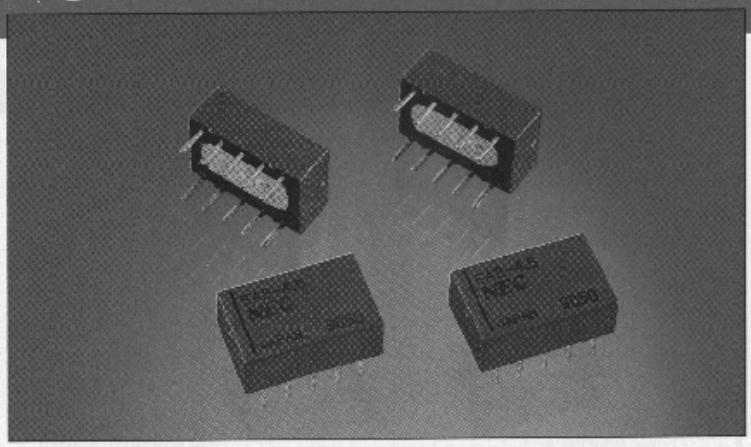
# IMO DPDT Signal Relay EA2

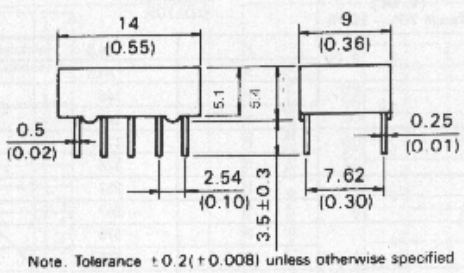
- DIL package
- High sensitivity coil
- Ultra low profile, minimal board area
- Fully sealed for immersion cleaning
- Low magnetic interference
- FCC Part 68 compliant
- Latching versions available
- UL recognised (E73266), CSA Certified (LR46266)



## Specifications

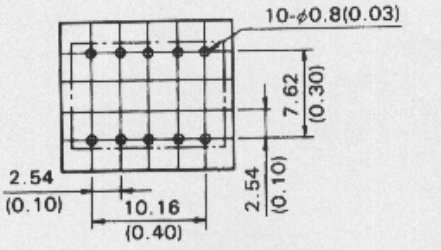
| | | | |
|---|---|---|---|
| Contact Form | | 2 form C | |
| Contact Rating | Maximum Switching Power | 30 W (resistive) | 62.5 VA (resistive) |
| | Maximum Switching Voltage | 220 V. DC | 250 V. AC |
| | Maximum Switching Current | 1 A | |
| | Maximum Carrying Current | 2A (@ 20°C) | |
| Initial Contact Resistance | | 50 mΩ TYP. | |
| Contact Material | | Silver alloy with gold overlay | |
| Nominal Operating Power | Non-Latch Type and Double Coil Latch Type | 140 mW (3 to 12 V) | |
| | | 200 mW (24 V) | |
| | Single Coil Latch Type | 100 mW (3 to 12 V) | |
| | | 150 mW (24 V) | |
| Minimum Operating Power | Non-Latch Type and Double Coil Latch Type | 79 mW (3 to 12 V) | |
| | | 113 mW (24 V) | |
| | Single Coil Latch Type | 56 mW (3 to 12 V) | |
| | | 85 mW (24 V) | |
| Operate Time (excluding bounce) | | Approximately 2 ms without diode | |
| Release Time (excluding bounce) | | Approximately 1 ms without diode | |
| Insulation Resistance | | 1000 MΩ at 500 V. DC | |
| Breakdown Voltage | Between Open Contacts | 1000 V. AC (for one minute) | |
| | Between Adjacent Contacts | 1000 V. AC (for one minute) | |
| | Between Coil and Contact | 1000 V. AC (for one minute) | |
| Shock Resistance | | 75 G (misoperating) | |
| Vibration Resistance | | 20 G (misoperating) | |
| Ambient Temperature | | -40 to +85°C | |
| Coil Temperature Rise | | 18 degrees at nominal coil voltage (140mW) | |
| Life Expectancy | Mechanical | 100 x $10^6$ operations | |
| | Electrical | 30 V. DC 1 A (resistive), 200 x $10^3$ operations | |
| | | 125 V. AC 0.5 A (resistive), 100 x $10^3$ operations | |
| Weight | | Approximately 1.5 grams | |

## Dimensions



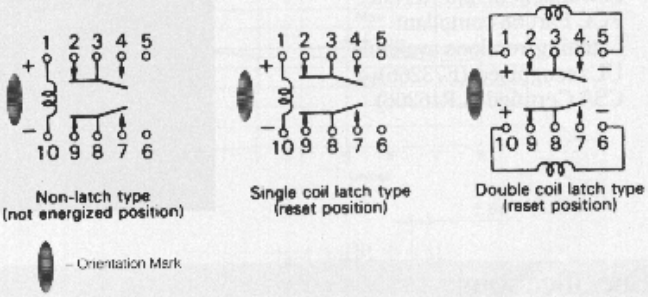

Note. Tolerance ±0.2(±0.008) unless otherwise specified

## PCB layout (bottom view)




Note. Tolerance ±0.1(±0.004) unless otherwise specified

## Pin configuration (bottom view)




## Part Numbers

### Standard Type

at 25°C

| Part Number | | Nominal Coil Voltage (V. DC) Range 75% – 150% | Coil Resistance (Ω)±10% | Must Operate Voltage (V. DC) | Must Release Voltage (V. DC) |
|---|---|---|---|---|---|
| Standard Type | UL/CSA Recognised Type | | | | |
| EA2-3 | EA2-3NU | 3 | 64.3 | 2.25 | 0.3 |
| EA2-4.5 | EA2-4.5NU | 4.5 | 145 | 3.38 | 0.45 |
| EA2-5 | EA2-5NU | 5 | 178 | 3.75 | 0.5 |
| EA2-6 | EA2-6NU | 6 | 257 | 4.5 | 0.6 |
| EA2-9 | EA2-9NU | 9 | 579 | 6.75 | 0.9 |
| EA2-12 | EA2-12NU | 12 | 1028 | 9 | 1.2 |
| EA2-24 | EA2-24NU | 24 | 2880 | 18 | 2.4 |

### Latching Type (Single Wound Coil)

at 25°C

| Part Number | | Nominal Coil Voltage (V. DC) Range 75% – 150% | Coil Resistance (Ω)±10% | Must Operate Voltage (V. DC) | Must Release Voltage (V. DC) |
|---|---|---|---|---|---|
| Standard Type | UL/CSA Recognised Type | | | | |
| EA2-3S | EA2-3SNU | 3 | 90 | 2.25 | 2.25 |
| EA2-4.5S | EA2-4.5SNU | 4.5 | 202 | 3.38 | 3.38 |
| EA2-5S | EA2-5SNU | 5 | 250 | 3.75 | 3.75 |
| EA2-6S | EA2-6SNU | 6 | 360 | 4.5 | 4.5 |
| EA2-9S | EA2-9SNU | 9 | 810 | 6.75 | 6.75 |
| EA2-12S | EA2-12SNU | 12 | 1440 | 9 | 9 |
| EA2-24S | EA2-24SNU | 24 | 3840 | 18 | 18 |

### Latching Type (Double Wound Coil)

at 25°C

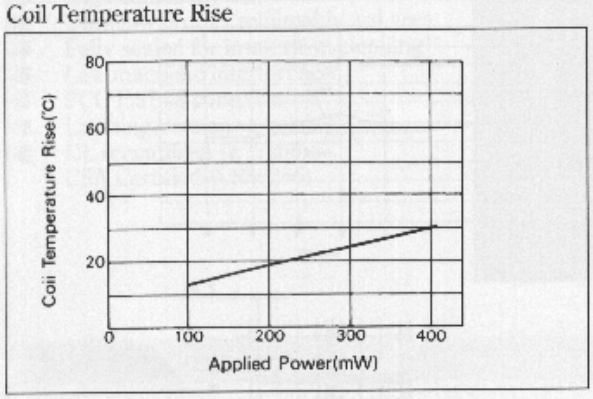
| Part Number | | Nominal Coil Voltage (V. DC) Range 75% – 150% | Coil Resistance (Ω)±10% | | Must Operate Voltage (V. DC) | Must Release Voltage (V. DC) |
|---|---|---|---|---|---|---|
| Standard Type | UL/CSA Recognised Type | | | | | |
| EA2-3T | EA2-3TNU | 3 | P | 64.3 | 2.25 | – |
| | | | S | 64.3 | – | 2.25 |
| EA2-4.5T | EA2-4.5TNU | 4.5 | P | 145 | 3.38 | – |
| | | | S | 145 | – | 3.38 |
| EA2-5T | EA2-5TNU | 5 | P | 178 | 3.75 | – |
| | | | S | 178 | – | 3.75 |
| EA2-6T | EA2-6TNU | 6 | P | 257 | 4.5 | – |
| | | | S | 257 | – | 4.5 |
| EA2-9T | EA2-9TNU | 9 | P | 579 | 6.75 | – |
| | | | S | 579 | – | 6.75 |
| EA2-12T | EA2-12TNU | 12 | P | 1028 | 9 | – |
| | | | S | 1028 | – | 9 |
| EA2-24T | EA2-24TNU | 24 | P | 2880 | 18 | – |
| | | | S | 2880 | – | 18 |

P – Primary coil S – Secondary coil

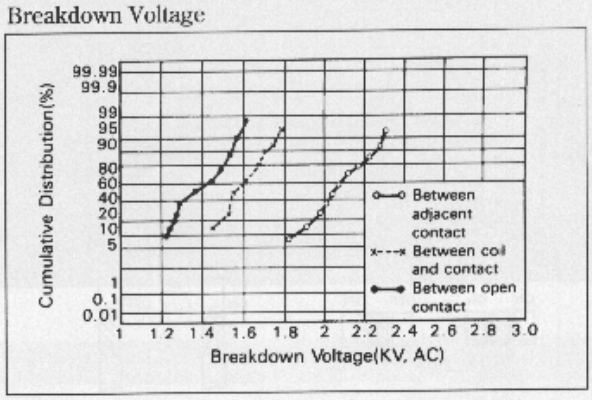
# IMO

## Data

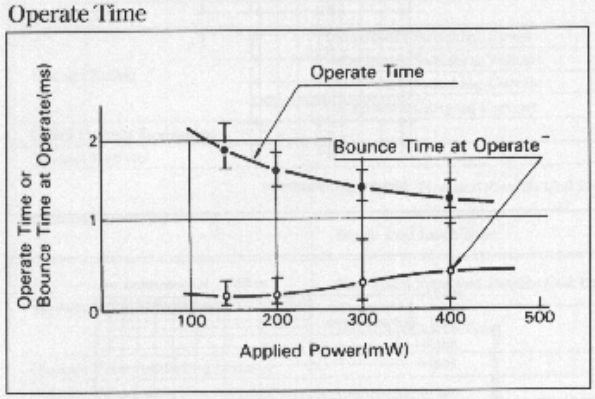
### Coil Temperature Rise



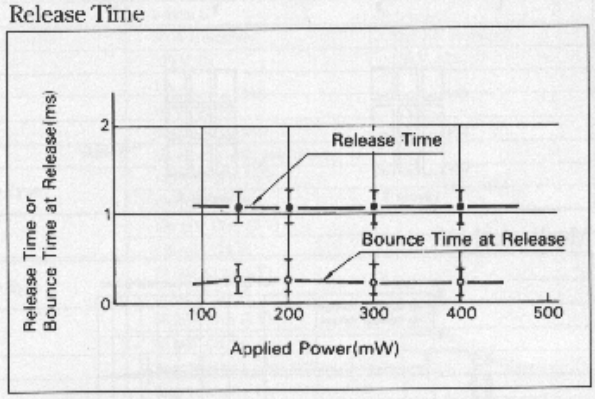

### Breakdown Voltage



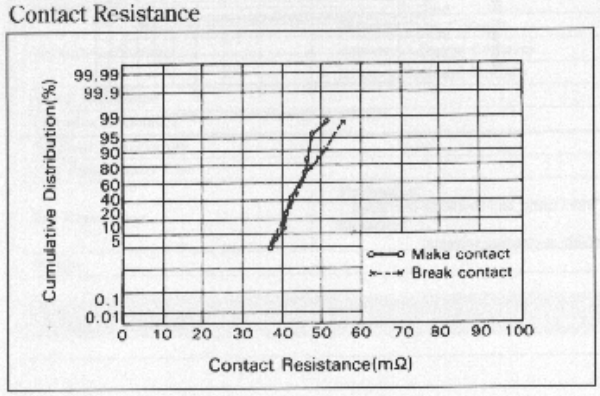

### Operate Time



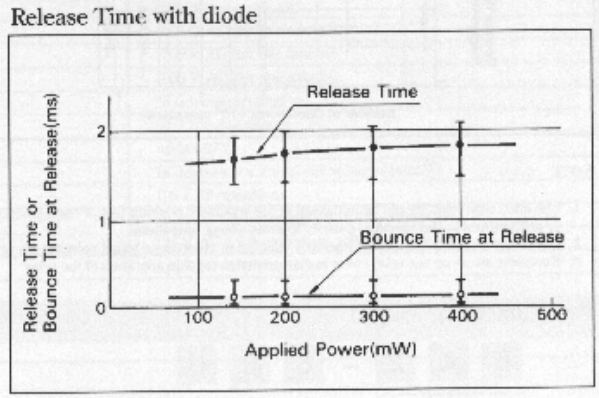

### Release Time



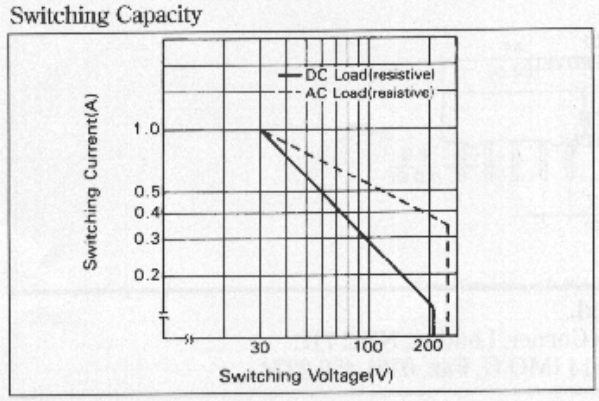

### Contact Resistance



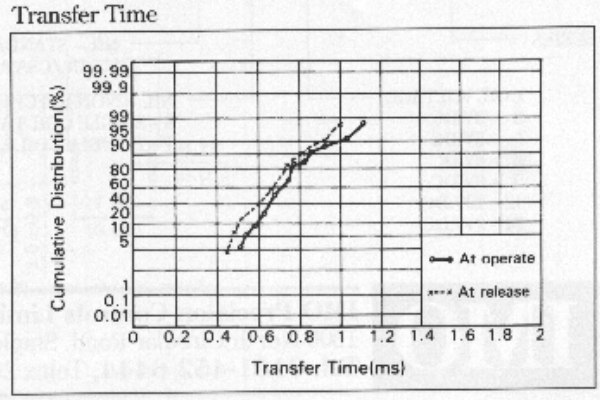

### Release Time with diode



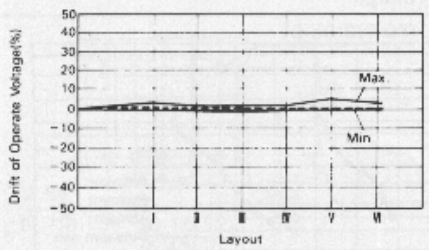

### Switching Capacity

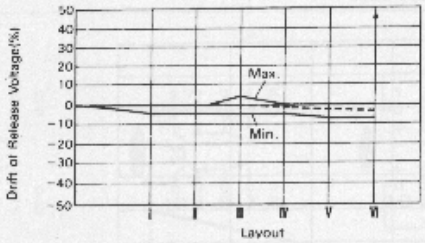


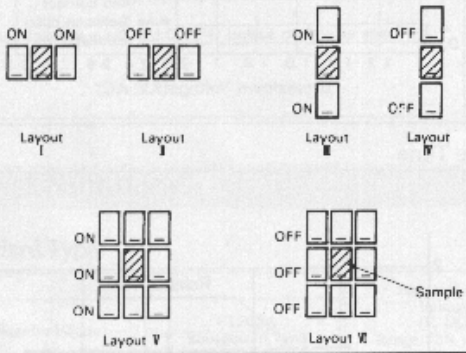

### Transfer Time

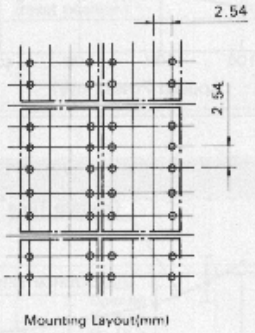


## Magnetic Interference (EA2 Relay)

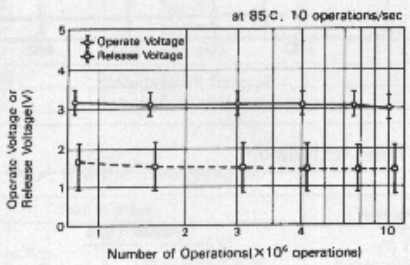


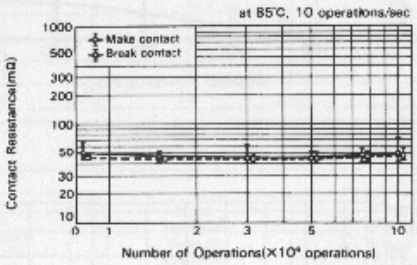




## Mechanical Life




NOTE

1. The latch type relay should be initialised at the appointed position (set or reset position) when using, and should be energised or deenergised to the specified polarity to avoid wrong operations.
2. Ultrasonic cleaning is not recommended. Alcohol or chlorosene based solvents are acceptable as cleaning solvents.
3. Excessive stress on the relay cover is detrimental to reliable operation of the relay.

## Part Numbering System

**E A 2 - 5 S U**

SERIES

COIL VOLTAGE
3 – 3V.DC
5 – 5V.DC
6 – 6V.DC
9 – 9V.DC
12 – 12V.DC
24 – 24V.DC

NIL – NON-LATCH
S – SINGLE COIL LATCH
T – DOUBLE COIL LATCH

NIL – STANDARD
U – UL/CSA APPROVED

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