Voltage (at 20 $^\circ$ C)	Must Release Voltage (at 20 $^\circ$ C)	Maximum Voltage	Nominal Power mW
433-RO861	5	335	2.8	0.4	10	75
433-RO760	12	680	5.7	1	18	215
433-RO761	24	2650	13	2	30	215

**Dimensions (In.)**



**Electrical Specifications (at 20°C):**

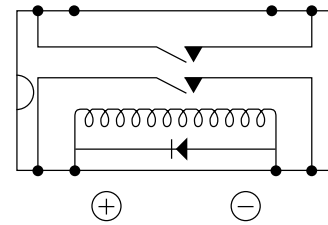
- Contact rating: Max. switchable power 3VA  
max. switchable voltage 100Vdc  
max. switchable current 250mA  
max. carry current (non switching) 400mA
- Initial contact resistance: 150mΩ
- Hold-off voltage: With contact open 100Vrms  
between coil and contact 1000Vrms  
between coil and casing - Vrms  
between coil and shield 500Vrms  
between contact and casing - Vrms
- Insulation resistance: Between contact blades 10<sup>9</sup>Ω  
between coil and contact 10<sup>11</sup>Ω  
between contact and other - Ω
- Switching time (max.) (at nominal control voltage): Excluding bounce 0.5ms  
Including bounce 2ms
- Drop-out time (max.): without suppressor diode 2000μs  
with suppressor diode 3000μs
- Max. operating frequency (without suppressor diode): 150Hz

**Mechanical Specifications:**

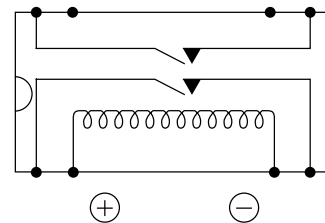
- Resistance to shock (survival): 1ms 500g  
11ms 100g
- Vibration resistance: Vibrations X,Y, Z (sinus) (from 30 to 4000Hz) 30g
- Operating temperature: 40a +85°C
- Storage temperature: -60a +105°C
- Construction (technology): Epoxy molded
- Output point dimensions: mm
- Layout: Dual in line
- Operating position: indifferent
- Electrical / Mechanical Life: More than 50 million operations

**Cross Reference:**

- Clare PRM Series
- Electrol RA Series
- Douglas Randall 5 DIP Series
- Struthers-Dunn MRR Series
- Hamlin 700 Series
- Gordos 83 Series
- TTL Compatible
- Designed to meet MILS 554-433A-MIL R 5757F



433-D32A211  
433-D32A511



433-D32A210  
433-D32A510

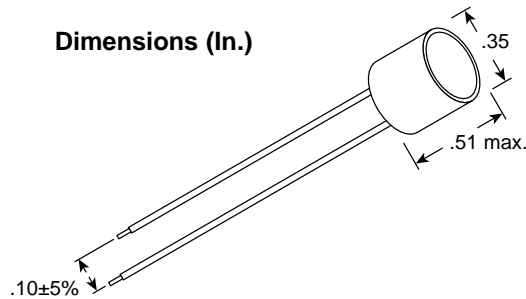
Mouser Stock No.	Nominal Voltage (VDC)	Coil Resistance (Ω)	Pull In Voltage (VDC)	Drop Out Voltage (VDC)	Max. Voltage (VDC)	Nominal Power (mW)	Diode Across Relay
433-D32A210	5	125	3.7	0.8	9	200	No
433-D32A211	12	500	9.6	2.0	18	288	No
433-D32A510	5	125	3.7	0.8	9	200	Yes
433-D32A511	12	500	9.6	2.0	18	288	Yes

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<http://www.mouser.com>

Dimensions (In.)



Miniature fixed inductor wound on a ferrite core and resin encapsulated into a molded plastic case. They exhibit excellent moisture resistance, and vibration endurance.

**Specifications:**

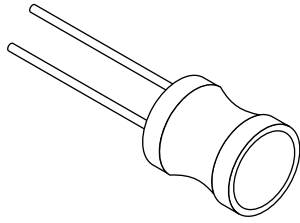
- Temperature: -25°C to +85°C
- Encapsulated
- Ferrite

Mouser Stock No.	Inductance		Tolerance	Q min.	Res. Freq. (MHz)	Test Freq. (KHz)	Current DC MA Max.	D.C. Res. Max.
	IN uH	IN mH						
ME434-1120-220L	22	.022	15%	30	11.0	2520	600	0.3
ME434-1120-330L	33	.033	15%	30	9.7	2520	500	0.35
ME434-1120-680L	68	.068	15%	30	7.1	2520	378	0.6
ME434-1120-101L	100	.100	15%	50	5.9	796	300	1.0
ME434-1120-151L	150	.150	15%	50	5.0	796	300	1.3
ME434-1120-221L	220	.220	15%	50	4.1	796	200	2.0
ME434-1120-331L	330	.330	15%	50	3.3	796	150	2.8
ME434-1120-561L	560	.560	15%	50	2.6	796	150	4.0
ME434-1120-103K	1000	1.000	10%	80	1.8	252	100	5.5
ME434-1120-123K	1200	1.200	10%	80	1.6	252	100	6.0
ME434-1120-153K	1500	1.500	10%	80	1.45	252	100	7.0
ME434-1120-223K	2200	2.200	10%	80	1.1	252	100	9.0
ME434-1120-393K	3900	3.900	10%	80	0.74	252	87	15.0
ME434-1120-473K	4700	4.700	10%	80	0.63	252	80	20.0
ME434-1120-104K	10000	10.000	10%	80	0.21	79.6	58	40.0
ME434-1120-124K	12000	12.000	10%	80	0.11	79.6	50	45.0

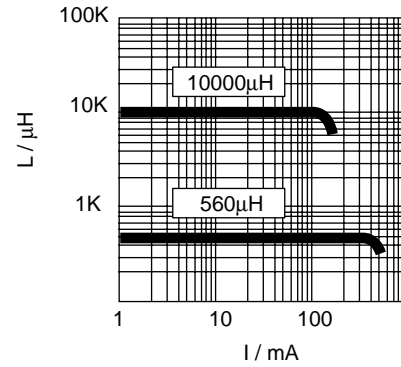
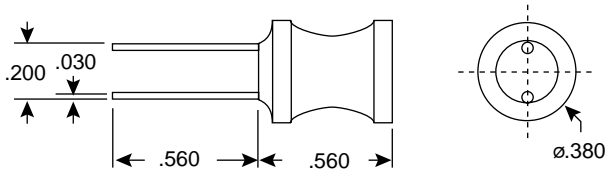
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<http://www.mouser.com>



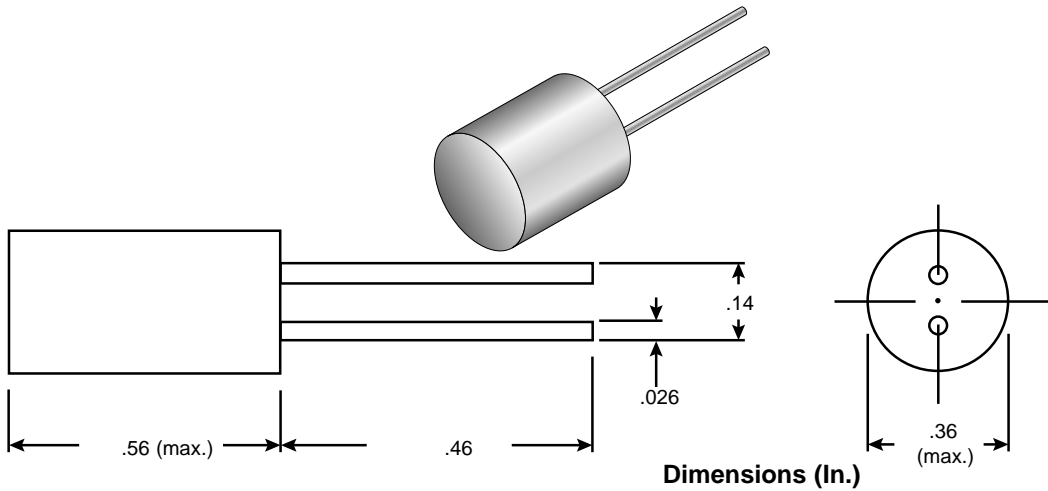
Dimensions (In.)



**Specifications:**

- Core material: ferrite
- Inductive tolerance: ±5%
- Inductance: 20KHz
- Operating temp: IEC climate category 55/85/56 (-55°C~85°C)

Mouser Stock No.	L (µH)	Q Min.	fQ (MHz)	SRF Min. (MHz)	DCR Max. (Ω)	Max. DC Current (mA)
434-01-101J	100	40	0.796	5.9	1.0	500
434-01-151J	150	40	0.796	5.0	1.3	500
434-01-221J	220	40	0.796	4.1	2.0	500
434-01-331J	330	35	0.796	2.7	1.0	500
434-01-391J	390	35	0.796	2.5	1.1	460
434-01-471J	470	35	0.796	2.3	1.3	420
434-01-561J	560	35	0.796	2.0	1.5	400
434-01-681J	680	35	0.796	1.9	1.9	350
434-01-821J	820	35	0.796	1.7	2.2	310
434-01-102J	1000	70	0.252	1.6	2.6	280
434-01-122J	1200	70	0.252	1.4	3.0	250
434-01-152J	1500	70	0.252	1.2	5.1	220
434-01-182J	1800	70	0.252	1.1	5.6	200
434-01-222J	2200	70	0.252	1.0	7.0	180
434-01-272J	2700	70	0.252	.9	8.0	170
434-01-332J	3300	70	0.252	.80	9.0	150
434-01-392J	3900	70	0.252	.75	10.0	140
434-01-472J	4700	70	0.252	.65	11.5	130
434-01-562J	5600	70	0.252	.63	15.0	120
434-01-682J	6800	70	0.252	.57	17.0	110
434-01-822J	8200	70	0.252	.50	20.0	100
434-01-103J	10000	70	0.079	.410	35.0	90
434-01-123J	12000	70	0.079	.380	40.0	80
434-01-153J	15000	70	0.079	.350	45.0	70
434-01-183J	18000	70	0.079	.340	50.0	65
434-01-223J	22000	70	0.079	.300	58.0	60
434-01-273J	27000	70	0.079	.290	70.0	55
434-01-333J	33000	70	0.079	.260	75.0	50

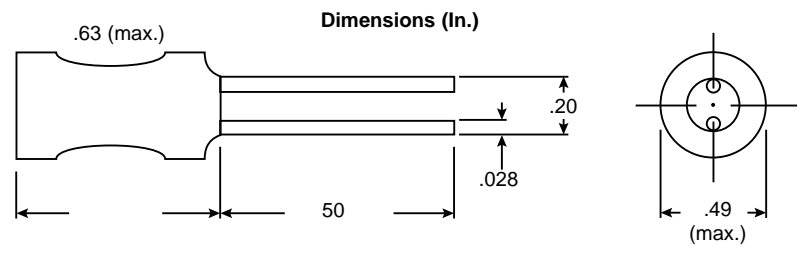
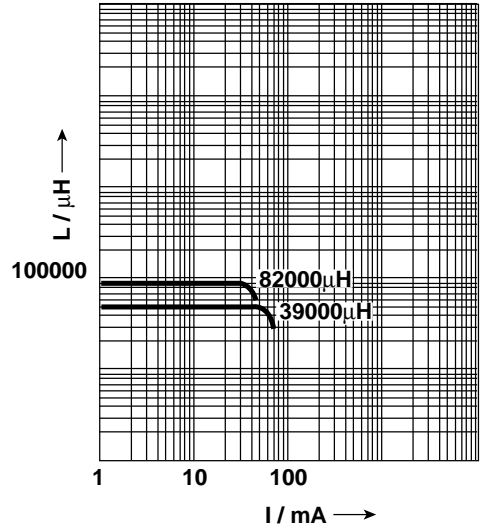
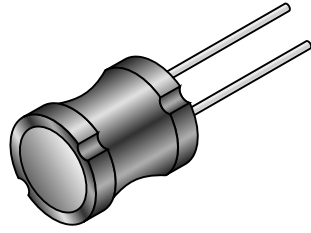


**Specifications:**

- Inductance value: Measured at 20 kHz, 25°C
- Inductance tolerance:  $\pm 5\%$
- Insulation strength: 2.5KV
- Operating temperature:  $-25^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$   $\Delta L/L$  (25C)  $< 10\%$
- Moisture resistance:  $\Delta L/L < \pm 5\%$ ,  $\Delta Q/Q < \pm 10\%$  when subjected to 96 hrs. at  $40^{\circ}\text{C}$  and 95% R.H. and dried in air for one hour.

MOUSER STOCK NO.	L ( $\mu\text{H}$ )	Q Min.	Test Freq. (KHz)	SRF Min. (MHz)	DCR Max. ( $\Omega$ )	Max. DC Current (mA)
434-02-102J	1,000	70	796	2.04	3.4	90
434-02-122J	1,200	70	252	1.80	3.7	75
434-02-152J	1,500	70	252	1.35	4.0	70
434-02-182J	1,800	70	252	1.15	4.5	65
434-02-222J	2,200	70	252	1.45	5.2	60
434-02-272J	2,700	70	252	1.00	5.8	55
434-02-332J	3,300	100	252	1.10	6.1	50
434-02-392J	3,900	100	252	.99	7.2	45
434-02-472J	4,700	100	252	.87	7.5	40
434-02-562J	5,600	100	252	.75	8.4	40
434-02-682J	6,800	100	252	.60	9.7	35
434-02-822J	8,200	100	252	.45	10.4	30
434-02-103J	10,000	100	252	.70	12.1	25
434-02-123J	12,000	100	79	.45	13.0	25
434-02-153J	15,000	100	79	.40	15.0	25
434-02-183J	18,000	100	79	.525	17.0	22
434-02-223J	22,000	100	79	.46	19.5	21
434-02-273J	27,000	100	79	.40	22.0	18
434-02-333J	33,000	100	79	.350	26.0	17
434-02-393J	39,000	100	79	.35	45.0	15
434-02-473J	47,000	100	79	.30	52.0	13
434-02-563J	56,000	100	79	.25	58.0	12
434-02-683J	68,000	100	79	.22	66.0	12
434-02-823J	82,000	100	79	.20	71.0	10

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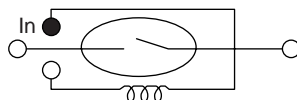
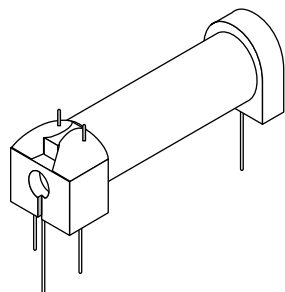


**Specifications:**

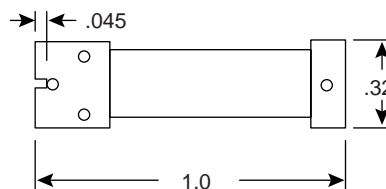
- Core material: ferrite
- Inductance measured @ 20KHz
- Inductive tolerance: ±5%
- Q min.: 50

MOUSER STOCK NO.	L (μH)	fQ KHz	SRF Min. (MHz)	DCR Max. (Ω)	Max. DC Current (mA)
434-03-103J	10000	79	0.35	23	110
434-03-123J	12000	79	0.32	24	100
434-03-153J	15000	79	0.29	28	90
434-03-183J	18000	79	0.28	34	85
434-03-223J	22000	79	0.25	39	80
434-03-273J	27000	79	0.21	48	70
434-03-333J	33000	79	0.20	56	65
434-03-393J	39000	79	0.19	62	60
434-03-473J	47000	79	0.18	73	55
434-03-563J	56000	79	0.14	115	50
434-03-683J	68000	79	0.13	120	50
434-03-823J	82000	79	0.12	150	45
434-03-104J	100000	25	0.11	155	40
434-03-154J	150000	25	0.08	205	35

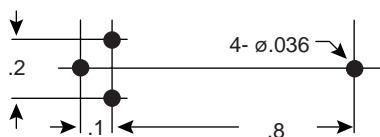
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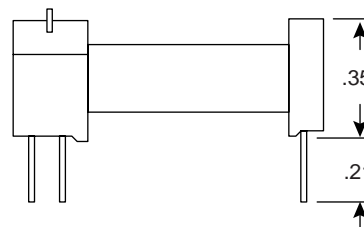
Circuit Diagram



**Dimensions (In.)**



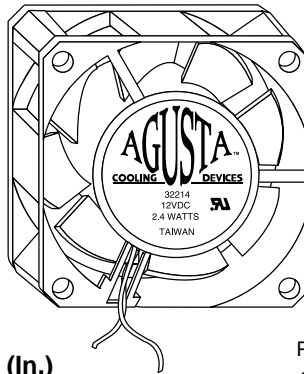
Mounting Holes



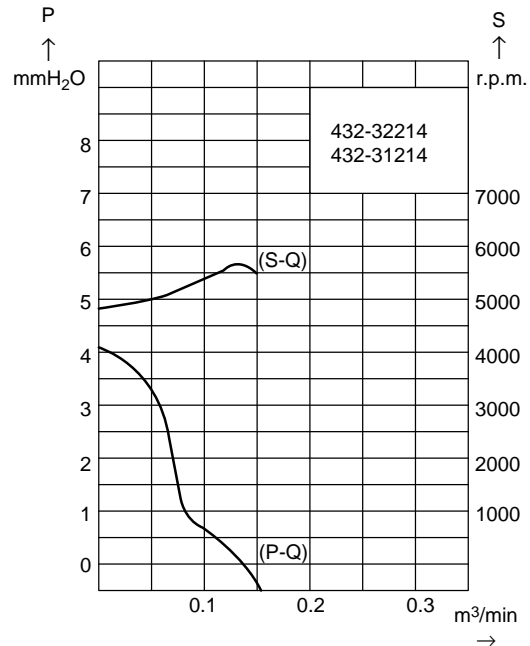
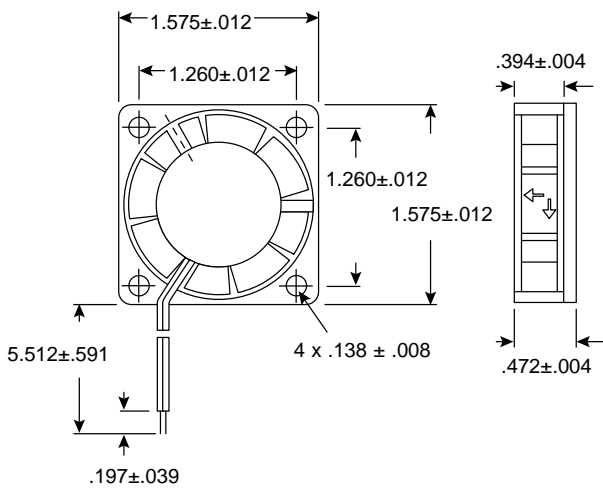
Mouser Stock No.	Rated Voltage	Rated Current	Coil Resistance ( $\Omega$ ) + 10%	Pull In Voltage (V)	Drop Out Voltage (V)	Max. Coil Voltage (V)
431-1405	5VDC	20mA	250	70% of Rated	10% of Rated	160% of Rated
431-1412	12VDC	11.4mA	1050			

**Specifications:**

- Type: PC mount, 1 Form A SPST contacts normally open
- Carry current: 0.5A
- Contact resistance: 150m $\Omega$  max. @ 100mA
- Contact capacity: 10W max., 10VA
- Contact rating voltage: 100VAC max.
- Coil temperature rise: 30°C max.
- Temperature range: -30°C ~ +60°C
- Maximum operating voltage: 120VAC, 60VDC
- Dielectric strength: 3000VAC for 1 second between coil & contacts, 200VDC for 1 minute between contacts
- Operate time: 1.0mS max.
- Release time: 0.5mS max.
- Shock voltage (40 $\mu$  sec.): 3000V
- Electrical life: 10,000,000 ops min. (6V 10mA), 2,000,000 ops min. @ rated load
- Mechanical life: 50,000,000 ops min. @ no load
- Electrical op. frequency: 30 ops/min.
- Mechanical op. frequency: 300 ops/min.
- Humidity range: 45~85%RH
- Insulation resistance: 100M $\Omega$  min. (500VDC)



Dimensions (In.)



**Specifications:**

- Size 40 x 40 x 12mm (1.57" x 1.57" x 0.47")
- Construction: plastic housing and blade material are UL 94V-0 rating
- Operating temperature: sleeve bearing -10°C to +65°C, ball bearing -30°C to +75°C
- Insulation resistance: 10MΩ min. @ 500VDC (between frame and terminal)
- Dielectric strength: 5mA max. @ 500VAC 60HZ 1 minute (between frame and terminal)
- Weight: 20 grams

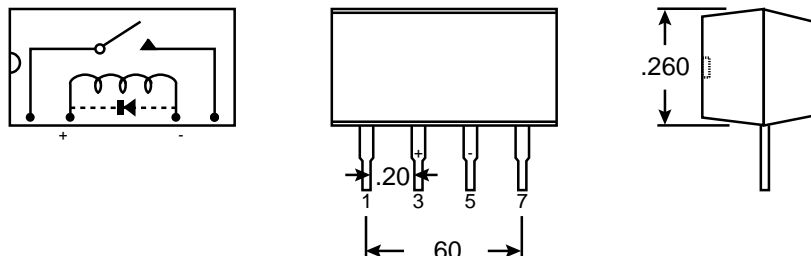
Mouser Stock No.	Bearing	Rated Voltage (V)	Rated Current (A)	Rated Input Power (W)	Max. Air Flow CFM	Noise dB(A)
432-32214	Sleeve	12	0.08	0.72	4.0	25
432-31214	Ball	12	0.08	0.72	4.0	25

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**Specifications:**

- Immersion resistant
- TTL compatible
- Designed to meet MIL-S-55433A, MIL-R-575F
- Contact rating: 10W(100VDC, 500mA)

**General Specifications:**

- Storage temp. range: -60°C to + 105°C
- Working temp. range: -40°C to + 85°C
- Vibrations: 10 grams
- Shocks: 50 grams
- Thermal resistance: 50 C/Watt

**Electrical Specifications:**

- Contact material: Rhodium
- Position to operate: Any
- Power switching (Max.): 10 Watts
- Carrying current: 1,000 mAmps
- Max. switching current: 500 mAmps
- Max. switching voltage: 100 VAC
- Min. switching level: 10 uV/5 10<sup>-9</sup> Amps
- Max. switching freq.: 200s<sup>-1</sup>
- Insulation resistance: 10<sup>10</sup> Ω
- Breakdown voltage (coil): 500 volts
- Breakdown voltage (contacts): 500 volts
- Operate time (Typical): 300 uSec
- Release time (Typical): 50 uSec
- Contact resistance (Max.): 150 mΩ
- Life expectancy (Typical): @ 10 Watts 5.10<sup>6</sup> operations  
@ 5 Watts 1.10<sup>7</sup> operations

Mouser Stock No.	Coil Diode	Nominal VDC	Coil Resistant Ω @ 25°C
433-D401A310	No	5	500
433-D401A311	Yes	5	500
433-D401A510	No	12	1000
433-D401A511	Yes	12	1000
433-D401A710	No	24	2150
433-D401A711	Yes	24	2150

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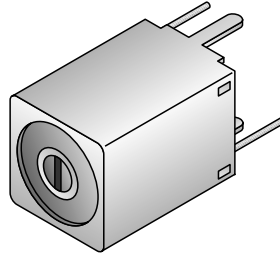
### Contact Rating

Item	
Contact capacity	
Resistive load (Cos. $\phi=1$ )	120VAC 10A 24VDC 10A
Inductive load (Cos. $\phi=0.4$ L/R=7msec.)	120VAC 3A 24VDC 3A
Rated carrying current	10A
Max allowable voltage	240VAC 110VDC
Max. allowable current	10A
Max. allowable power force	1200VA 300W
Referencial min. Application load	10VDC 10mA
Contact material	Ag-CdO

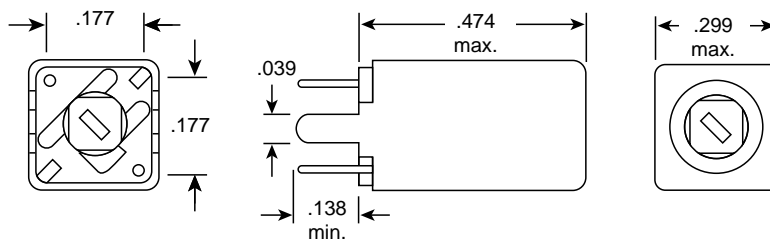
### Electrical Specifications:

Item	
Contact resistance	100m $\Omega$ max.
Operate time	10msec max.
Release time	5msec max.
Dielectric strength	
Between coil & contact	2,000VAC 50/60 Hz (1 minute)
Between contacts	750VAC 50/60 Hz (1 minute)
Surge resistiveness	5,000V (between coil & contact 1x40 $\mu$ sec)
Insulation resistance	100M $\Omega$ min. (500VDC)
Max. On/Off switching	
Mechanically	300ops./min.
electrically	30ops./min.
Operating ambient Temperature	-30 to +85°C (no water condensation and no water drop)
Operating humidity	45 to 85%RH
Coil temperature rise	40deg. max. 50deg. at 48 VDC coil voltage
Vibration	10 to 55Hz double amplitude 1.5mm
Endurance	10 to 55Hz double amplitude 1.0mm
Error operation	
Shock	100G min.
Endurance	10G min.
Error operation	
Life expectancy	
Mechanically	10,000,000 ops. min. (no load)
Electrically	100,000 ops.min. (at rated coil voltage)
Weight	abt. 10 grs.
UL file no.	E58304
CSA file no.	LR48471/LR52951

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Dimensions (In.)

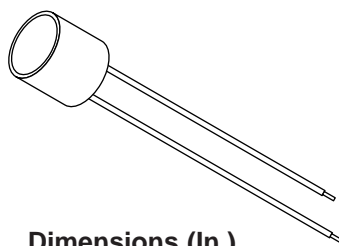


**Specifications:**

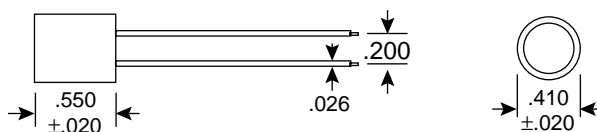
- Core material: ferrite
- Core size: .126 x .236
- L min measured with no core
- Wire: AWG #24 S.P.

MOUSER STOCK NO.	L (min.) μH	L (nom.) μH	L (max.) μH	Q (min.)	Test Freq (MHz)
434-0712-1.5CS	.032	.034	.035	55	50
434-0712-2.5CS	.048	.054	.059	60	50
434-0712-3.5CS	.065	.072	.079	60	50
434-0712-4.5CS	.090	.100	.109	45	25.2
434-0712-5.5CS	.109	.122	.132	45	25.2
434-0712-6.5CS	.130	.145	.159	50	25.2
434-0712-8.5CS	.171	.190	.209	45	25.2
434-0712-10.5CS	.270	.300	.330	50	25.2

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Dimensions (In.)



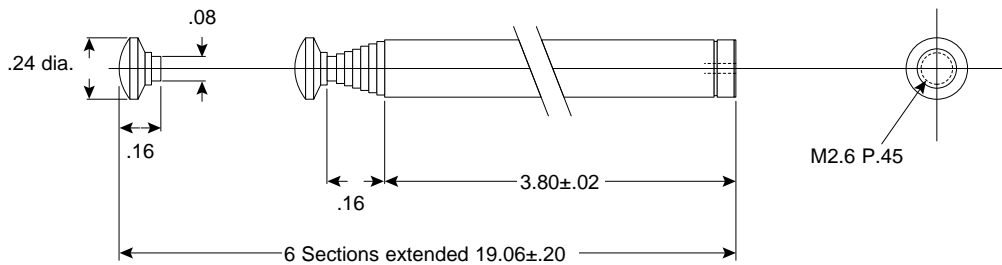
**Specifications:**

- Type: economy encapsulated RF
- Operating temperature: -10°~+40°C
- Core: ferrite/iron
- Dielectric strength: 5KV for 1 minute
- Voltage rating: 800V
- Tolerance: 10%
- Test frequency: 252 KHZ

Mouser Stock No.	Inductance		Q Min.	Minimum Resonance Frequency	Current DC MA (Max.)	DC Resistance (Maximum)
	In uH	In mH				
43LH210	1000	1.0	60	1.40	250	2.5
43LH212	1200	1.2	75	1.30	250	3.0
43LH215	1500	1.5	75	1.10	150	5.0
43LH218	1800	1.8	75	1.00	150	5.5
43LH222	2200	2.2	75	0.90	150	7.0
43LH227	2700	2.7	75	0.80	150	8.0
43LH233	3300	3.3	75	0.70	150	9.0
43LH239	3900	3.9	75	0.68	100	10.0
43LH247	4700	4.7	60	0.65	100	11.5
43LH256	5600	5.6	60	0.56	100	15.0
43LH268	6800	6.8	45	0.45	100	16.8
43LH282	8200	8.2	45	0.40	50	19.5
43LH310	10000	10.0	80	0.35	50	34.0
43LH312	12000	12.0	80	0.33	50	39.0
43LH318	18000	18.0	80	0.30	50	50.0
43LH322	22000	22.0	80	0.25	50	57.0
43LH327	27000	27.0	80	0.20	50	70.0
43LH333	33000	33.0	80	0.19	50	75.0



### Dimensions (In.)

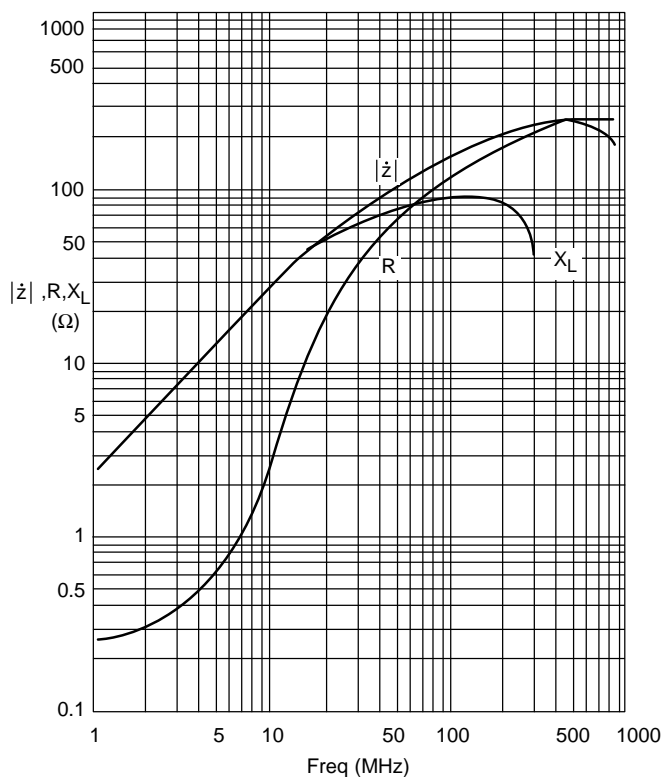
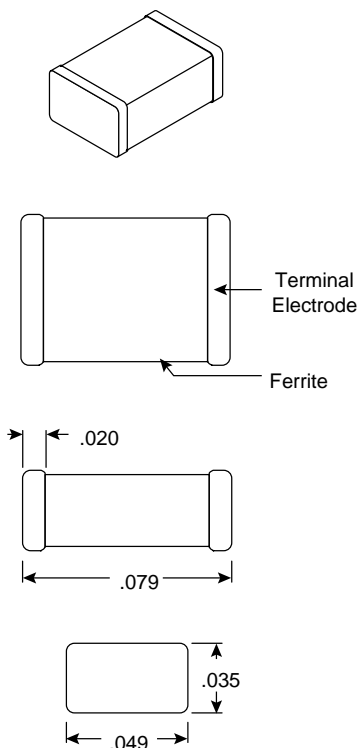


### Specifications:

- Sections: 6
- Collapsed length: .24 dia. x 3.80
- Extended length: 20.06"
- Base stud thread: M 2.6 P .45
- Contact resistance: less than 150mΩ
- Material: the metal tube is brass and the outer finish is chrome over nickel plating
- Frequency range: 88 - 108MHz

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### Dimensions (In.)

#### Specifications:

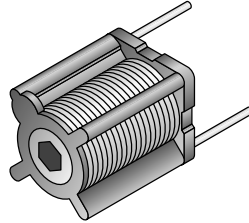
- Impedance tolerance ( $\Omega$ ):  $150 \pm 25\%$  @ 100MHz
- DC resistance:  $.50\Omega$  max.
- Rated current: 300mA (max.)
- Operating temperature:  $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Storage temperature:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Ferrite Chip Beads provide an effective means of EMI/RFI attenuation for electronic equipment. These items are specially designed for flow, reflow, and wave soldering applications.

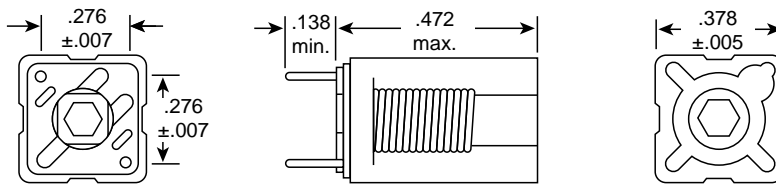
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**Dimensions (In.)**

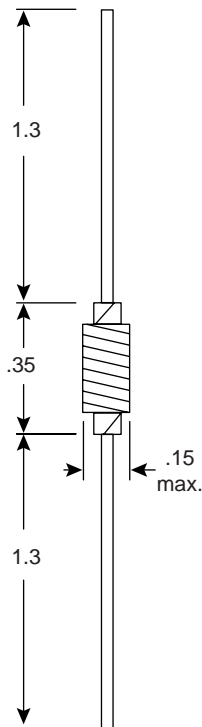


**Specifications:**

- Core material: carbonyl J
- Core size: .18 x .236
- L min measured with no core
- Wire: AWG #22 S.P.

Mouser Stock No.	L (min.) μH	L (nom.) μH	L (max.) μH	Q (min.)	Test Freq (MHz)
434-1012-1.5C	.041	.042	.044	65	50
434-1012-2.5C	.070	.078	.085	90	50
434-1012-3.5C	.108	.120	.132	80	50
434-1012-4.5C	.144	.160	.176	80	25.2
434-1012-5.5C	.172	.192	.211	90	25.2
434-1012-6.5C	.230	.260	.286	80	25.2
434-1012-8.5C	.333	.370	.407	95	25.2
434-1012-10.5C	.450	.500	.550	115	25.2

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Dimensions (In.)

Mouser Stock No.	L (μH)	Q min.	Test Freq. (MHz)	Res. Freq. (MHz)	DCR (Ω) max.	Max DC Current (mA)
43LQ107	.10	45	25	575	.025	2828
43LQ157	.15	45	25	500	.03	2582
43LQ227	.22	45	25	400	.04	2236
43LQ337	.33	45	25	325	.075	1633
43LQ447	.47	45	25	275	.15	1154
43LQ687	.68	45	25	225	.25	894
43LQ757	.75	45	25	200	.275	852
43LQ827	.82	45	25	175	.3	816
43LQ106	1.0	40	7.9	125	.36	745
43LQ126	1.2	40	7.9	100	.1	1414
43LQ156	1.5	40	7.9	95	.115	1318
43LQ186	1.8	40	7.9	85	.12	1290
43LQ226	2.2	40	7.9	83	1.65	1100
43LQ276	2.7	40	7.9	75	1.85	1039
43LQ336	3.3	35	7.9	65	.275	852
43LQ396	3.9	35	7.9	60	.3	816
43LQ476	4.7	35	7.9	55	.465	655
43LQ566	5.6	35	7.9	50	.5	632
43LQ686	6.8	35	7.9	50	.625	565
43LQ756	7.5	35	7.9	45	.65	554
43LQ826	8.2	35	7.9	40	.75	516
43LQ105	10	35	7.9	30	1.5	365
43LQ125	12	30	2.52	26	1.37	318
43LQ155	15	30	2.52	20	1.62	305
43LQ185	18	30	2.52	14	1.71	278
43LQ225	22	30	2.52	10	1.88	225
43LQ275	27	30	2.52	7	2.03	200
43LQ335	33	30	2.52	5	2.39	196
43LQ395	39	30	2.52	4.3	2.53	192
43LQ475	47	30	2.52	4	2.78	186
43LQ565	56	30	2.52	3.8	3.06	179
43LQ685	68	30	2.52	3.5	3.42	170
43LQ825	82	30	2.52	3.3	3.59	154
43LQ104	100	30	.796	3.0	4.35	136
43LQ124	120	30	.796	2.5	4.14	115
43LQ154	150	30	.796	2.5	4.85	104
43LQ184	180	30	.796	2.2	5	95
43LQ224	220	30	.796	2.0	5.87	83.5
43LQ274	270	30	.796	1.5	8.06	77
43LQ334	330	30	.796	1.4	8.5	69
43LQ394	390	30	.796	1.4	9.31	60
43LQ474	470	30	.796	1.2	13.9	51
43LQ564	560	30	.796	1.1	15.1	48
43LQ684	680	30	.796	1.1	15.7	40.25
43LQ824	820	30	.796	1.0	18.5	32
43LQ103	1000	30	.796	.9	22.2	30

**Specifications:**

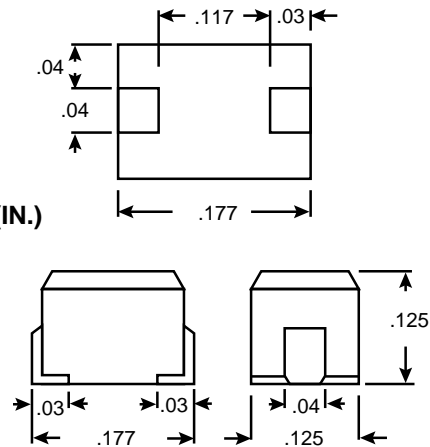
- Type: sub-miniature
- Inductive tolerance: .10~1.0μH ±20%; 1.2~1000μH ±10%
- Initial permeability: 60
- Saturation flux density: 3200 gauss
- Residual flux density: 1800 gauss
- Coercive force: 2.5 oersteds
- Curie temperature: 300°C

- Temperature coefficient of initial permeability: 9x10<sup>-6</sup>/°C
- Loss factor: 40 @ .4MHz; 200 @ 2MHz
- Specific gravity: 4.7
- Thermal operating temperature range: -20°C~+80°C
- Core: ferrite
- Terminal: tin coated copper wire
- Magnet wire: polyurethane enamelled copper wire
- Adhesive: epoxy resin amicon (G-500)
- Tube: PVC





DIMENSIONS (IN.)



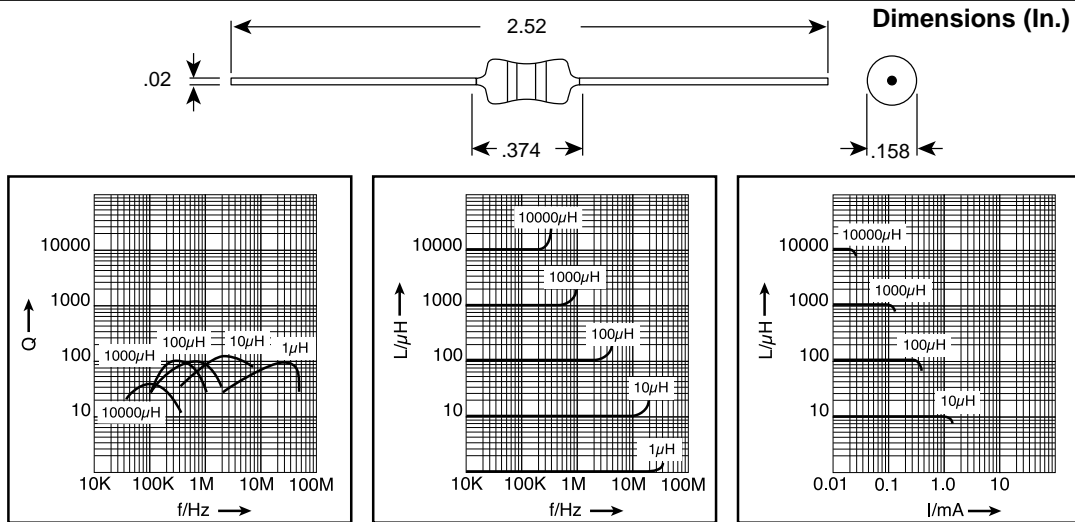
**Specifications:**

- Insulation: 1000M $\Omega$
- Temp. range: -25°C~+85°C

Mouser Stock No.	IND (UH)	Q Min.	Test Freq. (MHZ)	SRF (MHZ)	DCR Max ( $\Omega$ )	Max DC Current (mA)
ME435-0012	1.2	50	7.96	80	.30	500
ME435-0022	2.2	50	7.96	55	.40	430
ME435-0047	4.7	50	7.96	35	.57	360
ME435-0100	10	40	7.96	20	.84	300
ME435-0220	22	40	2.52	16	1.7	200
ME435-0330	33	40	2.52	14	2.2	180
ME435-0470	47	40	2.52	12	2.7	160
ME435-1000	100	50	.796	8.5	5.6	110
ME435-1500	150	50	.796	6.0	10.6	80
ME435-2200	220	50	.796	5.0	13.7	70

Inductance tolerance is  $\pm 10\%$  except for ME435-0012 & ME435-0022 which is  $\pm 20\%$ .

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**Specifications:**

- Solderability: According to MIL-STD-202F method 208D
- Operating temperature: IEC climatic category: 55/125/56  
DIN climatic category: FKF-55 to 125°C,  
humidity category F
- EIA color coded
- Product assurance: according to MIL-STD-790



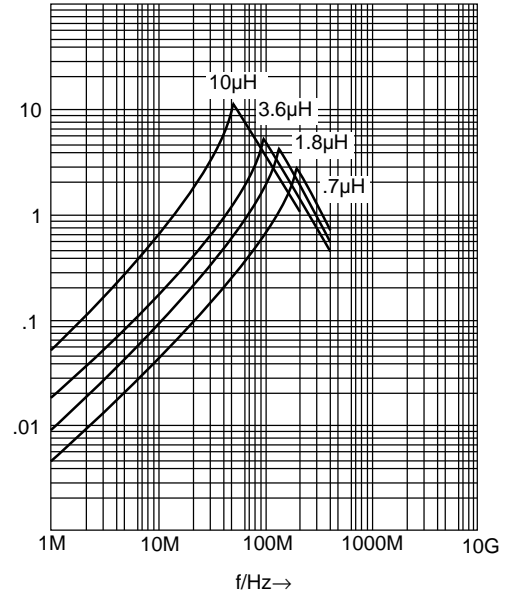
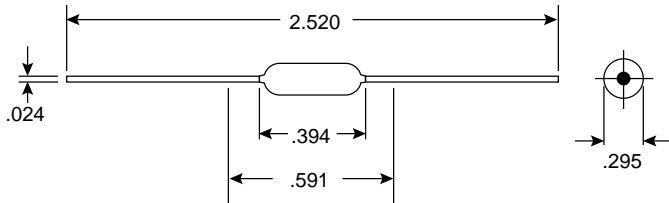
Mouser Stock No.	L (µH)	Tol. %	Q Min.	Test Freq. (MHz)	Res. Freq. (MHz)	DCR Max. (Ω)	Max DC Current (mA)
434-23-R33	.33	±20	45	25.2	250.0	0.12	1350
434-23-R47	.47	±20	45	25.2	220.0	0.14	1280
434-23-R68	.68	±20	45	25.2	200.0	0.16	1225
434-23-1R0	1.00	±10	45	25.2	205.0	0.16	1200
434-23-1R5	1.50	±10	50	7.96	165.0	0.20	1100
434-23-2R2	2.20	±10	55	7.96	140.0	0.25	1000
434-23-3R3	3.30	±10	60	7.96	115.0	0.29	900
434-23-4R7	4.70	±10	60	7.96	95.0	0.34	820
434-23-6R8	6.80	±10	65	7.96	75.0	0.51	670
434-23-100	10.00	±10	65	7.96	35.0	0.49	680
434-23-120	12.00	±10	50	2.52	30.0	0.55	650
434-23-150	15.00	±10	50	2.52	20.0	0.60	610
434-23-180	18.00	±10	50	2.52	17.0	0.67	580
434-23-220	22.00	±10	50	2.52	13.0	0.74	560
434-23-270	27.00	±10	55	2.52	10.0	0.83	530
434-23-330	33.00	±10	55	2.52	9.0	0.92	500
434-23-470	47.00	±10	40	2.52	7.5	1.10	450
434-23-101	100.00	±10	70	0.79	5.0	1.70	370
434-23-151	150.00	±10	70	0.79	4.2	2.80	280
434-23-221	220.00	±10	70	0.79	3.7	3.30	250
434-23-331	330.00	±10	70	0.79	2.7	6.40	190
434-23-471	470.00	±10	70	0.79	2.2	7.90	170
434-23-681	680.00	±10	55	0.79	1.9	10.00	150
434-23-102	1000.00	±10	50	0.79	1.6	14.00	130

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Dimensions (In.)

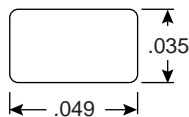
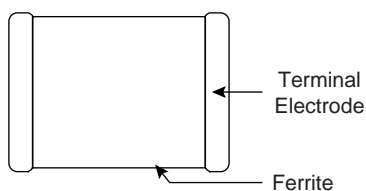
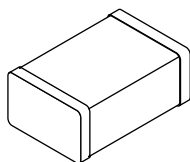


**Specifications:**

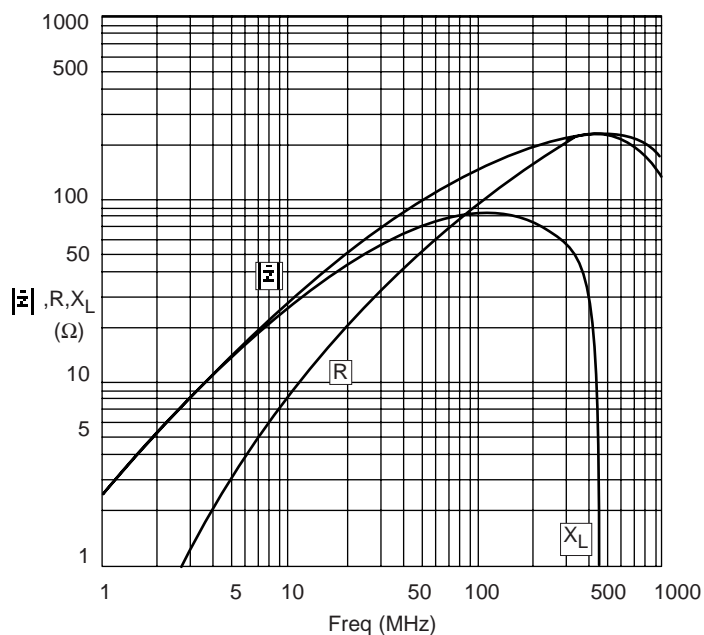
- Rated Current: Based on temperature rise basis & is determine as the point where the temperature rise does not exceed 40°C above the ambient temperature of 25°C.
- DC Resistance: measured @ 25°C
- Solderability: according to MIL-STD-202F method 208D
- Tensile strength of leads: min. 20N pull test for 10 seconds. Leads shall not be loose nor ruptured.
- Operating temperature: IEC climatic category 55/125/56 DIN climatic category FKF - 55°C to 125°C, humidity category F
- Moisture resistance:  $\Delta L/L < \pm 5\%$   $\Delta Q/Q < \pm 10\%$  when subjected to 96 hours of 40° ± 2°C and relative humidity between 90 and 95% and dried in circulation air for one hour.
- Product assurance: according to MIL-STD-790.

Mouser Stock No.	L (μH)	fL (MHz)	Tol (%)	Rated DC Current (A)	DC-Res (mΩ)	Core Material
434-04-R70M	0.7	1.0	±20	7	15	Ferrite
434-04-1R0M	1.0			4.0		
434-04-1R8M	1.8			2.5		
434-04-3R6M	3.6			1.8		
434-04-8R2M	8.2			1.5		
434-04-100M	10.0			1.3		

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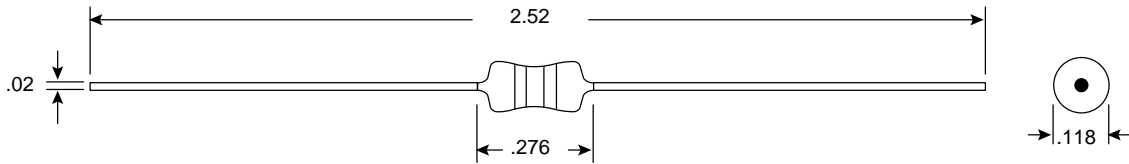
Ferrite Chip Beads provide an effective means of EMI/RFI attenuation for electronic equipment. These items are specially designed for flow, reflow, and wave soldering applications.



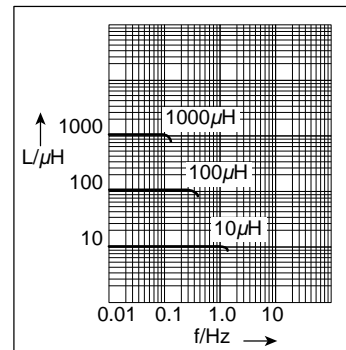
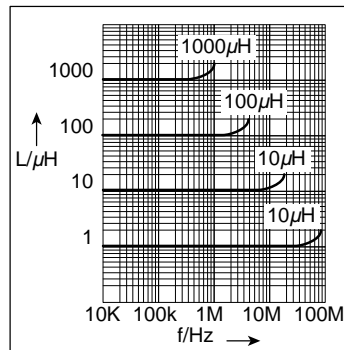
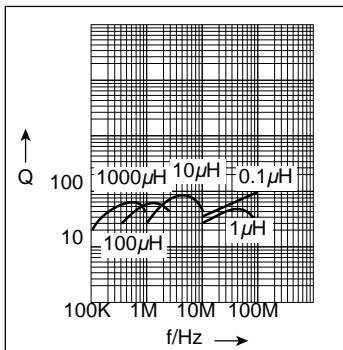
### Dimensions (In.)

#### Specifications:

- Impedance tolerance ( $\Omega$ ):  $120 \pm 25\%$  @ 100MHz
- DC resistance:  $.60\Omega$  max.
- Rated current: 200mA (max.)
- Operating temperature:  $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Storage temperature:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$



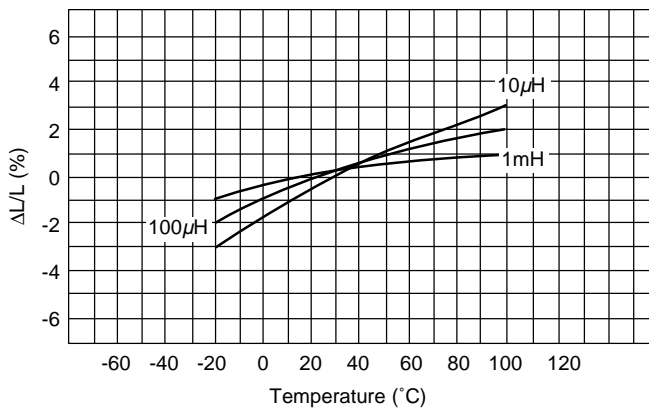
Dimensions (In.)



E169264(S)

**Specifications:**

- Solderability: according to MIL-STD-202F method 208D
- Operating temperature:  
IEC climatic category: 55/125/56  
DIN climatic category: FKF-55N to 125°C, humidity category F
- EIA color coded
- Product assurance: according to MIL-STD-790
- Core material: L<1.0µH-phenolic  
L≥1.0µH-ferrite



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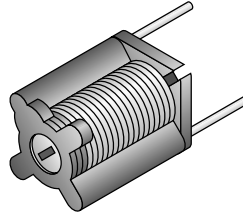
<http://www.mouser.com>

Mouser Stock No.	L (μH)	Tol. %	Q Min.	Test Freq. (MHz)	Res. Freq. (MHz)	DCR Max. (Ω)	Max. DC Current (mA)
434-22-R15	.15	±10	35	25.2	500.0	.13	1020
434-22-R22	.22	±10	35	25.2	420.0	.16	990
434-22-R27	.27	±10	35	25.2	380.0	.17	910
434-22-R33	.33	±10	35	25.2	330.0	.20	830
434-22-R39	.39	±10	35	25.2	300.0	.22	790
434-22-R47	.47	±10	35	25.2	280.0	.25	750
434-22-R56	.56	±10	35	25.2	260.0	.28	700
434-22-R68	.68	±10	35	25.2	240.0	.48	530
434-22-R82	.82	±10	35	25.2	230.0	.55	500
434-22-1R0	1.00	±5	35	25.2	180.0	.25	630
434-22-1R2	1.20	±5	40	7.96	170.0	.25	610
434-22-1R5	1.50	±5	40	7.96	150.0	.30	570
434-22-1R8	1.80	±5	40	7.96	130.0	.30	540
434-22-2R2	2.20	±5	40	7.96	120.0	.35	520
434-22-2R7	2.70	±5	40	7.96	110.0	.40	480
434-22-3R3	3.30	±5	40	7.96	110.0	.50	420
434-22-3R9	3.90	±5	40	7.96	100.0	.55	400
434-22-4R7	4.70	±5	40	7.96	90.0	.65	380
434-22-5R6	5.60	±5	45	7.96	75.0	1.30	260
434-22-6R8	6.80	±5	45	7.96	70.0	1.45	250
434-22-8R2	8.20	±5	50	7.96	65.0	1.60	240
434-22-100	10.00	±5	50	7.96	60.0	1.70	230
434-22-120	12.00	±5	50	2.52	50.0	2.40	190
434-22-150	15.00	±5	50	2.52	45.0	2.70	185
434-22-180	18.00	±5	60	2.52	14.0	0.81	350
434-22-220	22.00	±5	60	2.52	12.0	0.90	335
434-22-270	27.00	±5	60	2.52	11.0	1.00	315
434-22-330	33.00	±5	60	2.52	10.0	1.12	300
434-22-390	39.00	±5	60	2.52	8.5	1.21	285
434-22-470	47.00	±5	60	2.52	7.7	2.40	200
434-22-560	56.00	±5	60	2.52	6.8	2.60	195
434-22-680	68.00	±5	60	2.52	5.7	2.90	185
434-22-820	82.00	±5	60	2.52	5.5	3.20	175
434-22-101	100.00	±5	60	2.52	5.3	3.50	170
434-22-121	120.00	±5	60	0.79	5.0	3.80	160
434-22-151	150.00	±5	60	0.79	4.6	4.30	150
434-22-181	180.00	±5	60	0.79	4.2	5.30	135
434-22-221	220.00	±5	60	0.79	3.8	5.80	130
434-22-271	270.00	±5	60	0.79	3.2	7.80	115
434-22-331	330.00	±5	60	0.79	3.0	8.70	105
434-22-391	390.00	±5	60	0.79	2.7	11.00	95
434-22-471	470.00	±5	60	0.79	2.3	12.00	90
434-22-561	560.00	±5	60	0.79	2.2	16.50	75
434-22-681	680.00	±5	60	0.79	2.0	22.00	65
434-22-821	820.00	±5	60	0.79	1.8	25.00	60
434-22-102	1000.00	±5	60	0.79	1.5	33.00	55

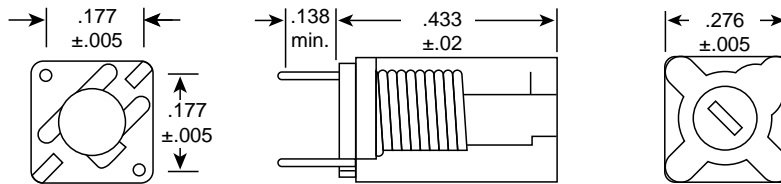
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### Dimensions (In.)

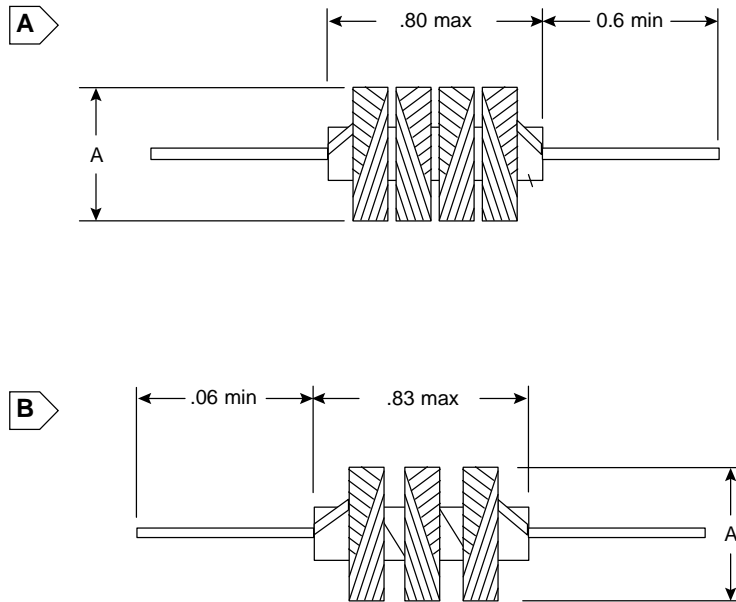


### Specifications:

- Core material: ferrite
- Core size: .126 x .236
- L min measured with no core
- Wire: AWG #24 S.P.

MOUSER STOCK NO.	L (min.) μH	L (nom.) μH	L (max.) μH	Q (min.)	Test Freq (MHz)
434-0712-1.5C	.035	.037	.039	70	50
434-0712-2.5C	.064	.072	.080	55	50
434-0712-3.5C	.085	.095	.100	80	50
434-0712-4.5C	.119	.133	.146	60	25.2
434-0712-5.5C	.153	.170	.187	65	25.2
434-0712-6.5C	.198	.220	.240	60	25.2
434-0712-8.5C	.270	.300	.330	55	25.2
434-0712-10.5C	.432	.480	.528	60	25.2

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### Dimensions (In.)

- Core: Ferrite  
1. Wire: 0.08 SYBI  
2. Coating: Varnish

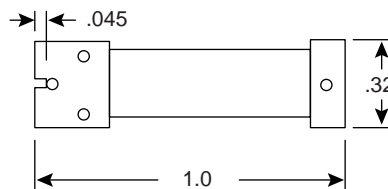
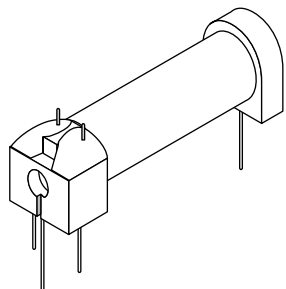
Mouser Stock No.	Fig	Inductance MH $\pm$ 10%	Test KHN Q Meter	Q Min	DCR Max.	Current Rating (mA)	A Max.	Turns
434-2250	A	2.5MH	252	30	26	50	.275	91TS
434-2100	A	1.0MH	252	20	15	50	.250	56TS
434-2500	B	5.0MH	252	30	48	50	.300	168TS

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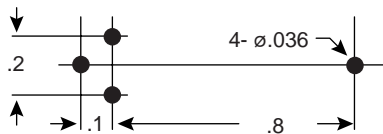
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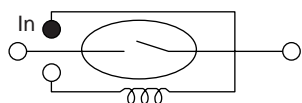
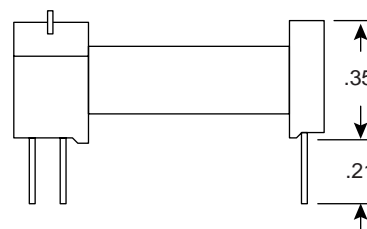




Dimensions (In.)

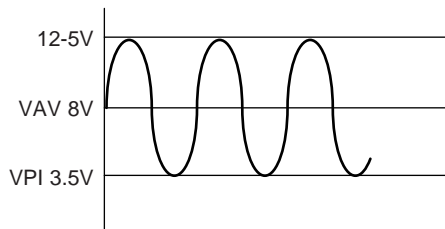


Mounting Holes



Circuit Diagram

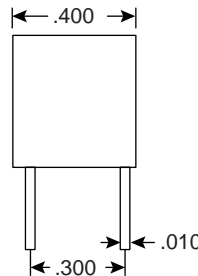
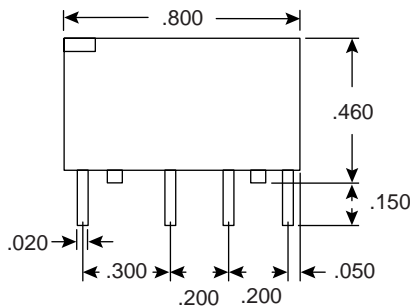
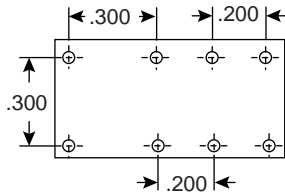
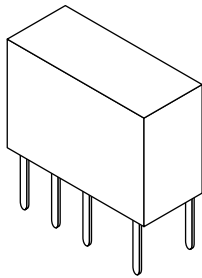
Ripple Voltage



VAV: average voltage  
VIP: pull-in voltage

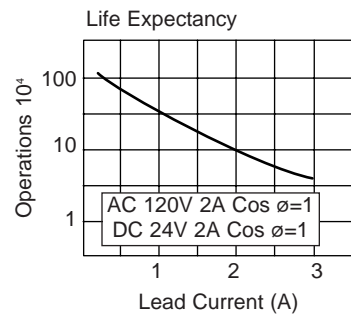
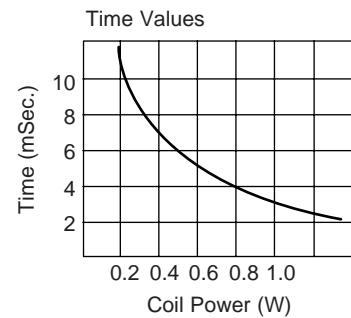
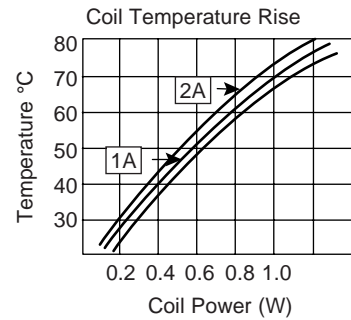
**Specifications:**

- Type: PC mount, 1 Form A SPST contacts normally open
- Outside view: P4-1138
- Contact resistance: 150mΩ max. @ 100mA
- Contact capacity: 10W max. (max. load)
- Contact rating voltage: 100VAC max.
- Coil temperature rise: 30°C max.
- Coil resistance: 500Ω ± 10%
- Temperature range: -10°C ~ +60°C
- Operate voltage range: 8VDC
- Dielectric strength: 500VAC for 1 minute between coil & contacts, 200VDC for 1 minute between contacts
- Operate time: 1.5mS max.
- Release time: 1.5mS max.
- Nominal voltage: 5VDC
- Nominal current: 10mA
- Shock voltage (40μ sec.): 3000V
- Pull-in voltage : 3.5V min.
- Drop-out voltage: 0.5V min.
- Electrical life: 1x10<sup>6</sup> ops min. (6V 10mA), 2x10<sup>5</sup> ops min. @ rated load
- Mechanical life: 5x10<sup>6</sup> ops min. @ no load



Dimensions (In.)

Mouser Stock No.	Nominal DC Voltage	Nominal Current (mA)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Power Consumption (W)
431-OVR-SH-205L	5	29.9	167	About .15
431-OVR-SH-212L	12	12.5	960	About .15
431-OVR-SH-224L	24	8.3	2880	About .20



**Specifications:**

- Type: mini DIP reed
- Contacts: 2 form C DPDT
- Pull-in voltage: 80% max.
- Drop-out voltage: 5% min.
- Max. allowable voltage: 130% max.
- Contact capacity: .3A @ 120VAC 1.25A @ 24VDC (resistive load); .2A @ 120VAC (inductive load)
- Rated carrying current: 1.0A
- Max. allowable voltage: 120VAC, 24VDC
- Max. allowable current: 1.0A
- Max. allowable power force: 50 VA / 30W

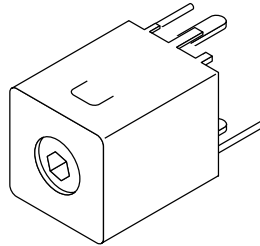


LR82292

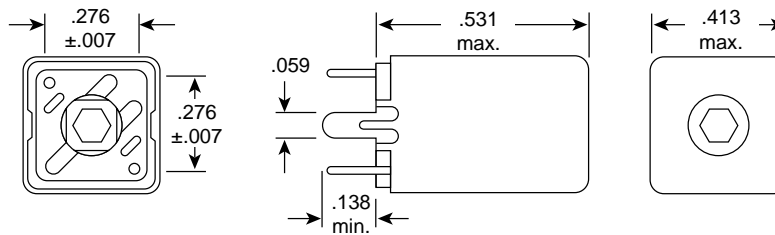


E82292

- Ref. min. applicable load: 1VDC 1mA
- Contact material: AgPd-Au clad
- Contact resistance: 60m $\Omega$  max.(6VDC @ 1A)
- Operate time: 10mSec. max.(at nom. condition)
- Release time: 5mSec. max.(at nom. condition)
- Dielectric withstanding strength: 750VAC for 1 minute (contact ~ contact); 1000VAC for 1minute (coil ~ contact)
- Insulation resistance: 1000M $\Omega$  @ 500 VDC
- Electrical life: 100,000 operations @ 1.0A/150VAC & 1.0A/24VDC
- Mechanical life: 20,000,000 operations @ no load



Dimensions (In.)



**Specifications:**

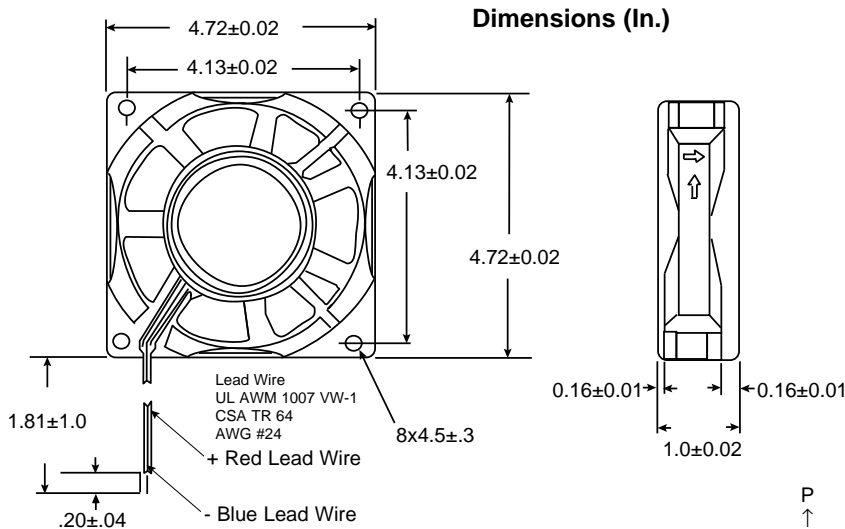
- Core material: carbonyl J
- Core size: .18 x .236
- L min measured with no core
- Wire: AWG #22 S.P.
- Torque: 35 to 350 cm/g
- Current rating: 2A max.

Mouser Stock No.	L (min.) μH	L (nom.) μH	L (max.) μH	Q (min.)	Test Freq (MHz)	Turns	Color
434-1012-1.5CS	.038	.039	.040	55	50	1.5	Brown
434-1012-2.5CS	.059	.065	.070	80	50	2.5	Red
434-1012-3.5CS	.085	.094	.100	60	50	3.5	Orange
434-1012-4.5CS	.112	.124	.136	60	25.2	4.5	Yellow
434-1012-5.5CS	.135	.150	.165	80	25.2	5.5	Green
434-1012-6.5CS	.169	.188	.206	60	25.2	6.5	Blue
434-1012-8.5CS	.243	.270	.297	65	25.2	8.5	Gray
434-1012-10.5CS	.297	.330	.363	65	25.2	10.5	Black

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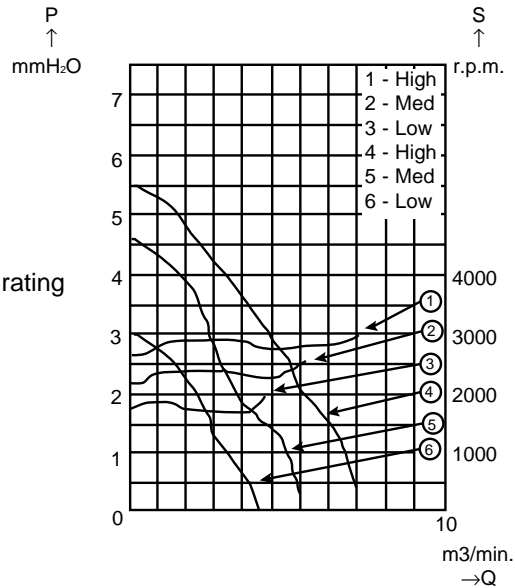
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**Specifications:**

- Size: 4.72" x 4.72" x 1"
- Construction: Plastic housing and blade material are UL94V-0 rating Brushless, Ball0Bearing Motors
- Operating temperature: Ball bearing -30°C to +75°C
- Insulation resistance: 10MΩ min at 500VDC (between frame and terminal)
- Dielectric strength: 5mA max at 500VAC 60Hz one minute (between frame and terminal)
- Weight: 140 grams
- Locked rotor protected
- Life exp.: 40,000 hours



Mouser Stock NO.	Rated Voltage (V)	Operating Voltage (V)	Rated Current (A)	Rated Input Power (w)	Max. Air Flow CFM	Max. Air Pressure (mmH20)	Noise dB(A)
432-31832	12	10.2-13.8	0.20	2.4	54	3.0	39
432-51832	24	20.4-27.6	0.13	3.12	54	3.0	39
432-31834	12	10.2-13.8	0.42	5.04	64.8	4.7	43
432-51834	24	20.4-27.6	0.21	5.04	64.8	4.7	43
432-31836	12	10.2-13.8	0.55	6.6	79.2	5.5	47
432-51836	24	20.4-27.6	0.30	7.2	79.2	5.5	47

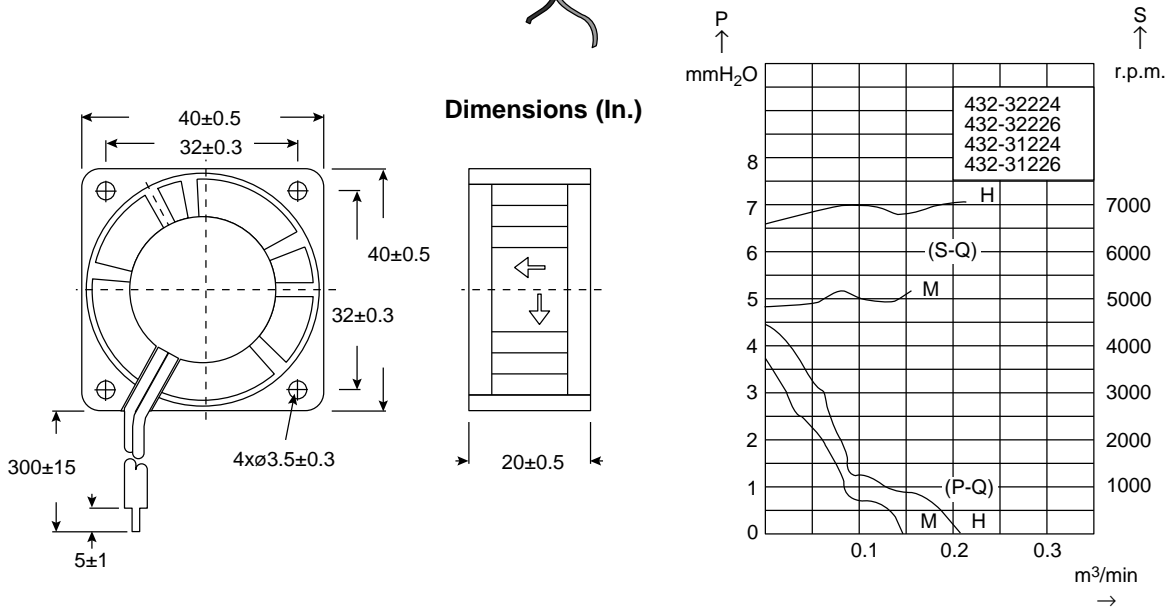
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LR59458-9



E94964(S)



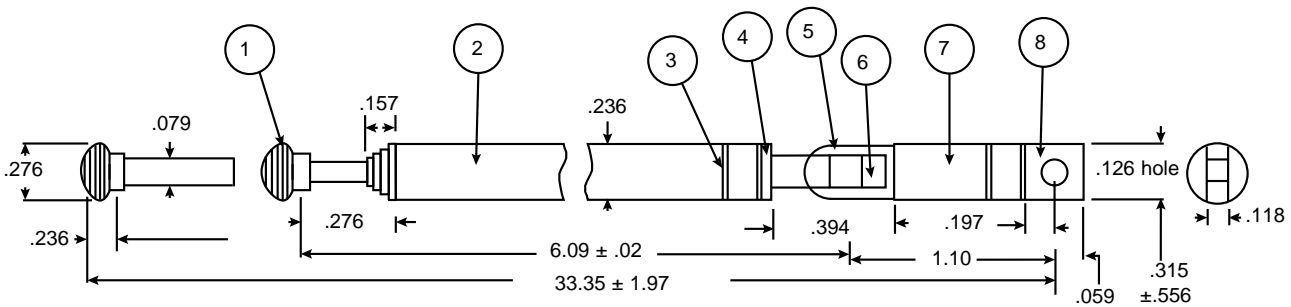
**Specifications:**

- Size 40 x 40 x 20mm (1.57" x 1.57" x 0.78")
- Construction: plastic housing and blade material are UL 94V-0 rating
- Operating temperature: sleeve bearing -10°C to +65°C, ball bearing -30°C to +75°C
- Insulation resistance: 10MΩ min. @ 500VDC (between frame and terminal)
- Dielectric strength: 5mA max. @ 500VAC 60HZ one minute (between frame and terminal)
- Weight: 40 grams

Mouser Stock No.	Bearing	Rated Voltage (V)	Rated Current (A)	Rated Input Power (W)	Max. Air Flow CFM	Noise dB(A)
432-32224	Sleeve	12	.10	1.20	5.4	27
432-31224	Ball	12	.10	1.20	5.4	27
432-32226	Sleeve	12	.16	1.92	7.56	33
432-31226	Ball	12	.16	1.92	7.56	33

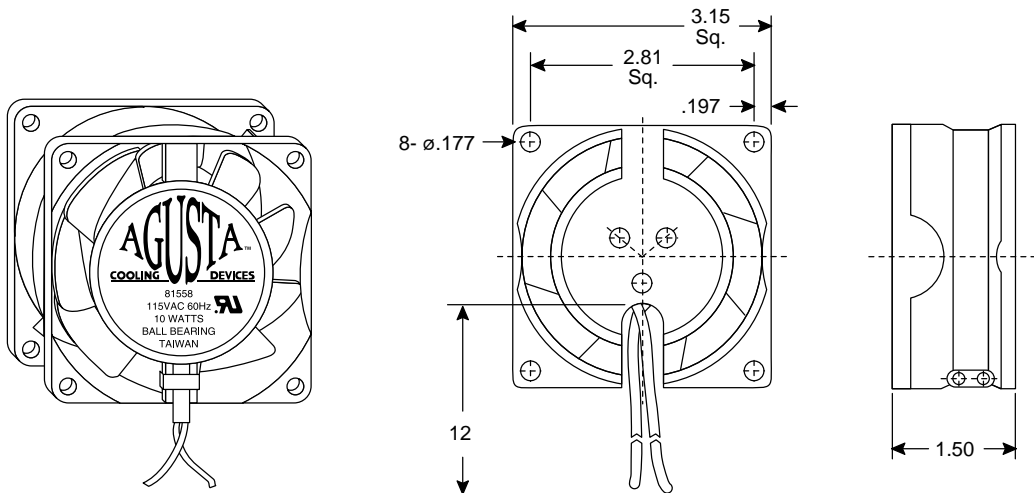
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### Dimensions (In.)



1. Head = BsBM
2. Antenna = BsT
3. Antenna Base = BsBM
4. Washer = PBs
5. Screw = NBsB1
6. Stand Metal = BsBM
7. Guide Pipe = BsT
8. Guide Base = BsBM

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Dimensions (In.)

**Specifications:**

- Type: AC tubeaxial
- Lead length: 12 inches
- Housing: all metal, die-cast aluminum
- Impellers: steel
- Motor: shaded-pole, impedance protected
- Bearing: Sintered bronze
- Weight : 420 grams
- Operation: 115VAC 60Hz
- Power: 9W
- Noise: 26dB(A)
- Air flow: 21CFM
- Speed: 2000PRM
- Current (mA) running: 110
- Lock: 140
- Bearing type: 432-81552 (ball), 432-82552 (sleeve)
- Operating temperature: Sleeve bearing (-10°C~60°C), ball bearing (-30°C~75°C)
- Life expectance: Sleeve bearing (15,000~20,000 hrs @ 60°C, 25,000~30,000 hrs @ 40°C); ball bearing ( 20,000 hrs z @ 70°C, 35,000 hrs @ 40°C)



E89061

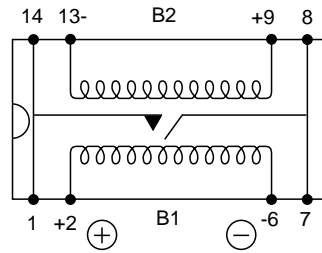
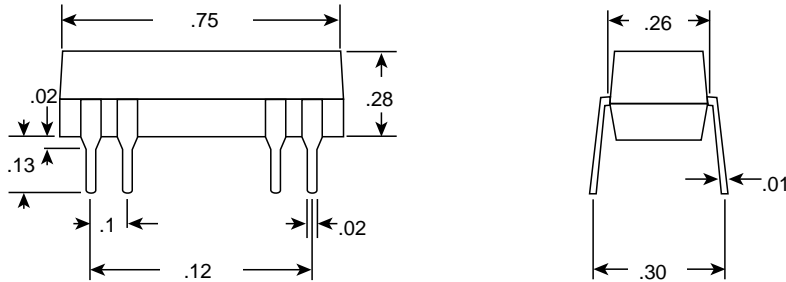


LR59458-1

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Dimensions (In.)

**Specifications:**

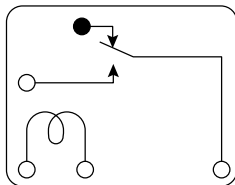
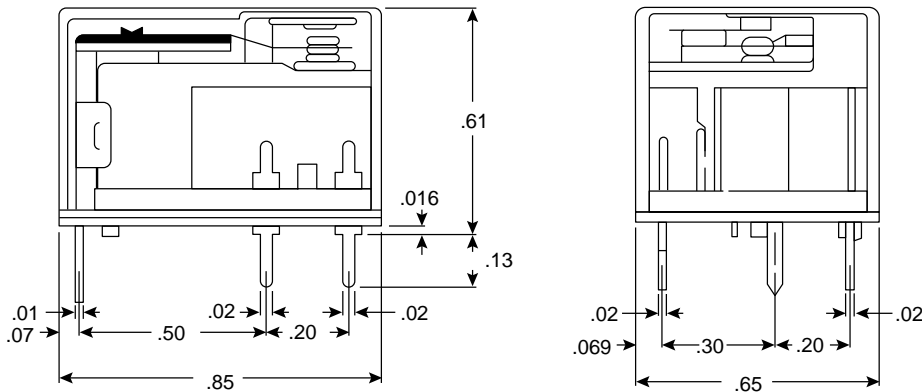
- Minimum distance between 2 relays 1 cm
- Minimum length of input pulse 5 ms

Mouser Stock No.	Nomin Voltage	Must Oper. Volt.	Must Release Volt.	Max. Voltage	Coil $\Omega \pm 10\%$	Contact Ratings		
						W	V	mA
433-D31L310	5	3.7	3.7	8	2x410	10	100	250
433-D31L510	12	8	8	16	2x1500	10	100	250

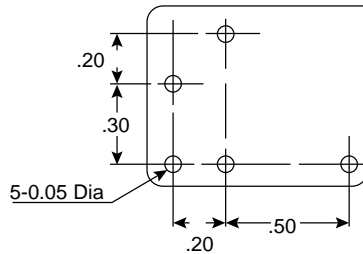
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### Dimensions (In.)

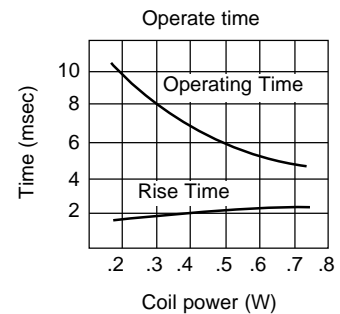
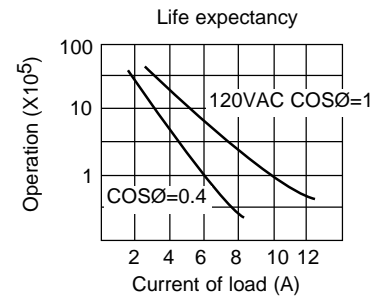
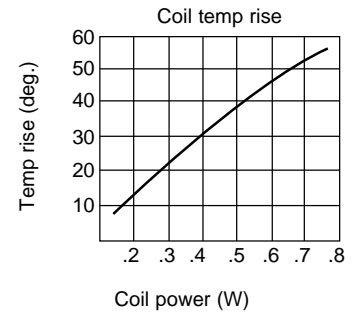


Schematic  
(Bottom View)



P. C. Board Pattern  
(Bottom View)

### Referential Data



### Coil Specifications

Nominal Voltage (V)	Nominal Current (mA)	Coil Resistance (Ω)	Pull-in Voltage (V)	Drop-out Voltage (V)	Max. Continuous Rated Voltage (V)
12VDC	37.5	400	9 max.	.6 min.	15.6

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### Contact Rating

Item	
Contact capacity	
Resistive load	120VAC 10A
(Cos. $\phi=1$ )	24VDC 10A
Inductive load	
(Cos. $\phi=0.4$	120VAC 3A
L/R=7msec.)	24VDC 3A
Rated carrying current	10A
Max allowable voltage	240VAC
	110VDC
Max. allowable current	10A
Max. allowable power force	1200VA
	300W
Referencial min. Application load	10VDC 10mA
Contact material	Ag-CdO

### Electrical Specifications:

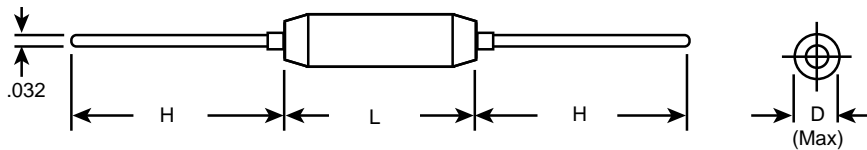
Item	
Contact resistance	100m $\Omega$ max.
Operate time	10msec max.
Release time	5msec max.
Dielectric strength	
Between coil & contact	2,000VAC 50/60 Hz (1 minute)
Between contacts	750VAC 50/60 Hz (1 minute)
Surge resistiveness	5,000V (between coil & contact 1x40 $\mu$ sec)
Insulation resistance	100M $\Omega$ min. (500VDC)
Max. On/Off switching	
Mechanically	300ops./min.
electrically	30ops./min.
Operating ambient Temperature	-30 to+85°C
	(no water condensation and no water drop)
Operating humidity	45 to 85%RH
Coil temperature rise	40deg. max.
	50deg. at 48 VDC coil voltage
Vibration	10 to 55Hz double amplitude 1.5mm
Endurance	10 to 55Hz double amplitude 1.0mm
Error operation	
Shock	100G min.
Endurance	10G min.
Error operation	
Life expectancy	
Mechanically	10,000,000 ops. min. (no load)
Electrically	100,000 ops.min. (at rated coil voltage)
Weight	abt. 10 grs.
UL file no.	E58304
CSA file no.	LR48471/LR52951

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### Dimensions (In.)



### Specifications:

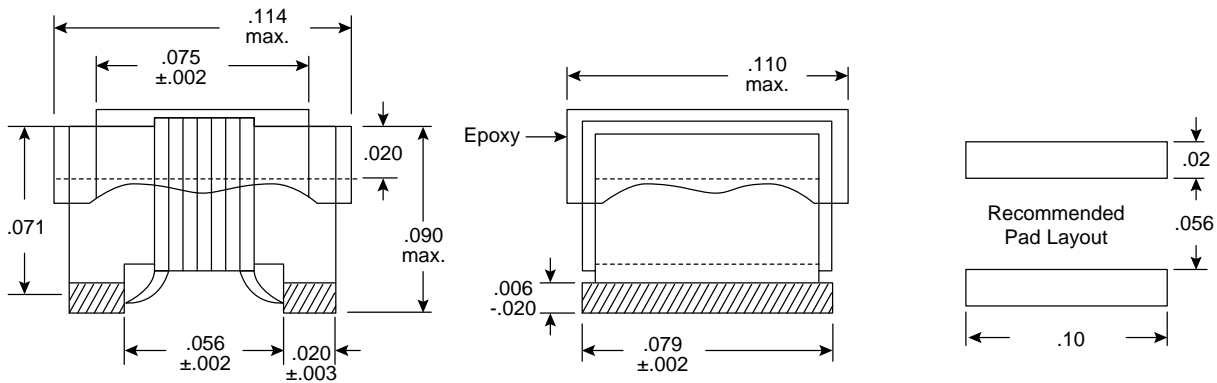
- Operating temperature range: -55°C - +125°C
- Dielectric insulation strength: 2.5KV
- Inductive tolerance: ±20%
- Rated inductance measured @ : 1MHz for  $L \leq 10\mu\text{H}$   
100KHz for  $10\mu\text{H} \leq L \leq 1000\mu\text{H}$
- Meets MIL-STD-790
- UL file no: E169264
- Core material: iron oxide



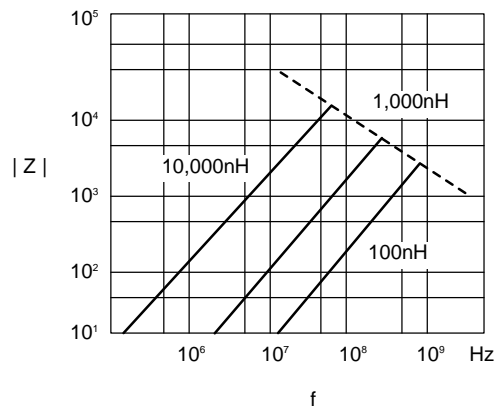
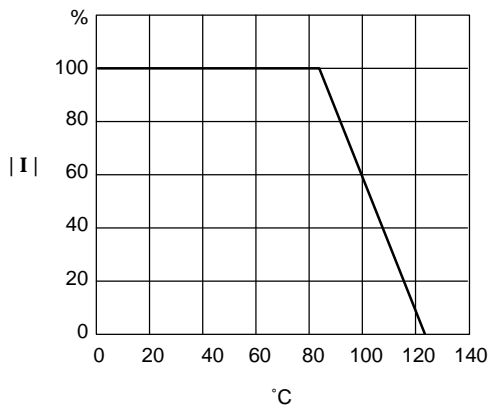
Mouser Stock No.	L (μH)	Max DC Current (A)	DCR Max (mΩ)	Dimensions (In.)		
				L	D	H
434-08-1R0M	1	4.00	15	.472	.197	1.48
434-08-2R0M	2	3.00	45	.472	.197	1.48
434-08-3R0M	3	2.00	77	.472	.197	1.48
434-08-6R0M	6	1.50	190	.472	.197	1.48
434-08-140M	14	0.70	760	.472	.197	1.48
434-08-300M	30	0.40	2700	.472	.197	1.48
434-08-400M	40	0.30	4100	.472	.197	1.48
434-08-101M	100	0.15	19000	.472	.197	1.48

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Dimensions (In.)



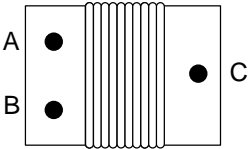
**Specifications:**

- DC resistance: 25°C
- Solderability: 260°C (max) for 10 seconds
- Wire termination: spot welded
- Operation temperature: -55°C~125°C
- Resistance to solvent: conform to MIL-STD-202E
- Packing: 8mm blister tape (EIA-481) on reel
- Pad metallization: tungsten-nickel
- Surface finishing: epoxy molded flat top for perfect component centering and vacuum pickup
- Core material: alumina

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Color Code	L (nH)			
	Value		C	
	A	B		
Black	0	0	$\times 10^0$	
Brown	1	1	$\times 10^1$	
Red	2	2	$\times 10^2$	
Orange	3	3	$\times 10^3$	
Yellow	4	4		
Green	5	5		
Blue	6	6		
Violet	7	7		
Grey	8	8		
White	9	9		
Example:	A = Orange	B = Orange		C = Black L = 33nH

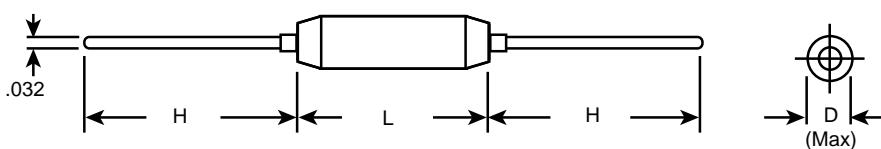
Mouser Stock No.	L (μH)	Q (min.)	Test Freq. (MHz)	Tolerance %	DC Res. (max.Ω)	Rated DC (mA)	SRF (MHz)
434-07-010M	.01	30	100	20	.050	1850	1000
434-07-022M	.022	40	100	20	.060	1450	1000
434-07-033K	.033	50	100	10	.060	1450	1000
434-07-039K	.039	50	100	10	.075	1300	1000
434-07-047K	.047	50	100	10	.079	1300	1000
434-07-056K	.056	50	100	10	.090	1260	1000
434-07-068K	.068	50	100	10	.090	1260	1000
434-07-082K	.082	50	100	10	.150	820	1000
434-07-R10K	.10	50	100	10	.150	820	1000
434-07-R12K	.12	40	100	10	.180	820	825
434-07-R18K	.18	40	50	10	.200	770	770
434-07-R22K	.22	40	50	10	.260	660	690
434-07-R27K	.27	40	50	10	.300	610	650
434-07-R33K	.33	40	50	10	.450	500	570
434-07-R39K	.39	35	50	10	.700	360	520
434-07-R47K	.47	35	50	10	.780	310	490
434-07-R56K	.56	35	35	10	1.20	260	440
434-07-R68K	.68	35	35	10	2.10	200	390
434-07-R82K	.82	35	35	10	2.30	170	360
434-07-1R0K	1.0	35	35	10	2.70	170	330
434-07-1R2K	1.2	35	35	10	3.00	170	310

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Dimensions (In.)



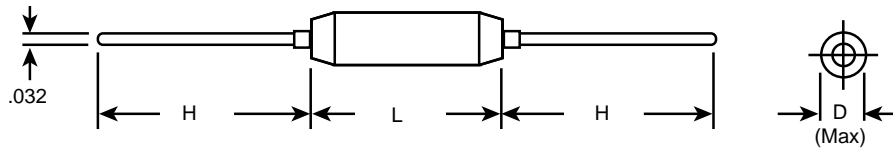
**Specifications:**

- Operating temperature range: -55°C - +125°C
- Dielectric insulation strength: 2.5KV
- Inductive tolerance: ±20%
- Core material: iron oxide
- Rated inductance measured @ : 1MHz for  $L \leq 10\mu\text{H}$   
100KHz for  $10\mu\text{H} \leq L \leq 1000\mu\text{H}$
- Meets MIL-STD-790
- UL file no: E169264



Mouser Stock No.	L (μH)	Max DC Current (A)	DCR Max (mΩ)	Dimensions (In.)		
				L	D	H
434-09-1R0M	1	6.00	11	.669	.217	1.38
434-09-2R0M	2	4.00	20	.669	.217	1.38
434-09-3R0M	3	3.00	38	.669	.217	1.38
434-09-6R0M	6	2.00	120	.669	.217	1.38
434-09-100M	10	1.50	230	.669	.217	1.38
434-09-230M	23	0.70	730	.669	.217	1.38
434-09-500M	50	0.40	3000	.669	.217	1.38
434-09-700M	70	0.35	4500	.669	.217	1.38
434-09-161M	160	0.15	18000	.669	.217	1.38

### Dimensions (In.)



### Specifications:

- Operating temperature range:  $-55^{\circ}\text{C}$  -  $+125^{\circ}\text{C}$
- Dielectric insulation strength: 2.5KV
- Inductive tolerance:  $\pm 20\%$
- Core material: iron oxide
- Rated inductance measured @ : 1MHz for  $L \leq 10\mu\text{H}$   
100KHz for  $10\mu\text{H} \leq L \leq 1000\mu\text{H}$
- Meets MIL-STD-790
- UL file no: E169264

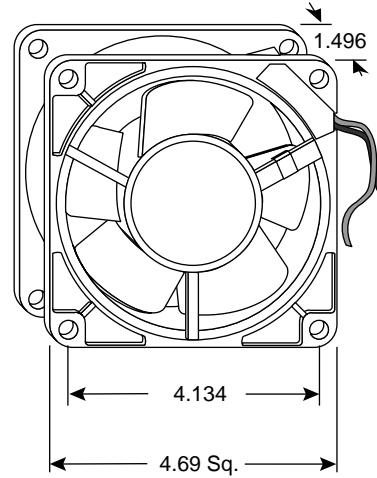
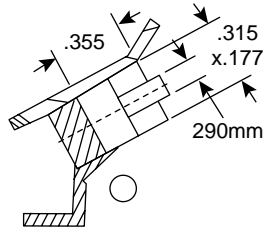


Mouser Stock No.	L ( $\mu\text{H}$ )	Max DC Current (A)	DCR Max ( $\text{m}\Omega$ )	Dimensions (In.)		
				L	D	H
434-10-3ROM	3	6.00	18	.906	.295	1.26
434-10-5ROM	5	4.00	34	.906	.295	1.26
434-10-100M	10	3.00	87	.906	.295	1.26
434-10-150M	15	2.00	165	.906	.295	1.26
434-10-250M	25	1.50	340	.906	.295	1.26
434-10-550M	55	0.70	1300	.906	.295	1.26
434-10-131M	130	0.40	4800	.906	.295	1.26
434-10-161M	160	0.30	6600	.906	.295	1.26
434-10-351M	350	0.15	19000	.906	.295	1.26

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**Dimensions (In.)**  
(except where noted)



**Specifications:**

- Type: AC tubeaxial
- Size: 119 x 119 x 38mm (4.69" x 4.69" x 1.5")
- Operating temperature: sleeve bearing, -10°C~60°C;  
ball bearing, -30°C~75°C
- Weight: 600g
- Life expectancy: 40,000 hrs unless noted
- Voltage: 115VAC
- Frequency: 50/60Hz
- Construction: all metal, die-cast aluminum housing, steel impeller, shaded pole motor, impedance protected terminal block [290mm (12") flying leads also available]
- Bearing: sintered bronze sleeve bearing or ball bearings



E94964(S)

12" Leads

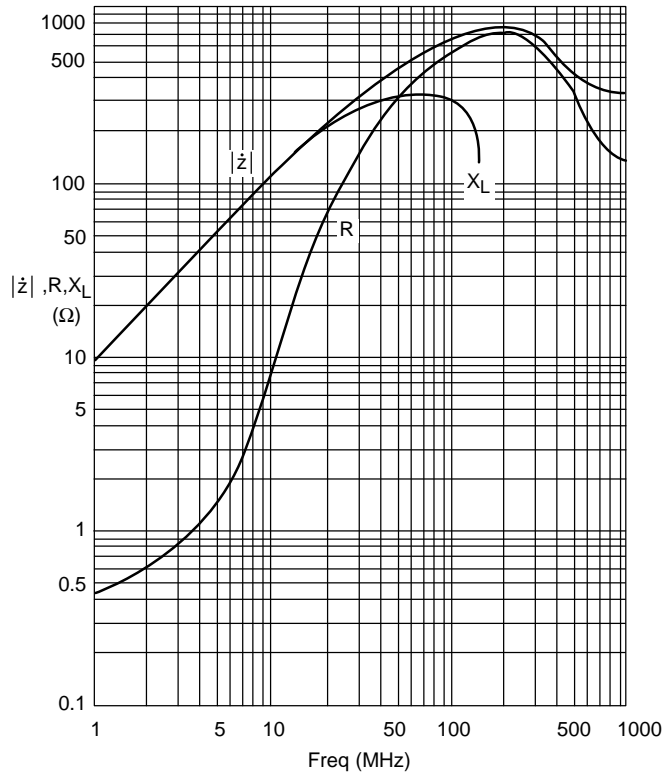
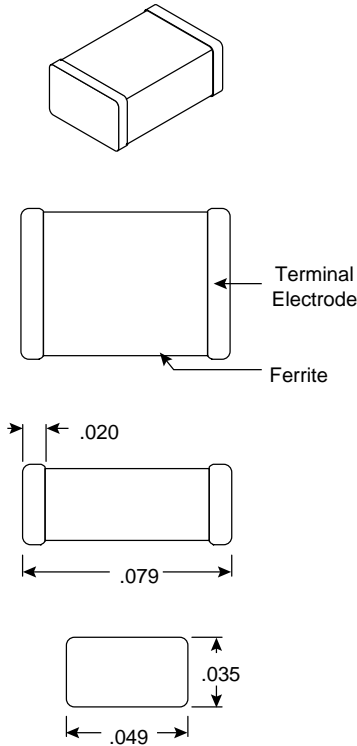
\* 15,000 hrs  
\*\* 35,000 hrs

Mouser Stock No.	Bearing	Current (mA)		Power (W)	Noise dB(A)	Air Flow CFM	Speed PRM
		Running	Lock				
** 432-81858	Ball	250/240	260/250	24/22	45/50	94/105	2650/3000
432-81862	Ball	210/200	220/210	21/19	32/35	50/55	1600/1700
432-81864	Ball	230/220	240/230	22/20	36/38	60/65	1800/2100
** 432-81866	Ball	240/230	250/240	23/21	38/42	70/78	2250/2500
* 432-82858	Sleeve	250/240	260/250	24/22	45/50	94/105	2650/3000

Faston Terminals

* 432-81852	Ball	210/200	220/210	21/19	32/35	50/55	1600/1700
432-81854	Ball	230/220	240/230	22/20	36/38	60/65	1800/2100
** 432-81856	Ball	240/230	250/240	23/21	38/42	70/78	2250/2500
432-82852	Sleeve	210/200	220/210	21/19	32/35	50/55	1600/1700





### Dimensions (In.)

#### Specifications:

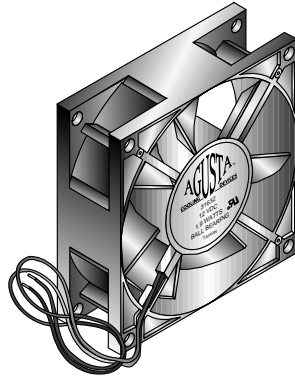
- Impedance tolerance ( $\Omega$ ):  $600 \pm 25\%$  @ 100MHz
- DC resistance:  $1.00\Omega$  max.
- Rated current: 200mA (max.)
- Operating temperature:  $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Storage temperature:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Ferrite Chip Beads provide an effective means of EMI/RFI attenuation for electronic equipment. These items are specially designed for flow, reflow, and wave soldering applications.

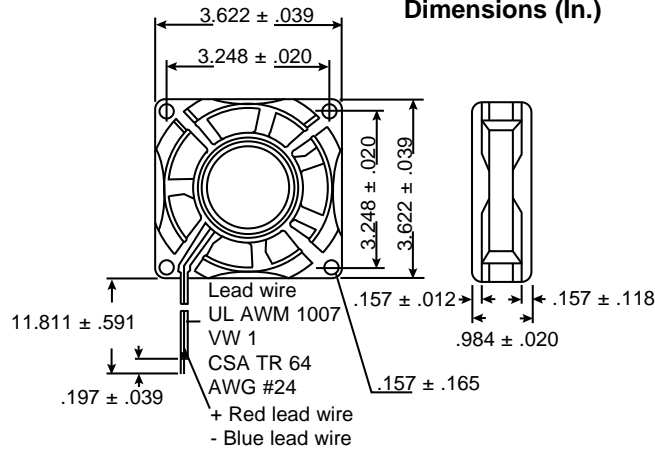
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Dimensions (In.)



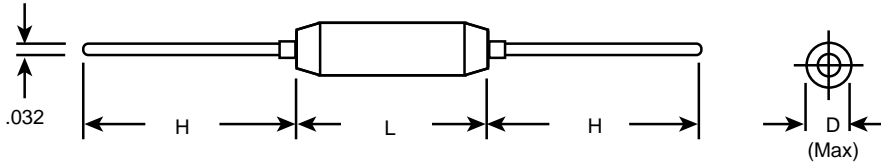
**Specifications:**

- Housing and Blades: UL94V-0 Rated Plastic or ball bearings
- Operating Temp: Sleeve Bearing -10°C to +60°C  
 Ball Bearing -30°C to +75°C
- Insulation resistance: 10MΩ min at 500VDC
- Dielectric strength: 5mA max at 500VAC 60HZ one minute
- Weight: 150 grams
- Locked rotor protected
- Life exp.: 40,000 hours

Mouser Stock No.	Bearing	Rated Voltage (V)	Operating Voltage (V)	Rated Current (A)	Rated Input Power (W)	Max. Air Flow CFM	Max. Air Pressure (mmH2O)	Noise dB(A)
432-31632	Ball	12	10.2-13.8	.16	1.92	25.2	2.0	28
432-31634	Ball	12	10.2-13.8	.20	2.4	32.4	3.5	35
432-31636	Ball	12	10.2-13.8	.32	3.12	43.2	3.8	40
432-51632	Ball	24	20.4-27.6	.10	2.40	25.2	2.0	28
432-51634	Ball	24	20.4-27.6	.14	3.36	32.4	3.5	35
432-51636	Ball	24	20.4-27.6	.18	4.32	43.2	3.8	40

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### Dimensions (In.)



### Specifications:

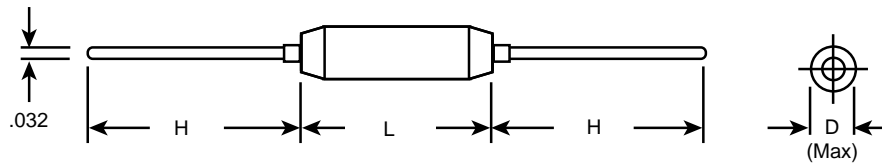
- Operating temperature range: -55°C - +125°C
- Dielectric insulation strength: 2.5KV
- Inductive tolerance: ±20%
- Core material: ferrite
- Rated inductance measured @ : 1MHz for  $L \leq 10\mu\text{H}$   
100KHz for  $10\mu\text{H} \leq L \leq 1000\mu\text{H}$   
10KHz for  $L > 1000\mu\text{H}$
- Meets MIL-STD-790
- UL file no: E169264(S)



Mouser Stock No.	L (μH)	Max DC Current (A)	DCR Max (mΩ)	Dimensions (In.)		
				L	D	H
434-11-7R0M	7	6.00	20	.906	.295	1.26
434-11-120M	12	4.00	40	.906	.295	1.26
434-11-220M	22	3.00	70	.906	.295	1.26
434-11-400M	40	2.00	180	.906	.295	1.26
434-11-560M	56	1.50	300	.906	.295	1.26
434-11-101M	100	1.00	650	.906	.295	1.26
434-11-221M	220	0.50	2600	.906	.295	1.26
434-11-471M	470	0.30	6500	.906	.295	1.26
434-11-681M	680	0.20	14000	.906	.295	1.26
434-11-122M	1200	0.10	34000	.906	.295	1.26
434-11-152M	1500	0.08	54000	.906	.295	1.26

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### Dimensions (In.)



### Specifications:

- Operating temperature range: -55°C - +125°C
- Dielectric insulation strength: 2.5KV
- Inductive tolerance: ±20%
- Core material: iron oxide
- Rated inductance measured at : 1MHz for  $L \leq 10\mu\text{H}$   
100KHz for  $10\mu\text{H} \leq L \leq 1000\mu\text{H}$
- Meets MIL-STD-790
- UL file no: E169264(S)

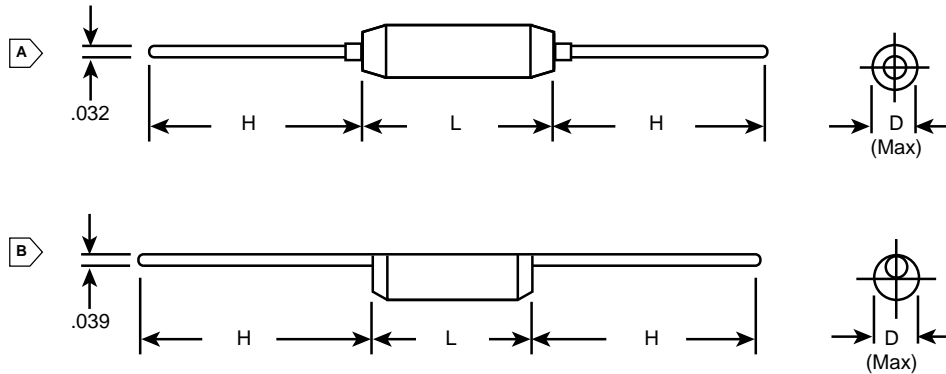


Mouser Stock No.	L (μH)	Max DC Current (A)	DCR Max (mΩ)	Dimensions (In.)		
				L	D	H
434-12-5R0M	5	6.00	23	1.10	.295	1.16
434-12-6R0M	6	5.00	30	1.10	.295	1.16
434-12-7R0M	7	4.00	35	1.10	.295	1.16
434-12-120M	12	3.00	83	1.10	.295	1.16
434-12-200M	20	2.00	170	1.10	.295	1.16
434-12-300M	30	1.50	350	1.10	.295	1.16
434-12-600M	60	0.70	770	1.10	.295	1.16
434-12-750M	75	0.70	1300	1.10	.295	1.16
434-12-151M	150	0.40	3500	1.10	.295	1.16
434-12-161M	160	0.40	3800	1.10	.295	1.16
434-12-211M	210	0.30	6400	1.10	.295	1.16
434-12-231M	230	0.30	7200	1.10	.295	1.16
434-12-421M	420	0.15	19000	1.10	.295	1.16
434-12-471M	470	0.15	20000	1.10	.295	1.16

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### Dimensions (In.)



### Specifications:

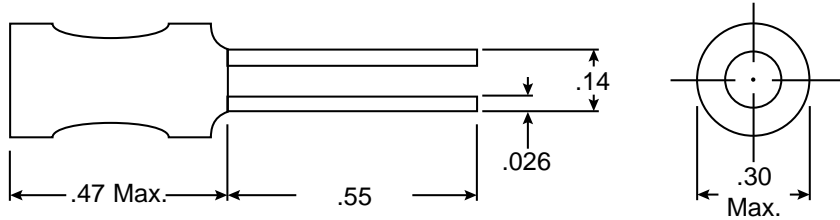
- Operating temperature range: -55°C - +125°C
- Dielectric insulation strength: 2.5KV
- Inductive tolerance: ±20%
- Core material: ferrite
- Rated inductance measured at : 1MHz for  $L \leq 10\mu\text{H}$   
100KHz for  $10\mu\text{H} \leq L \leq 1000\mu\text{H}$   
10KHz for  $L > 1000\mu\text{H}$
- Meets MIL-STD-790
- UL file no: E169264(S)



Mouser Stock No.	Fig.	L (μH)	Max DC Current (A)	DCR Max (mΩ)	Dimensions (In.)		
					L	D	H
434-13-3R9M	B	3.9	12.00	0.009	1.18	.315	1.22
434-13-5R6M	A	5.6	8.00	0.017	1.03	.315	1.30
434-13-100M	A	10	5.00	0.035	1.03	.315	1.30
434-13-150M	A	15	4.00	0.05	1.03	.315	1.30
434-13-330M	A	33	3.50	0.07	1.03	.354	1.30
434-13-680M	A	68	3.00	0.10	1.03	.394	1.30
434-13-101M	A	100	2.50	0.15	1.03	.433	1.30
434-13-151M	A	150	1.80	0.30	1.03	.433	1.30
434-13-331M	A	330	1.40	0.50	1.03	.433	1.30
434-13-681M	A	680	1.00	1.00	1.03	.433	1.30
434-13-102M	A	1000	0.80	1.50	1.03	.433	1.30
434-13-152M	A	1500	0.70	2.00	1.03	.433	1.30
434-13-332M	A	3300	0.50	4.00	1.03	.433	1.30
434-13-682M	A	6800	0.35	8.00	1.03	.433	1.30
434-13-103M	A	10000	0.30	12.00	1.03	.433	1.30

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Dimensions (In.)

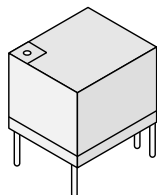
**Specifications:**

- 5% inductive tolerance
- Ferrite cores
- Inductance measured @ 20KHz

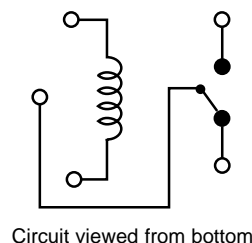
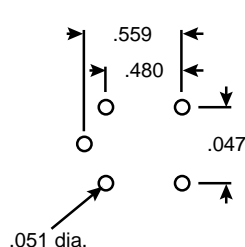
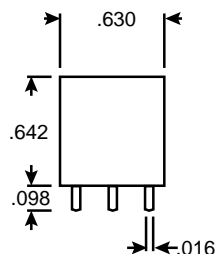
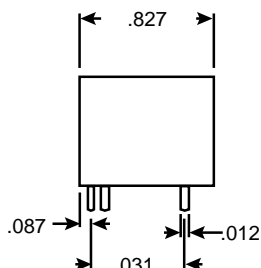
.30" Medium Inductance

Mouser Stock No.	L		Q Min.	Test Frequency (KHz)	Res. Freq (KHz)	DCR Max. (Ω)	Max. DC Current (mA)
	μH	mH					
434-17-681J	680	0.68	80	796	2300	3.7	170
434-17-821J	820	0.82	80	796	2100	4.1	160
434-17-102J	1000	1.00	100	252	1800	5.4	150
434-17-122J	1200	1.20	100	252	1600	5.8	140
434-17-152J	1500	1.50	100	252	1500	6.5	130
434-17-182J	1800	1.80	100	252	1400	7.5	120
434-17-222J	2200	2.20	100	252	1300	8.8	110
434-17-272J	2700	2.70	100	252	1200	9.8	100
434-17-332J	3300	3.30	100	252	1100	13.0	80
434-17-392J	3900	3.90	100	252	1000	16.5	75
434-17-472J	4700	4.70	100	252	900	18.5	70
434-17-562J	5600	5.60	100	252	800	21.0	60
434-17-682J	6800	6.80	100	252	700	29.0	55
434-17-822J	8200	8.20	100	252	650	33.0	50

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Dimensions (In.)



Circuit viewed from bottom

Contact configuration: SPDT  
Contact rating: 10A/125VAC, 7A/250VAC, 7A/30VDC

E88991

LR90143

Rated Voltage (V)	Rated Current ±10% @ 25°C (mA)	Coil resistance ±10% @ 25°C (Ω)	Max. Continuous volt. @25°C	Pick up volt. (max.) @ 25°C	Drop out volt. (min) @ 25°C	Power consumption @ rated volt.
12	30.0	400	110% of rated voltage	75% of rated voltage	10% of rated Voltage	Approx. 0.36W

Contact resistance	50xΩ max. (initial value)
Operate time	15ms max.
Release time	5ms max.
Insulation resistance	100MΩ min. (500VDC)
Dielectric strength	Between open contact: 500VAC 50/60 Hz 1 minute
	Between contact and coil: 1500VAC 50/60 Hz 1 minute
Vibration resistance	Operating extremes: 10~50Hz, amplitude 1.0mm
	Damage limits: 10~50Hz, amplitude 1.0mm
Shock resistance	Operating extremes 10G
	Damage limits 100G
Life expectancy	Mechanical: 10,000,000 operations (frequency 18,000 operations/hour)
	Electrical: 10,000 operations (frequency 1,200 operations/hour)
Operating temperature	-30~+60°C (no freeing)
Weight	Approximately 10g

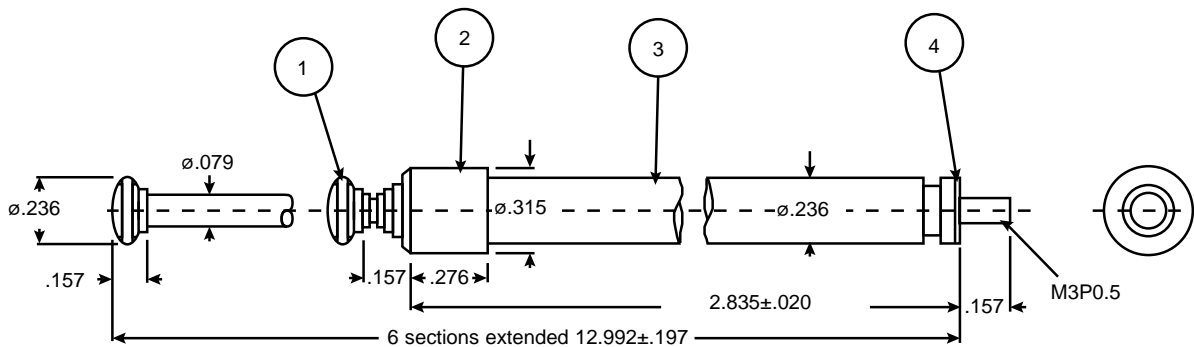
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### Dimensions (In.)



- 1 Top: BSBM
- 2 Metal: BSBM
- 3 Antenna: BST
- 4 Antenna base: BSBM

#### Specifications:

- Frequency range: 46-49mHz

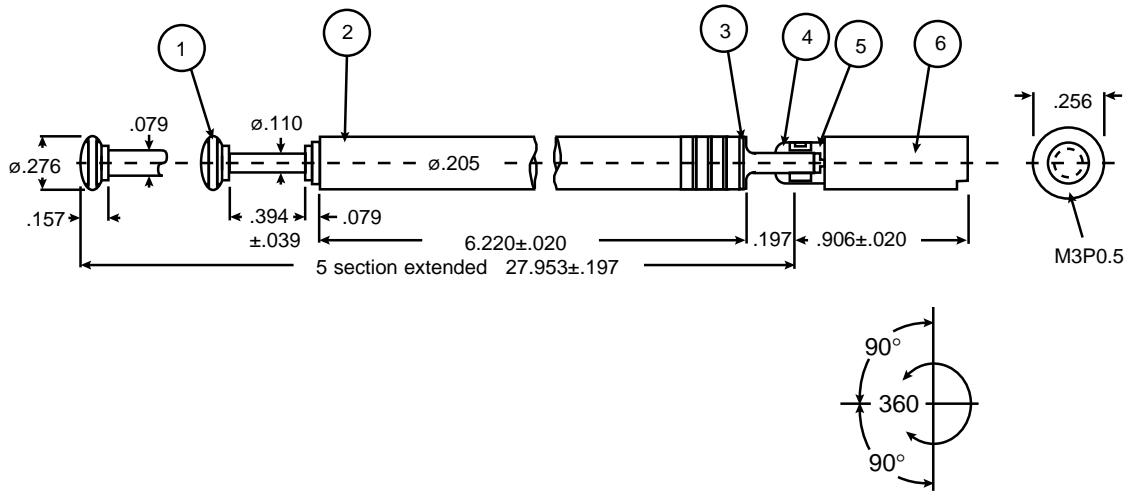
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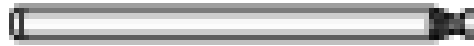


Dimensions (In.)

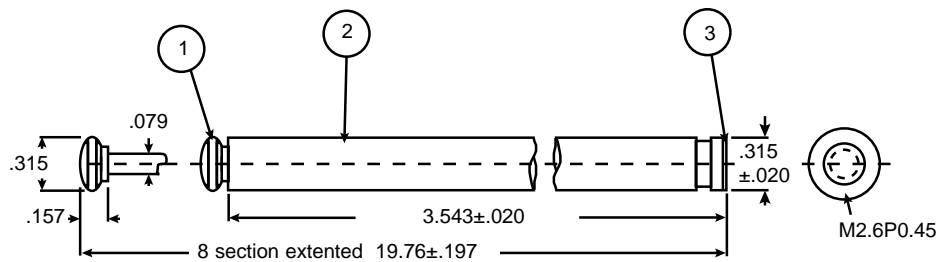


- 1 Top: BSBM
- 2 Antenna: BST
- 3 Antenna base: BSBM
- 4 Screw: SWRM
- 5 Washer: PBR
- 6 Stand metal: BSBM

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### Dimensions (In.)



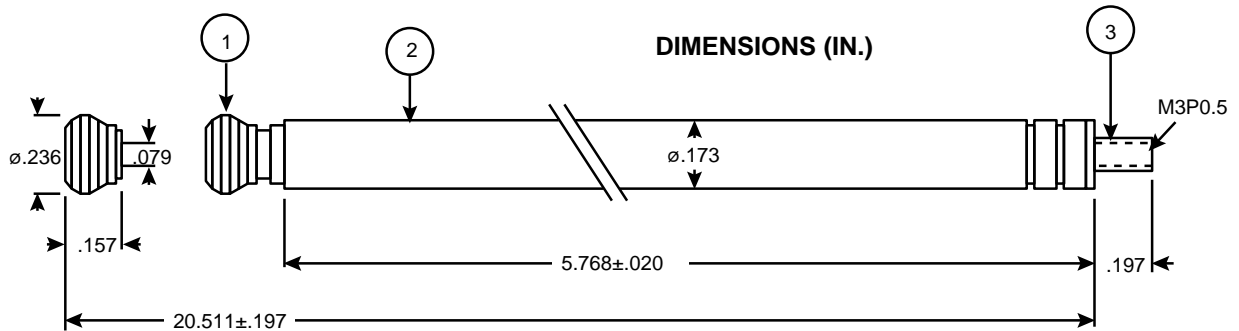
- 1 Top: BSBM
- 2 Antenna: BST
- 3 Antenna base: BSBM

#### Specifications:

- Frequency range: 88-108mHz

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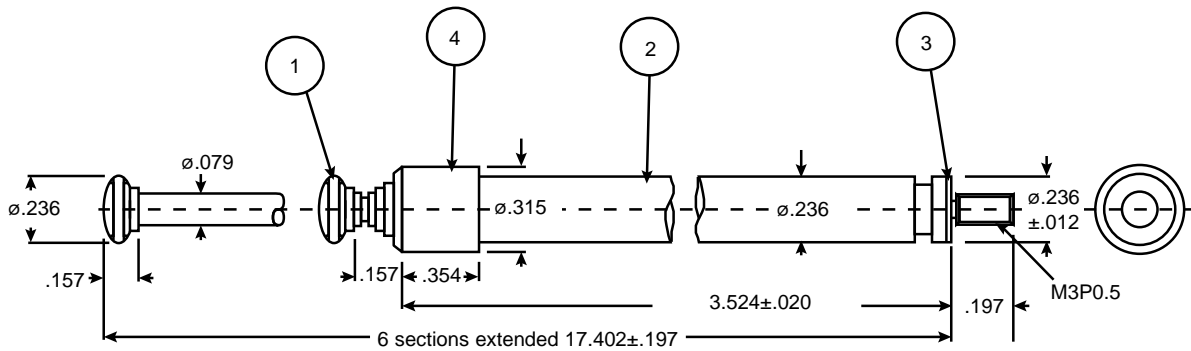


1. Top: BSBM
2. Antenna: BST
3. Antenna base: BSBM

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**Dimensions (In.)**



- 1 Head: BSBM
- 2 Antenna: BST
- 3 Antenna base: BSBM
- 4 Metal: BSBM

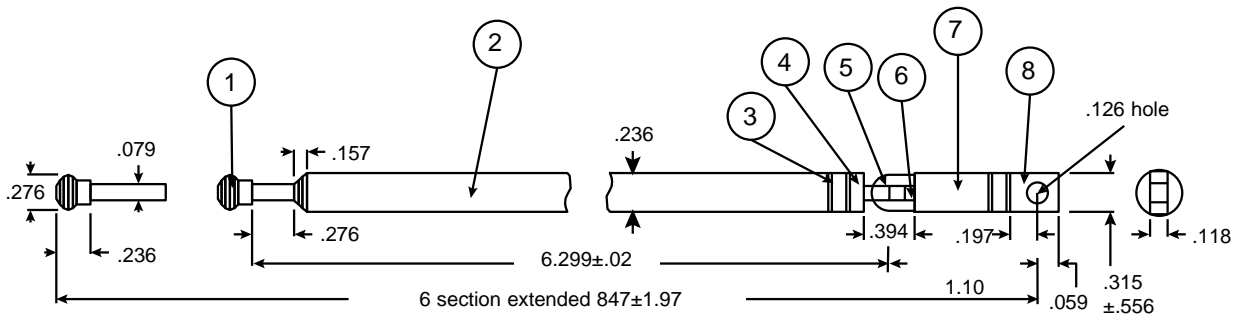
**Specifications:**

- Frequency range: 175 to 756MHz

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**DIMENSIONS (IN.)**

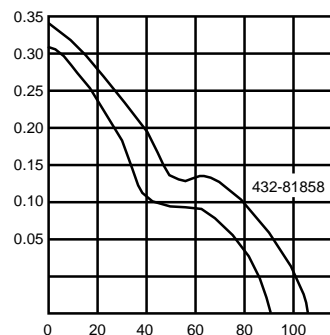
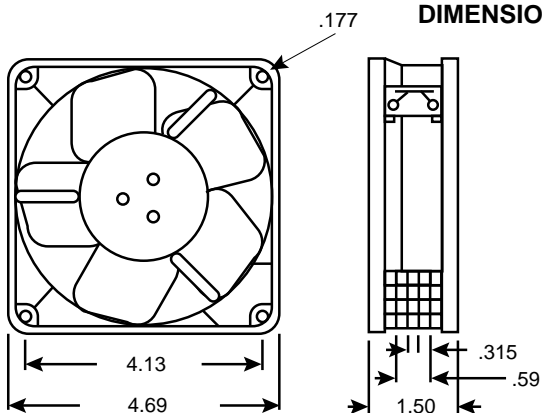


- 1. Head = BsBM
- 2. Antenna = BsT
- 3. Antenna Base = BsBM
- 4. Washer = PBs
- 5. Screw = NBsB1
- 6. Stand Metal = BsBM
- 7. Guide Pipe = BsT
- 8. Guide Base = BsBM

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### DIMENSIONS (IN.)



#### Specifications:

- Size: 119x119x38mm (4.69"x4.69"x1.5")
- All metal, die-cast aluminum housing, steel impeller, shaded pole motor, impedance protected,
- UR E94964(s), CSA LR59458-1

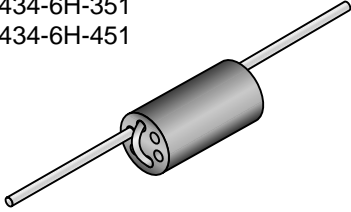
#### Operating Temperature:

- Ball bearing: -10°C to 75°C
- Weight: 21.16Oz

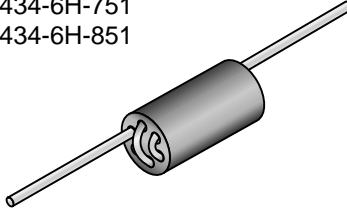
Model Number	Bearing	Voltages (VAC)	Frequency (HZ)	Current (mA) Running Lock	Power (W)	Noise dB(A)	Air Flow CFM	Speed RPM	Connection
432-81858	Ball	115	50/60	250/240 260/250	24/22	45/50	94/105	2650/3000	12" Leads
432-81866	Ball	115	50/60	240/230 250/240	23/21	38/42	70/78	2250/2500	12" Leads
432-81856	Ball	115	50/60	240/230 250/240	23/21	38/42	70/78	2250/2500	Terminals
432-81864	Ball	115	50/60	230/220 240/230	22/20	36/38	60/65	1800/2100	12" Leads
432-81854	Ball	115	50/60	230/220 240/230	22/20	36/38	60/65	1800/2100	Terminals
432-81862	Ball	115	50/60	210/200 220/210	21/19	32/35	50/55	1600/1700	12" Leads
432-81852	Ball	115	50/60	210/200 220/210	21/19	32/35	50/55	1600/1700	Terminals

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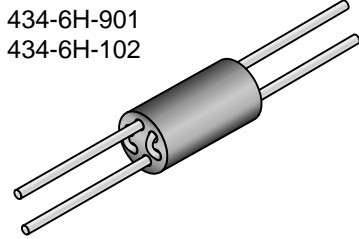
434-6H-351  
434-6H-451



434-6H-751  
434-6H-851

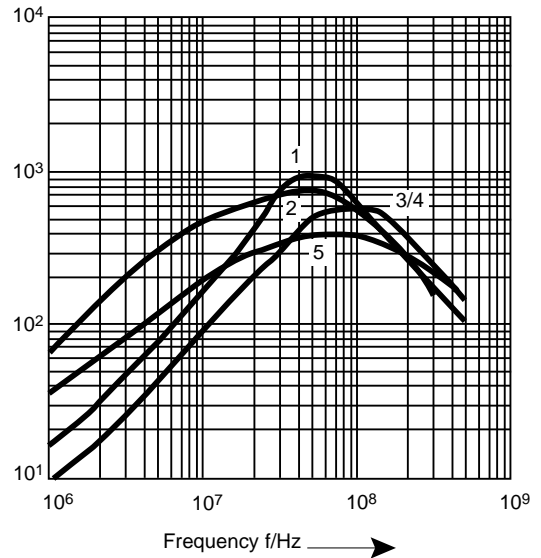
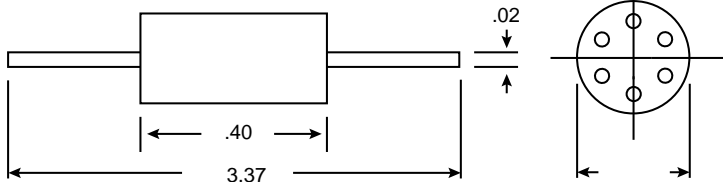


434-6H-901  
434-6H-102



- (1) 434-6H-851
- (2) 434-6H-751
- (3) 434-6H-451
- (4) 434-6H-102
- (5) 434-6H-351

**Dimensions (In.)**

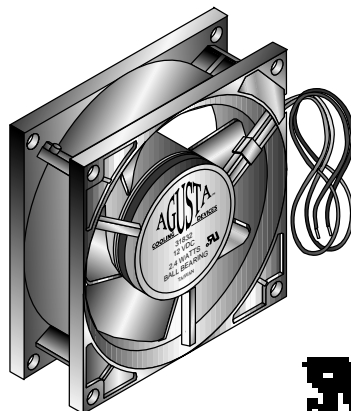


**Specifications:**

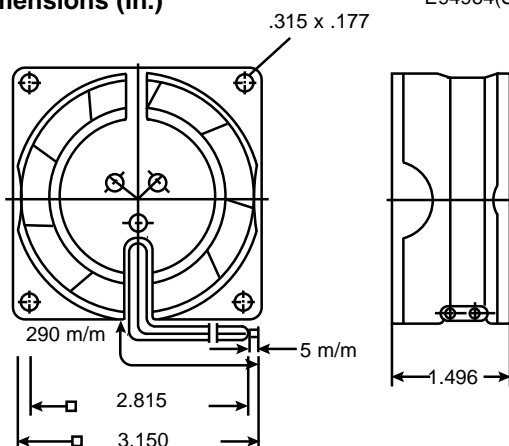
- 6 hole ferrite core
- 1.5 inch 24AWG leads

Mouser Stock No.	Winding	Impedance Min. ( $\Omega$ )			
		10MHz	50MHz	100MHz	200MHz
434-6H-351	1.5 turn	170	320	375	---
434-6H-451	1.5 turn	---	350	490	300
434-6H-751	2.5 turn	320	380	580	---
434-6H-851	2.5 turn	---	800	575	250
434-6H-901	4LD 1.5 turn	170	320	375	---
434-6H-102	4LD 1.5 turn	---	350	490	300

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Dimensions (In.)



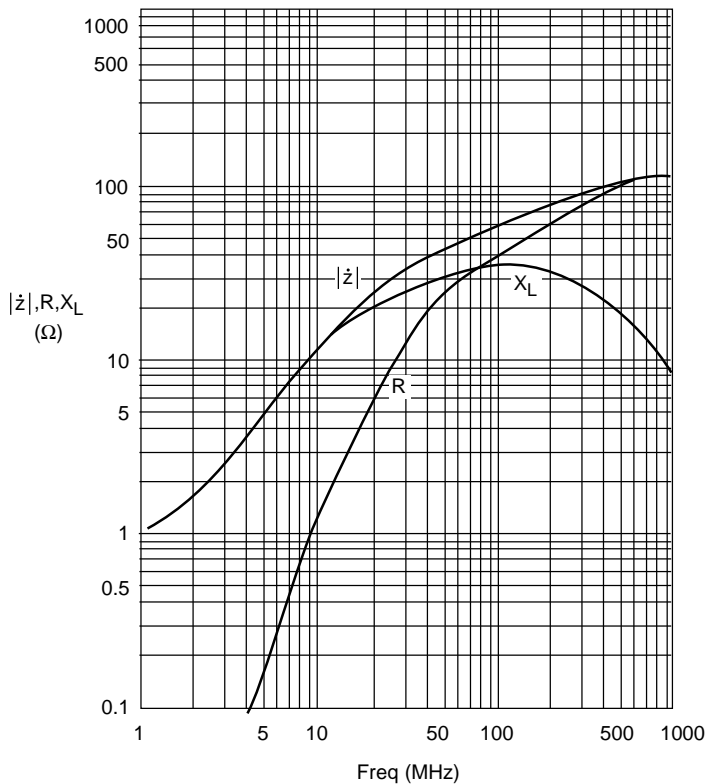
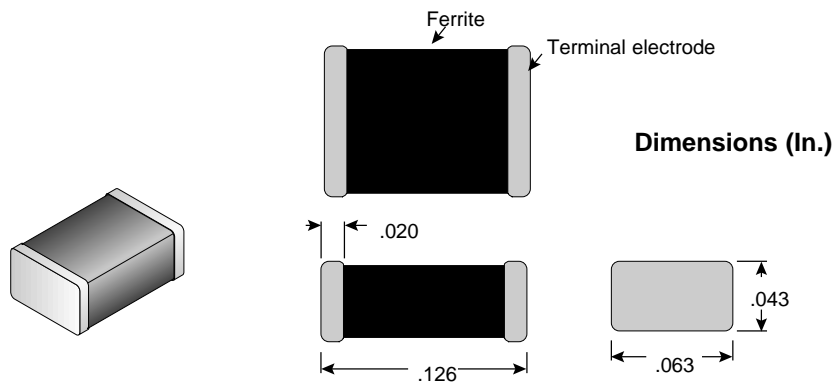
**Specifications:**

- Size: 80 x 80 x 38mm (3.15" x 3.15" x 1.05")
- Construction: All metal, Die-cast aluminum housing, steel impeller, shaded pole motor, impedance protected 290mm (12") flying leads
- Bearing: Sintered bronze sleeve bearing or ball bearings
- Operating temperature: Sleeve bearing - 10°C to 60°C  
Ball bearing - 30°C to 75°C
- Weight: 420 grams
- Life exp.: 40,000 hrs unless noted
  - \* 15,000 hrs
  - \*\* 35,000 hrs

Mouser Stock No.	Bearing	Voltages (VAC)	Frequency (Hz)	Current (mA) Running Lock	Power (W)	Noise dB(A)	Air Flow CFM	Speed PRM
432-81552	Ball	115	50 / 60	120/110 150/140	10/9	23/26	18/21	1750/2000
432-81554	Ball	115	50 / 60	130/120 160/150	10/9	27/31	22/26	2150/2500
432-81556	Ball	115	50 / 60	130/120 180/170	11/10	30/37	25/29	2400/2800
** 432-81558	Ball	115	50 / 60	140/130 190/180	11/10	33/38	28/32	2700/3100
* 432-82552	Sleeve	115	50 / 60	120/110 150/140	10/9	23/26	18/21	1750/2000
* 432-82558	Sleeve	115	50 / 60	140/130 190/180	11/10	33/38	28/32	2700/3100

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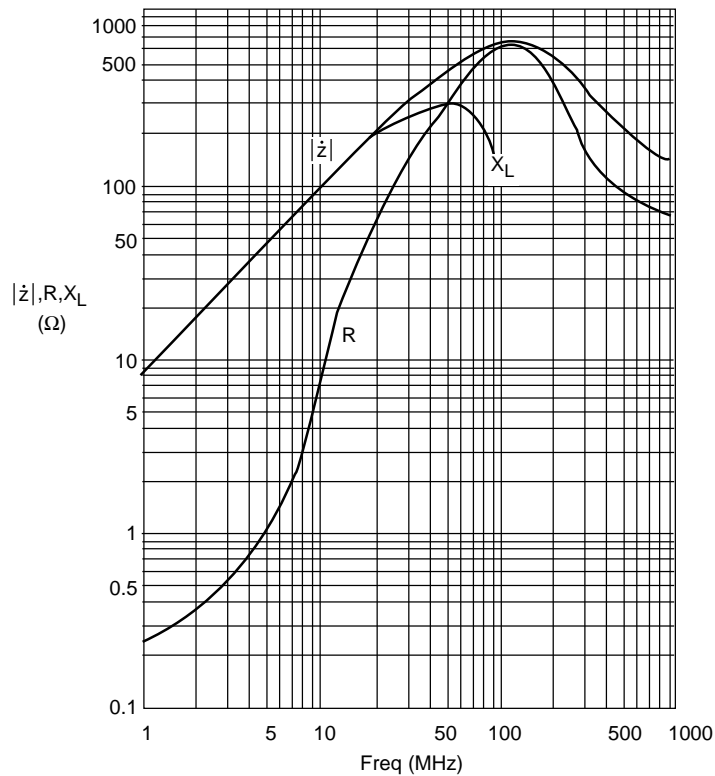
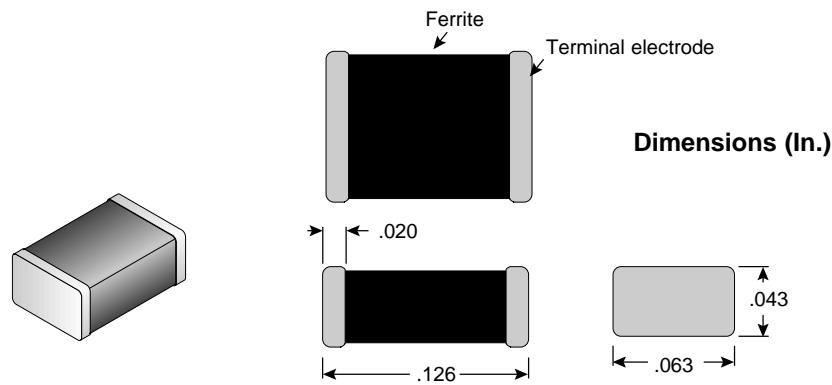
**Specifications:**

- Impedance ( $\Omega$ ) @ 100MHz:  $60 \pm 25\%$
- DC resistance:  $.50\Omega$  max.
- Rated current: 200mA max.

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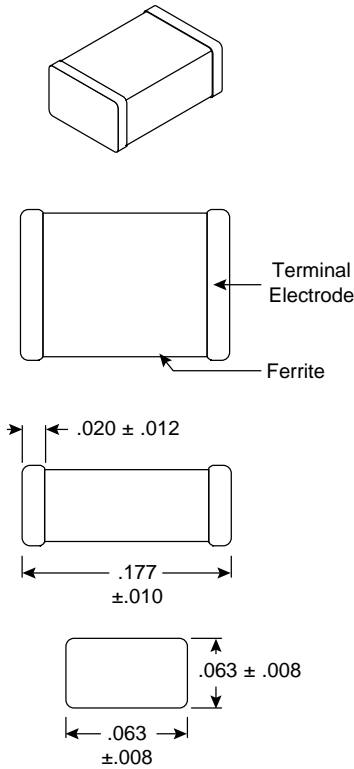
**Specifications:**

- Impedance ( $\Omega$ ) @ 100MHz:  $600 \pm 25\%$
- DC resistance:  $.40\Omega$  max.
- Rated current: 200mA max.

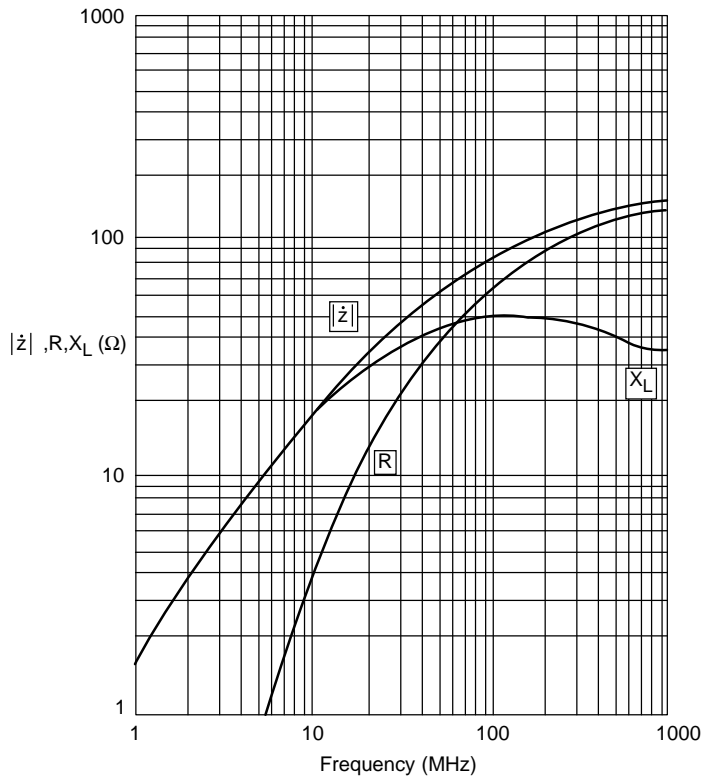
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Typical Electrical Characteristic Curve



Dimensions (In.)

**Specifications:**

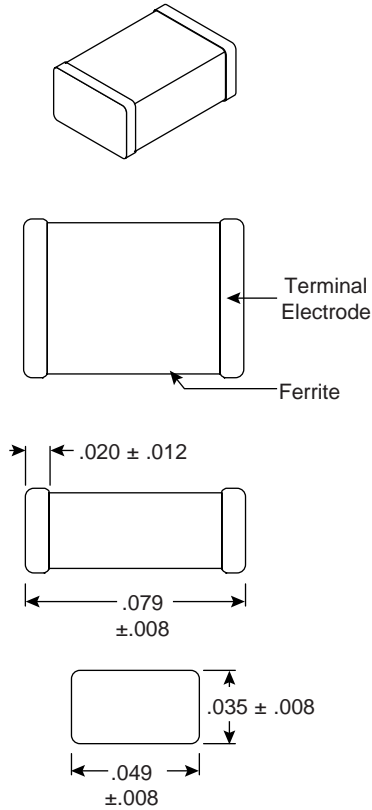
- Impedance tolerance ( $\Omega$ ):  $80 \pm 25\%$  @ 100MHz
- DC resistance:  $.30\Omega$  max.
- Rated current: 400mA (max.)
- Operating temperature:  $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Storage temperature:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Ferrite Chip Beads provide an effective means of EMI/RFI attenuation for electronic equipment. These items are specially designed for flow, reflow, and wave soldering applications.

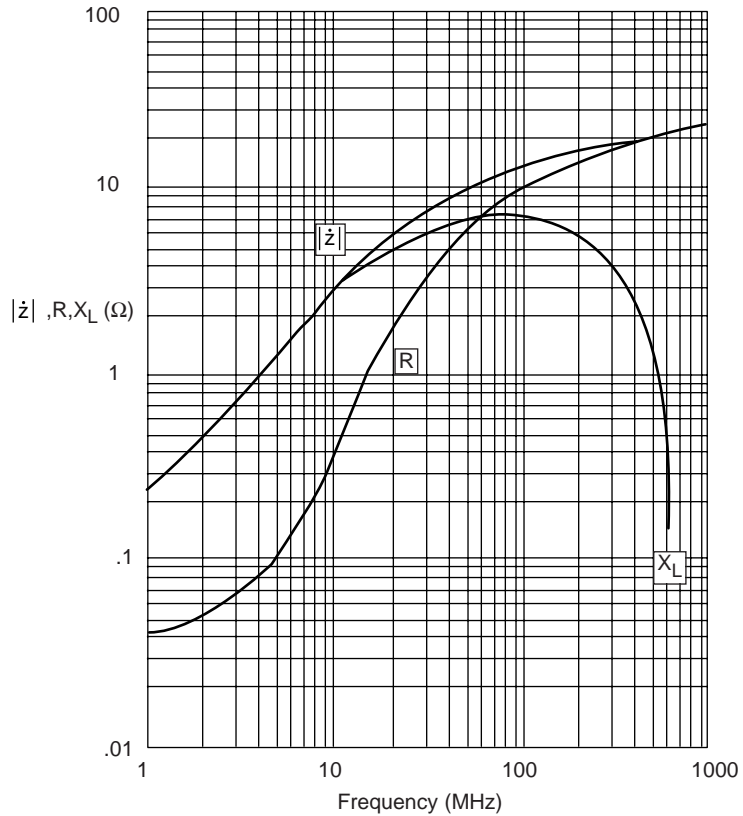
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<http://www.mouser.com>



Typical Electrical Characteristic Curve



Dimensions (In.)

Specifications:

- Impedance tolerance:  $11\Omega \pm 25\%$  @ 100MHz
- DC resistance:  $0.10\Omega$  max.
- Rated current: 600mA (max.)
- Operating temperature:  $-25^{\circ}\text{C} \sim 85^{\circ}\text{C}$
- Storage temperature:  $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Ferrite Chip Beads provide an effective means of EMI/RFI attenuation for electronic equipment. These items are specially designed for flow, reflow, and wave soldering applications.