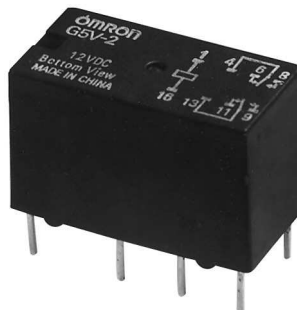


# Low Signal Relay

## G5V-2

- Suitable for handling low signals in computer peripherals, telecommunications and security equipment.
- Capable of switching loads up to 2 A.
- Conforms to FCC part 68 1500 V surge withstand.
- Reliable bifurcated crossbar contacts.
- Fully-sealed construction.
- RoHS Compliant.



## Ordering Information

To Order: Select the part number and add the desired coil voltage rating (e.g., G5V-2-DC12).

| Type             | Contact form | Construction | Model    |
|------------------|--------------|--------------|----------|
| Standard         | DPDT         | Fully-sealed | G5V-2    |
| High-sensitivity |              |              | G5V-2-H  |
| Ultra-sensitive  |              |              | G5V-2-H1 |

## Specifications

### ■ Contact Data

| Item                    | Standard and high-sensitivity      | Ultra-sensitive                   |
|-------------------------|------------------------------------|-----------------------------------|
| Load                    | Resistive load (p.f. = 1)          |                                   |
| Rated load              | 0.50 A at 125 VAC<br>2 A at 30 VDC | 0.5 A at 125 VAC<br>1 A at 24 VDC |
| Contact material        | Ag (Au clad)                       |                                   |
| Carry current           | 2 A                                |                                   |
| Max. operating voltage  | 125 VAC<br>125 VDC                 |                                   |
| Max. operating current  | 2 A                                | 1 A                               |
| Max. switching capacity | 62.5 VA<br>60W                     | 62.5 VA<br>24W                    |
| Min. permissible load   | 10 $\mu$ A, 10 mVDC                |                                   |

## ■ Coil Data

### Standard Type

| Rated voltage (VDC) | Rated current (mA) | Coil resistance ( $\Omega$ ) | Coil inductance (Ref. value) (H) |             | Pick-up voltage    | Dropout voltage | Maximum voltage                 | Power consumption (mW) |
|---------------------|--------------------|------------------------------|----------------------------------|-------------|--------------------|-----------------|---------------------------------|------------------------|
|                     |                    |                              | Armature OFF                     | Armature ON |                    |                 |                                 |                        |
| 3                   | 166.70             | 18                           | 0.04                             | 0.05        | 75% max.           | 5% min.         | 120% max.<br>at 65°C<br>(149°F) | Approx. 500            |
| 5                   | 100                | 50                           | 0.09                             | 0.11        |                    |                 |                                 |                        |
| 6                   | 83.30              | 72                           | 0.16                             | 0.19        |                    |                 |                                 |                        |
| 9                   | 55.60              | 162                          | 0.31                             | 0.49        |                    |                 |                                 |                        |
| 12                  | 41.70              | 288                          | 0.47                             | 0.74        |                    |                 |                                 |                        |
| 24                  | 20.80              | 1,152                        | 1.98                             | 2.68        |                    |                 |                                 |                        |
| 48                  | 12                 | 4,000                        | --                               | --          | % of rated voltage |                 | 110% max.<br>at 60°C<br>(140°F) | Approx. 580            |

### High-sensitivity Type

| Rated voltage (VDC) | Rated current (mA) | Coil resistance ( $\Omega$ ) | Coil inductance (Ref. value) (H) |             | Pick-up voltage | Dropout voltage | Maximum voltage                 | Power consumption (mW) |
|---------------------|--------------------|------------------------------|----------------------------------|-------------|-----------------|-----------------|---------------------------------|------------------------|
|                     |                    |                              | Armature OFF                     | Armature ON |                 |                 |                                 |                        |
| 3                   | 120                | 25                           | 0.04                             | 0.07        | 75% max.        | 5% min.         | 120% max.<br>at 70°C<br>(158°F) | Approx. 360            |
| 5                   | 72                 | 70                           | 0.12                             | 0.19        |                 |                 |                                 |                        |
| 6                   | 60                 | 100                          | 0.18                             | 0.29        |                 |                 |                                 |                        |
| 9                   | 40                 | 225                          | 0.40                             | 0.62        |                 |                 |                                 |                        |
| 12                  | 30                 | 400                          | 0.75                             | 1.18        |                 |                 |                                 |                        |
| 24                  | 15                 | 1,600                        | 3.16                             | 4.81        |                 |                 |                                 |                        |
| 48                  | 7.5                | 6,400                        | --                               | --          |                 |                 | % of rated voltage              |                        |

### Ultra-sensitive Type

| Rated voltage (VDC) | Rated current (mA) | Coil resistance ( $\Omega$ ) | Coil inductance (Ref. value) (H) |             | Pick-up voltage | Dropout voltage | Maximum voltage                 | Power consumption (mW) |
|---------------------|--------------------|------------------------------|----------------------------------|-------------|-----------------|-----------------|---------------------------------|------------------------|
|                     |                    |                              | Armature OFF                     | Armature ON |                 |                 |                                 |                        |
| 3                   | 50                 | 60                           | 0.18                             | 0.26        | 75% max.        | 5% min.         | 150% max.<br>at 70°C<br>(158°F) | Approx. 150            |
| 5                   | 30                 | 166.7                        | 0.46                             | 0.47        |                 |                 |                                 |                        |
| 6                   | 25                 | 240                          | 0.70                             | 0.97        |                 |                 |                                 |                        |
| 9                   | 16.70              | 540                          | 1.67                             | 2.33        |                 |                 |                                 |                        |
| 12                  | 12.50              | 960                          | 2.90                             | 3.99        |                 |                 |                                 |                        |
| 24                  | 8.30               | 2,880                        | 6.72                             | 9.27        |                 |                 |                                 |                        |
| 48                  | 6.25               | 7,680                        | 20.10                            | 26.70       |                 |                 | % of rated voltage              |                        |
|                     |                    |                              |                                  |             |                 |                 |                                 | Approx. 300            |

**Note: 1.** The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of  $\pm 10\%$ .

**2.** The operating characteristics are measured at a coil temperature of 23°C (73°F).

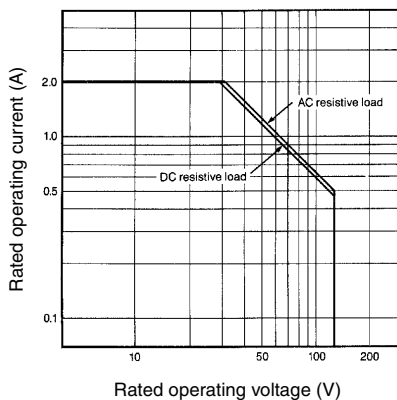
## ■ Characteristics

|                                |                               |   |
|--------------------------------|-------------------------------|---|
| <b>Contact resistance</b>      |                               | 50 mΩ max. G5V-2, G5V-2-H, 100 mΩ max. G5V-2-H1   |
| <b>Operate time</b>            |                               | 7 ms max. (mean value: approx. 3.5 ms)  |
| <b>Release time</b>            |                               | 3 ms max. (mean value: approx. 0.8 ms)  |
| <b>Bounce time</b>             | <b>Operate</b>                | Mean value: approx. 0.5 ms  |
|                                | <b>Release</b>                | Mean value: approx. 3.5 ms  |
| <b>Operating frequency</b>     | <b>Mechanical</b>             | 36,000 operations/hour  |
|                                | <b>Electrical</b>             | 1,800 operations/hour (under rated load)  |
| <b>Insulation resistance</b>   |                               | 1,000 MΩ min (at 500 VDC)   |
| <b>Dielectric strength</b>     |                               | 1,000 VAC, 50/60 Hz for 1 minute between coil and contacts<br>1,000 VAC, 50/60 Hz for 1 minute between contacts of different poles<br>750 VAC, 50/60 Hz for 1 minute between contacts of same poles<br>(500 VAC, 50/60 Hz for 1 minute between contacts of same poles for ultra-sensitive type) |
| <b>Surge withstand voltage</b> |                               | 1,500 V 10 X 160 μs (conforms to part 68 of FCC rules)  |
| <b>Vibration</b>               | <b>Mechanical durability</b>  | 10 to 55 Hz, 1.50 mm (0.59 in) double amplitude   |
|                                | <b>Malfunction durability</b> |   |
| <b>Shock</b>                   | <b>Mechanical durability</b>  | 1,000 m/s <sup>2</sup> (approx. 100 G)  |
|                                | <b>Malfunction durability</b> | 200 m/s <sup>2</sup> (approx. 20 G), 100 m/s <sup>2</sup> (approx. 10 G) for ultra-sensitive type   |
| <b>Ambient temperature</b>     | <b>Operating/storage</b>      | -25° to 70°C (-13° to 158°F)  |
| <b>Humidity</b>                |                               | 35% to 85% RH   |
| <b>Service life</b>            | <b>Mechanical</b>             | 15 million operations min. (at operating frequency of 36,000 operations/hour)   |
|                                | <b>Electrical</b>             | See "Characteristic Data"   |
| <b>Weight</b>                  |                               | 6 g (0.21 oz)   |

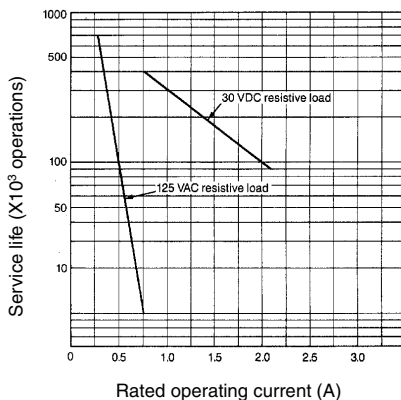
Note: Data shown are of initial value.

## ■ Characteristic Data

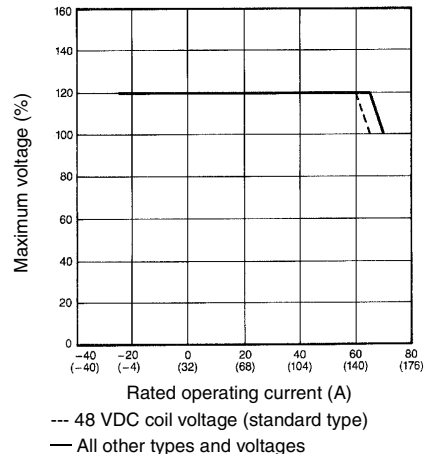
Maximum Switching Capacity



Electrical Service Life



Ambient Temperature vs. Maximum Voltage

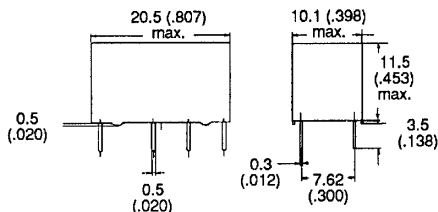


# Dimensions

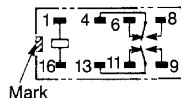
Unit: mm (inch)

## Relays

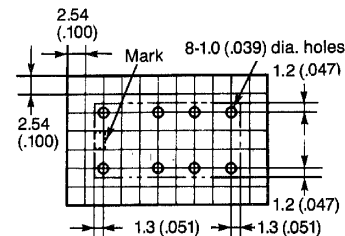
### Fully-sealed



### Terminal arrangement/Internal (bottom view)



### Mounting holes (bottom view)



- Note:** 1. and indicate mounting orientation marks.  
 2. A tolerance of  $\pm 0.10$  (0.004) applies to the above dimensions.

## Approvals

### UL (File No. E41515)/CSA (File No. LR24825)

| Type     | Contact form | Coil rating | Contact ratings   |
|----------|--------------|-------------|---|
| G5V-2    | DPDT         | 3 to 48 VDC | 0.6 A, 125 VAC  |
| G5V-2-H  |              | 3 to 24 VDC | 0.6 A, 110 VDC<br>2.0 A, 30 VDC   |
| G5V-2-H1 |              | 3 to 48 VDC | 0.5 A, 125 VAC<br>0.6 A, 125 VAC<br>0.2 A, 110 VDC<br>0.6 A, 110 VDC<br>1.0 A, 24 VDC |

- 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.  
 3. UL1950 recognition.

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