# **MR301 Series**

# **9**] (2)



The MR301 series, which has a low profile package and light weight, is suited for various kinds of consumer equipments, industrial machines and automobiles.

# FEATURES

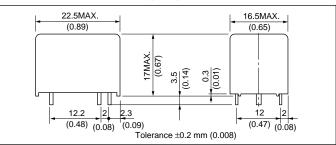
- · Low profile, light weight.
- Two types of contact (General type: 5A switching, High power type; 10A
- switching) • Fluxtight or washable package is available.
- UL recognized (E 73266), CSA certified (LR46266)

# ■ SAFETY STANDARD AND RATING

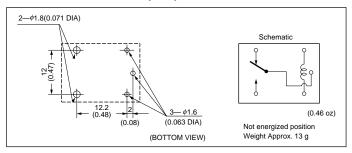
| ULRecognized (UL508)*<br>File No. E73266   | CSA Certificated<br>(CSA C22.2 No.14)<br>File No. LR46266  |  |  |  |
|--|--|--|--|--|
| MR301-**HU   | MR301-**HU   |  |  |  |
| 1/2HP 240VAC<br>1/4HP 125VAC<br>30VDC, 7 A (Resistive)<br>60VDC, 1.0 A (Resistive)<br>277VDC, 5 A (Resistive)<br>120VDC, 10 A (Resistive)<br>360 W, 120VAC Tungsten<br>120VAC, 2 A Ballast<br>TV-2, 120VAC | 1/2HP 240VAC<br>1/4HP 125VAC<br>30VDC, 7 A (Resistive)<br>60VDC, 1.0 A (Resistive)<br>277VDC, 5 A (Resistive)<br>120VDC, 10 A (Resistive)<br>360 W, 120VAC Tungsten<br>120VAC, 2 A Ballast |  |  |  |
| MR301-**U<br>1/4HP 240VAC<br>1/8HP 125VAC<br>30VDC, 5 A (Resistive)<br>277VDC, 2.5 A (Resistive)<br>120VDC, 5 A (Resistive)<br>130 W, 120VAC Tungsten<br>120VAC, 2 A Ballast                               |  |  |  |  |

\* Spacing : UL114, UL478

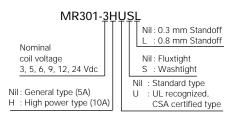
#### ■ DIMENSIONS mm(inch)



RECOMMENDED PCB PAD LAYOUT and SCHEMATICS mm (inch)



# PART NUMBER SYSTEM



### ■ SPECIFICATIONS

at 20°C

| Types (Contact Rating)          |  |  | MR301<br>(5A)   | MR301-H<br>(10A)   |
|---------------------------------|--|--|---|--|
| Contact Form                    |  | 1 Form c   |   |  |
| Contact Ratings                 | Maximum Switching Power (Resistive Load)   |  | 150 W, 600 VA   | 300 W, 1200 VA   |
|                                 | Maximum Switching Voltage (Resistive Load) |  | 250 Vac, 30 Vdc   |  |
|                                 | Maximum Switching Current (Resistive Load) |  | 5 A   | 10 A   |
|                                 | Minimum Switching Voltage and Current      |  | 5 Vdc, 0.1 A  | 5 Vdc, 1 A   |
|                                 | Initial Contact Resistance                 |  | 8.8 mΩ typ. (measured by voltage drop at 5 Vdc, 0.5A)                                       | 8.8 m $\Omega$ typ. (measured by voltage drop at 5 Vdc, 24 |
| Contact Material                |  |  | Silver nickel alloy   | Silver oxide complex alloy                                 |
| Operate Time (Excluding bounce) |  | Approx. 5 ms (at   | Approx. 5 ms (at nominal voltage)   |  |
| Release Time (Excluding bounce) |  | Approx. 2 ms (at nominal voltage) without diode              |   |  |
| Nominal Operate Power           |  | 360 mW   |   |  |
| Insulation Resista              | nce  |  | 1000 MΩ at 500 Vdc  |  |
| Brookdown Voltag                | 10   | Between open contacts  | 750 Vac (for one minute)  |  |
| Breakdown Voltage               |  | Between contacts and coil                                    | 1500Vac (for one minute)  |  |
| Electrostatic Capacitance       |  | Between open contacts  | Approx. 1 pF  |  |
|                                 |  | Between contacts and coil                                    | Approx. 10 pF   |  |
| Shock Resistance                | Shock Resistance                           |  | 98 m/s <sup>2</sup> (10G) (misoperating), 980 m/s <sup>2</sup> (100G) (destructive failure) |  |
| Vibration Resistance            |  | 10 to 300 Hz, 43 m/s2 (4.4G)(misoperating),                  |   |  |
|                                 |  | 10 to 500 Hz, 43 m/s2 (4.4G), 200 hours destructive failure) |   |  |
| Ambient Tempera                 | Ambient Temperature                        |  | -40 to +85 °C (-40 to +185 °F)  |  |
| Coil Temperature Rise           |  | 50 °C / W (122 °F/W)   |   |  |
| Running Specifica               | tions                                      | Non load   | $10 \times 10^6$ operations   |  |
| Running Specifica               | 1110115                                    | Load   | $100 \times 10^3$ operations  |  |
| Weight                          |  |  | Approx. 13g(0.46 oz)  |  |

at 20°C

# ■ COIL RATING

| 1   | ninal<br>Itage | Coil Resistance $(\Omega) \pm 10\%$ | Must Operate Voltage*<br>( Vdc) | Must Release Voltage*<br>(Vdc) |
|-----|----------------|-------------------------------------|---------------------------------|--------------------------------|
|     | 3              | 25                                  | 2.1                             | 0.3                            |
|     | 5              | 70                                  | 3.5                             | 0.5                            |
| Vdc | 6              | 100                                 | 4.2                             | 0.6                            |
| Vuc | 9              | 225                                 | 6.3                             | 0.9                            |
|     | 12             | 400                                 | 8.4                             | 1.2                            |
| [   | 24             | 1600                                | 16.8                            | 2.4                            |

\* Test by pulse voltage

The information in this document is based on documents issued in April, 1998 at the latest. The information is subject to change without notice. For actual design-in, refer to the latest publications of data sheet, etc., for the most up-date specifications of the device.

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Anti-radioactive design is not implemented in this product.