SGS-THOMSON
MICROELECTRONICS

SENSITIVE GATE SCRs IN PLASTIC PACKAGE

Type	$I_{T(AV)}$ (A)	V_{RRM} = V_{DRM} (V)	I_{TSM} (A)	I_{RRM} @ I_{DRM} @ T_j max max (mA)	$T_j = 25°C$					dv/dt 67% V_{DRM} T_j max min Typ* (V/µs)	di/dt max (A/µs)	Package
					I_{GT} min (µA)	I_{GT} max (µA)	I_H max (mA)	V_{TM} max (V)	@ I_{TM} (A)			
0.2 A_{rms}/T_a = 25°C T_j = 125°C												
P0102 • L P0109 • L P0111 • L P0115 • L	0,12	100 → 400 (1)	7	0.1	– – 4 15	200 1 25 50	5	1,3	0,4	25 25 50 100	30	SOT23
0.8 A_{rms}/T_a = 70°C T_j = 125°C												
P0102 • N P0109 • N P0111 • N	0,5	100 → 400 (1)	7	0.1	– – 4	1 200 25	5	1.95	1.6	25 25 50	30	SOT223
0.8 A_{rms}/T_a = 70°C T_j = 125°C												
P0201 • N P0202 • N	0,5	500 → 800 (3)	7	0.1	1 –	20 200	5	1.75	1.6	100* 100	30	SOT223
0.8 A_{rms}/T_L = 55°C T_j = 125°C												
P0102 • A P0109 • A P0111 • A P0115 • A	0,5	100 → 400 (1)	7	0.1	– – 4 15	200 1 25 20	5	1.93	1.6	25 25 50 100	30	TO92
0.8 A_{rms}/T_L = 70°C T_j = 125°C												
P0201 • A P0202 • A	0,5	500 → 800 (3)	7	0.1	1 –	20 200	5	1.75	1.6	100* 100	30	TO92
1.25 A_{rms}/T_L = 60°C T_j = 125°C												
X0202 • A X0203 • A X0205 • A	0,8	200 → 800 (2)	22.5	0.2	– 20 20	200 200 50	5	1.45	2.5	15* 20* 15*	30	TO92
1.4 A_{rms}/T_{ab} = 90°C T_j = 125°C												
X0202 • N X0203 • N X0205 • N	0,9	200 → 800 (2)	22.5	0.2	– 20 20	200 200 50	5	1.5	2.8	15* 20* 15*	30	SOT223

(1) A = 100V   B = 200V   C = 300V   D = 400V   ex: PO102AN
(2) B = 200V   D = 400V   M = 600V   N = 800V   ex: XO202MN
(3) E = 500V   M = 600V   S = 700V   N = 800V   ex: PO201MA

SCRs

SGS-THOMSON
MICROELECTRONICS

SENSITIVE GATE SCRs IN PLASTIC PACKAGE (cont'd)

Type	$I_{T(AV)}$ (A)	V_{RRM} = V_{DRM} (V)	I_{TSM} (A)	I_{RRM} @ I_{DRM} @ T_j max max (mA)	$T_j = 25°C$					dv/dt 67% V_{DRM} T_j max min Typ* (V/µs)	di/dt max (A/µs)	Package
					I_{GT} min (µA)	I_{GT} max (µA)	I_H max (mA)	V_{TM} @ max (V)	I_{TM} (A)			
4 Arms/TC = 90°C Tj = 125°C												
X0402 • E X0403 • E X0405 • E	2.5	200 → 800 (2)	30	0.2	– 20 20	200 200 50	5	1.8	8	15* 20* 15*	50	TO202-1
4 Arms/TC = 90°C Tj = 125°C												
X0402 • F X0403 • F X0405 • F	2.5	200 → 800 (2)	30	0.2	– 20 20	200 200 50	5	1.8	8	15* 20* 15*	50	TO202-2
4 Arms/TC = 110°C Tj = 125°C												
S0402 • H	2.5	200 → 800 (2)	50	0.5	–	200	10	1.6	8	10*	100	TO220AB
6 Arms/TC = 100°C Tj = 125°C												
S0602 • H	3.8	200 → 800 (2)	60	0.5	–	200	10	1.6	12	10*	100	TO220AB
8 Arms/TC = 95°C Tj = 125°C												
S0802 • H	5	200 → 800 (2)	70	0.5	–	200	10	1.6	16	10*	100	TO220AB

(2) B = 200V   D = 400V   M = 600V   N = 800V   ex: XO402MN

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STANDARD SCRs IN PLASTIC PACKAGE

Type	$I_{T(AV)}$ (A)	V_{RRM} = V_{DRM} (V)	I_{TSM} (A)	I_{RRM} @ I_{DRM} @ T_j max max (mA)	$T_j = 25°C$					dv/dt 67% V_{DRM} T_j max min Typ* (V/μs)	di/dt max (A/μs)	Package
					I_{GT} min (mA)	I_{GT} max (mA)	I_H max (mA)	V_{TM} max (V)	@ I_{TM} (A)			
3 Arms/T_L = 55°C T_j = 110°C I^2t = 25A^2s												
TL1006 → 8006	2	100 → 800	70	1	–	15	20	1.9	6	200	100	TL
4 Arms/T_C = 115°C T_j = 125°C I^2t = 18A^2s												
TYN204 → 1004	2.5	200 →1000	60	2	–	15	30	1.8	8	200	100	TO220AB
4 Arms/T_C = 110°C T_j = 125°C I^2t = 12,5A^2s												
S0406 • H S0410 • H S0417 • H	2.5	200 → 800 (2)	50	0.5	0.5 10 4	5 25 15	25 75 50	1.6	8	50* 200 100	100	TO220AB
6 Arms/T_C = 110°C T_j = 125°C I^2t = 24,5A^2s												
TYN056 → 1006	3.8	50 →1000	70	2	–	15	30	1.6	12	200	50	TO220AB
6 Arms/T_C = 100°C T_j = 125°C I^2t = 18A^2s												
S0606 • H S0610 • H S0617 • H	3.8	200 → 800 (2)	60	0.5	0.5 10 4	5 25 15	25 75 50	1.6	12	50* 200 100	100	TO220AB
8 Arms/T_C = 105°C T_j = 125°C I^2t = 32A^2s												
TYN058 → 1008(*)	5	50 →1000	80	2	Without suffix 15 Suffix G 25		30 45	1.6	16	200 500	50	TO220AB
8 Arms/T_C = 95°C T_j = 125°C I^2t = 32A^2s												
S0806 • H S0810 • H S0817 • H	5.1	200 → 800 (2)	80	0.5	0.5 10 4	5 25 15	25 75 50	1.6	16	50* 200 100	100	TO220AB
10 Arms/T_C = 100°C T_j = 125°C I^2t = 50A^2s												
TYN0510 → 1010	6.4	50 →1000	100	2	–	15	30	1.6	20	200	50	TO220AB
10 Arms/T_C = 95°C T_j = 125°C I^2t = 50A^2s												
S1006 • H S1010 • H S1017 • H	6.4	200 → 800 (2)	100	1.5	0.5 10 4	5 25 15	15 50 30	1.6	20	10* 200 100	100	TO220AB

(*) Insulating version available (TXN)

(2) B = 200V   D = 400V   M = 600V   N = 800V   ex: SO610MH

SCRs

STANDARD SCRs IN PLASTIC PACKAGE (cont'd)

Type	$I_{T(AV)}$ (A)	V_{RRM} = V_{DRM} (V)	I_{TSM} (A)	I_{RRM} @ I_{DRM} @ T_j max max (mA)	$T_j = 25°C$					dv/dt 67% V_{DRM} T_j max min Typ* (V/μs)	di/dt max (A/μs)	Package
					I_{GT} min (mA)	I_{GT} max (mA)	I_H max (mA)	V_{TM} @ I_{TM} max (V)	(A)			
12 Arms/TC = 90°C Tj = 125°C I²t = 72A²s												
<u>TYN0512</u> → 1012(*)	8	50 →1000	120	2	–	15	30	1.6	24	200	100	TO220AB
12 Arms/TC = 90°C Tj = 125°C I²t = 72A²s												
S1206 • H S1210 • H S1217 • H	7.6	200 → 800 (2)	120	1.5	0.5 10 4	5 25 15	15 50 30	1.6	24	10* 200 100	100	TO220AB
16 Arms/TC = 95°C Tj = 125°C I²t = 128A²s												
<u>TYN0516</u> → 816	10	50 → 800	160	2	–	25	40	1.6	32	500	100	TO220AB
16 Arms/TC = 90°C Tj = 125°C I²t = 128A²s												
S1610 • H S1616 • H	10	200 → 800 (2)	160	2	10 25	25 50	50 100	1.6	32	400 500	100	TO220AB
20 Arms/TC = 105°C Tj = 125°C I²t = 310A²s												
<u>TYN682</u> → 692	13	50 → 800	250	2	–	25	40	1.4	50	500	100	TO220AB
25 Arms/TC = 95°C Tj = 125°C I²t = 310A²s												
<u>TYN225</u> → 1025	16	200 →1000	250	4	–	40	50	1.6	50	500	100	TO220AB
25 Arms/TC = 85°C Tj = 125°C I²t = 310A²s												
S2514 • H S2516 • H	16	200 → 800 (2)	250	2.5	30 20	75 50	115 100	1.6	50	750 500	100	TO220AB
30 Arms/TC = 90°C Tj = 125°C I²t = 512A²s												
S3014 • H S3016 • H	19	800 →1200 (4)	320	5	30 20	75 50	115 100	1.6	60	500 500	100	TO220AB
40 Arms/TC = 85°C Tj = 125°C I²t = 722A²s												
S4014 • H S4016 • H	25	200 → 800 (2)	380	3	30 20	75 50	115 100	1.6	80	750 500	100	TO220AB

(*) Insulating version available (TXN)

(2) B = 200V   D = 400V   M = 600V   N = 800V   ex: S1610MH

(4)   N = 800V   P = 1000V   V = 1200V   ex: S3016PH

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STANDARD GATE SCRs IN PLASTIC PACKAGE

Type (See Note)	Fax Code	$I_{T(AV)}$ (A)	V_{RRM} = V_{DRM} (V)	I_{TSM} (A)	I_{RRM} @ V_{RRM} I_{DRM} @ V_{DRM} T_j max max (mA)	T_j = 25°C					dv/dt @ 67% V_{DRM} T_j max min (V/µs)	di/dt max (A/µs)	Package
						V_{GT} max (V)	I_{GT} max (mA)	I_H max (mA)	V_{TM} max (V)	@ I_{TM} (A)			
30 A_{rms}/T_{case} = 80°C T_j = 125°C I^2t = 800 A^2s													
BTW 68-200 → 1200		19	200 →1200	400	6	1.5	50	75	2.1	60	500 (1) 250 (2)	100	TOP3
30 A_{rms}/T_{case} = 75°C T_j = 125°C I^2t = 800 A^2s													
BTW 66-200 → 1200		20	200 →1200	400	6	1.5	50	75	2.2	60	500 (1) 250 (2)	100	RD91
35 A_{rms}/T_{case} = 85°C T_j = 125°C I^2t = 800 A^2s													
BTW 68-600 N → 1200 N		22	600 →1200	400	6	1.5	50	75	2.2	70	500 (1) 250 (2)	100	TOP3
40 A_{rms}/T_{case} = 75°C T_j = 125°C I^2t = 1250 A^2s													
BTW 67-200 → 1200		25	200 →1200	500	6	1.5	80	150	2	80	500 (1) 250 (2)	100	RD91
50 A_{rms}/T_{case} = 70°C T_j = 125°C I^2t = 1250 A^2s													
BTW 69-200 → 1200		32	200 →1200	500	6	1.5	80	150	1.9	100	500 (1) 250 (2)	100	TOP3
55 A_{rms}/T_{case} = 75°C T_j = 125°C I^2t = 1250 A^2s													
BTW 69-600 N → 1200 N		35	600 →1200	500	6	1.5	80	150	2	110	500 (1) 250 (2)	100	TOP3

Note: BTW insulated (insulating voltage = 2500 V_{RMS}).
    BTW + suffix N uninsulated.

(1) $V_{DRM} \leq$ 800 V.
(2) $V_{DRM} \geq$ 1000 V.

SCRs

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SENSITIVE AND FAST SCR

Type	$I_{T(AV)}$ (A)	$V_{RRM} = V_{DRM}$ (V)	I_{TSM} (A)	I_{RRM} @ V_{RRM} I_{DRM} @ V_{DRM} T_j max max (mA)	$T_j = 25°C$					dv/dt @ 67% V_{DRM} T_j max min (V/μs)	di/dt T_j=25°C max (A/μs)	tq max (ns)	Package
					I_{GT} min (mA)	I_{GT} max (mA)	I_H max typ* (mA)	V_{TM} @ I_{TM} max (V)	(A)				
3.5 A_{rms}/T_{case} = 85°C T_j = 125°C I^2t = 2 A^2s													
▲ TR03- 400T	2	400	20	0.2	–	1.5	5*	2.2	10	20	100	15	TO220AB
8 A_{rms}/T_C = 95°C T_j = 125°C I^2t = 32 A^2s													
F0810 • H	5.1	200 → 800 (2)	80	1.5	10	25	75	2	16	300	100	20	TO220AB

SCRs FOR OVERVOLTAGE PROTECTION IN PLASTIC PACKAGE

Type	$I_{T(AV)}$ (A)	$V_{RRM} = V_{DRM}$ (V)	I_{TSM} (A)	I_{RRM} @ V_{RRM} I_{DRM} @ V_{DRM} T_j max max (mA)	$T_j = 25°C$					dv/dt @ 67% V_{DRM} T_j max min (V/μs)	di/dt max (A/μs)	Package
					V_{GT} max (V)	I_{GT} max (mA)	I_H max (mA)	V_{TM} @ I_{TM} max (V)	(A)			
12 A_{rms}/T_{case} = 110°C T_j = 125°C I^2t = 450 A^2s												
TYP 212 → 2012	8	25 → 200	300	2	1.5	30	50	1.5	50	200	100	TO220AB

▲ New product.
(2) B = 200V   D = 400V   M = 600V   N = 800V   ex: F0810MH

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MODULE

Type	$I_{T(AV)}$ (A)	V_{RRM} = V_{DRM} (V)	I_{TSM} (A)	I_{RRM} @ V_{RRM} I_{DRM} @ V_{DRM} Tj max max (mA)	$T_j = 25°C$					dv/dt @ 67% V_{DRM} min (V/μs)	di/dt max (A/μs)	Package
					V_{GT} max (V)	I_{GT} max (mA)	I_H max (mA)	V_{TM} max (V)	I_{TM} (A)			

50 A_{rms}/T_{case} = 85°C T_j = 125°C I^2t = 800 A^2s

Type	$I_{T(AV)}$	V_{RRM}=V_{DRM}	I_{TSM}	I@V	V_{GT}	I_{GT}	I_H	V_{TM}	I_{TM}	dv/dt	di/dt	Package
MDS35-800 → 1200	25	800 → 1200	400	10	1.5	50	80	1.7	80	500	100	ISOTOP® (Screw version)

70 A_{rms}/T_{case} = 85°C T_j = 125°C I^2t = 1800 A^2s

Type	$I_{T(AV)}$	V_{RRM}=V_{DRM}	I_{TSM}	I@V	V_{GT}	I_{GT}	I_H	V_{TM}	I_{TM}	dv/dt	di/dt	Package
MDS50-800 → 1200	35	800 → 1200	600	10	1.5	50	80	1.75	110	500	100	ISOTOP® (Screw version)

55 A_{rms}/T_{case} = 80°C T_j = 125°C I^2t = 800 A^2s

Type	$I_{T(AV)}$	V_{RRM}=V_{DRM}	I_{TSM}	I@V	V_{GT}	I_{GT}	I_H	V_{TM}	I_{TM}	dv/dt	di/dt	Package
▲ MSS40-800 → 1400		800 → 1400	400	10	1.5	50	80	1.7	80	500	100	ISOTOP® (Screw version)

70 A_{rms}/T_{case} = 80°C T_j = 125°C I^2t = 1800 A^2s

Type	$I_{T(AV)}$	V_{RRM}=V_{DRM}	I_{TSM}	I@V	V_{GT}	I_{GT}	I_H	V_{TM}	I_{TM}	dv/dt	di/dt	Package
▲ MSS50-800 → 1400		800 → 1400	600	10	1.5	50	80	1.7	100	500	100	ISOTOP® (Screw version)

▲ : New product 1400 V

	MSS	MDS
Structure		
Pin connection		