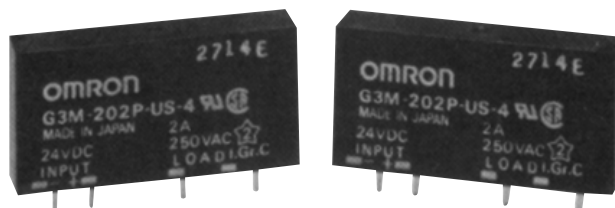


- Zero-cross type added to compact, low-cost G3M series
- Thin design for high-density PCB applications
- DC input – AC output for 2 A load
- Footprint compatible with industry standard I/O modules



## Ordering Information

| Isolation  | Indicator | Zero cross function | Part number    |
|------------|-----------|---------------------|----------------|
| Phototriac | No        | Yes                 | G3M-202P-US-4  |
|            |           | No                  | G3M-202PL-US-4 |

Note: 1. To order TÜV approved versions, contact your local OMRON representative.  
2. Each model has 5 VDC, 12 VDC, and 24 VDC input versions. Add input voltages to end of part number when ordering.

## Specifications

### ■ INPUT RATINGS

Ambient temperature: 25°C (77°F)

| Rated voltage | Operating voltage range | Impedance                | Voltage level        |                      |
|---------------|-------------------------|--------------------------|----------------------|----------------------|
|               |                         |                          | Must operate voltage | Must dropout voltage |
| 5 VDC         | 4 to 6 VDC              | 300 $\Omega \pm 20\%$    | 4 VDC max.           | 1 VDC min.           |
| 12 VDC        | 9.60 to 14.40 VDC       | 800 $\Omega \pm 20\%$    | 9.60 VDC max.        | 1 VDC min.           |
| 24 VDC        | 19.20 to 28.80 VDC      | 1.60 k $\Omega \pm 20\%$ | 19.20 VDC max.       | 1 VDC min.           |

Note: Each model has 5 VDC, 12 VDC, and 24 VDC input versions. Add input voltages to end of part number when ordering.

### ■ OUTPUT RATINGS

| Type         | Applicable load    |              |                       |
|--------------|--------------------|--------------|-----------------------|
|              | Load voltage range | Load current | Inrush current        |
| G3M-202 P(L) | 75 to 264 VAC      | 0.10 to 2 A  | 30 A (60 Hz, 1 cycle) |

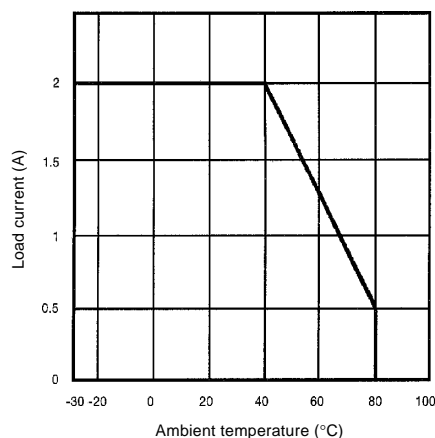
## ■ CHARACTERISTICS

|                        |           |  |
|------------------------|-----------|--|
| Operate time           |           | 1 ms max. (1/2 of load power source cycle + 1 ms max. for G3M-202P-US-4) |
| Release time           |           | 1/2 of load power source cycle + 1 ms max.                               |
| Output ON voltage drop |           | 1.60 V (RMS) max.  |
| Leakage current        |           | 2 mA max. (at 100 VAC)   |
|                        |           | 5 mA max. (at 200 VAC)   |
| Ambient temperature    | Operating | -30° to 80°C (-22° to 176°F) with no icing                               |
| Dielectric strength    |           | 2,500 VAC, 50/60 Hz for 1 sec.   |
| Ambient humidity       | Operating | 45% to 85% RH  |
| $V_{DRM}, V_{CEO}$     |           | 600 V  |
| $di/dt$                |           | 30 A/ $\mu$ s  |
| $dv/dt$                |           | 300 V/ $\mu$ s   |
| $I^2t$                 |           | 10.40 A <sup>2</sup> s   |
| $T_j$                  |           | 125°C (257°F) max.   |
| Termination            |           | PCB terminals  |
| Construction           |           | Fully-sealed   |
| Weight                 |           | 15 g (0.53 oz)   |

Note: Data shown are of initial value.

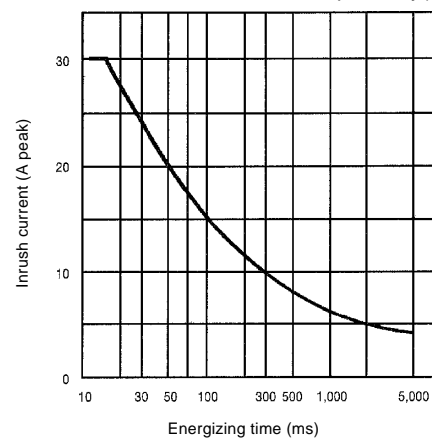
## ■ CHARACTERISTIC DATA

### Load current vs. ambient temperature characteristics



### Inrush current resistivity

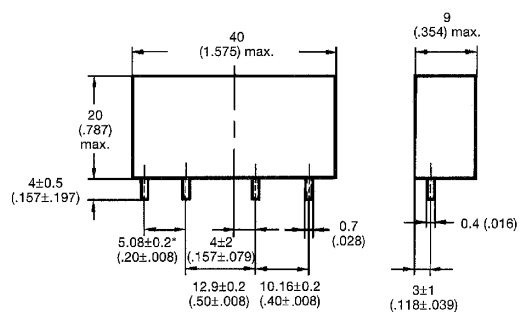
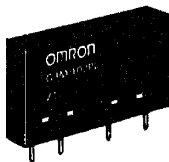
Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)



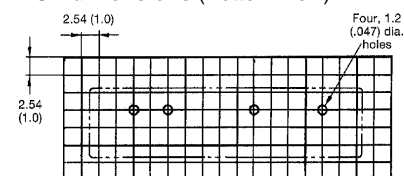
## Dimensions

Unit: mm (inch)

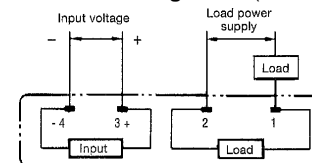
## ■ RELAYS



### PCB dimensions (Bottom view)



### Terminal arrangement (Bottom view)



\*Input terminal pitch of 7.62 mm (0.30 in) is also available.

## ■ APPROVALS

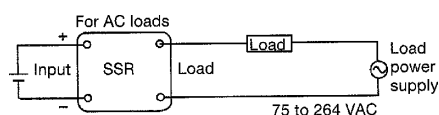
UL508 (File No. E64562)/CSA C22.2 (File No. LR35535)

| Model            | Ratings                     |
|------------------|-----------------------------|
| G3M-202P(L)-US-4 | 2 A at 250 VAC (Resistive)  |
|                  | 500 W at 250 VAC (Tungsten) |
|                  | 2FLA/12 LRA at 250 VAC      |

Note: 1. The rated values approved by each of the safety standards may be different from the performance characteristics individually defined in this catalog.  
2. In the interest of product improvement, specifications are subject to change.

## Precautions

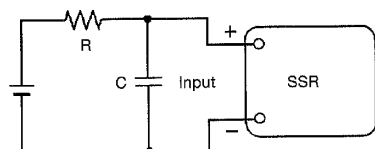
Connect the relay as shown below.



The load terminals are internally connected to a snubber circuit that absorbs noise. However, if wiring from these terminals is laid with or placed in the same duct as high-voltage or power lines, noise may be induced, causing the SSR to operate irregularly or malfunction.

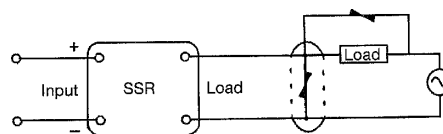
To repeatedly switch a load that generates a high inrush current, such as a motor, design the circuit so that the value of the inrush current falls within half the values shown in *Inrush Current Resistivity in Characteristic Data*.

Because the operating time of the SSR is extremely short, take measures to suppress noise induced in the input terminals. If the generation of strong noise is expected, connect an external noise absorber, such as an RC circuit.



The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.

When using for AC inductive loads, connect the load terminals of the SSR to a voltage surge absorber (varistor).



Use the following elements for surge absorption:

| Operating voltage | Varistor voltage | Inrush resistance |
|-------------------|------------------|-------------------|
| 100 to 120 VAC    | 240 to 270 V     | 1,000 A min.      |
| 200 to 240 VAC    | 440 to 470 V     | 1,000 A min.      |

Soldering must be completed in 10 seconds or less at 260°C (500°F) or less. Excessive heat will damage the SSR.

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