

# Low Signal Relay

## G5V-1

- High sensitivity: 150 mW nominal power consumption with 96 mW pickup power.
- Small size at 10 H x 7.5 W x 12.5 L mm (0.394 H x 0.295 W x 0.492 L in).
- Conforms to FCC part 68 voltage surge.
- Fully-sealed construction.
- Ideal for use in telecommunications, security, and computer/peripheral equipment.
- RoHS Compliant.



## Ordering Information

To Order: Select the part number and add the desired coil voltage rating (e.g., G5V-1-DC12).

| Terminal         | Type           | Contact form | Contact type    | Construction | Model   |
|------------------|----------------|--------------|-----------------|--------------|---------|
| PCB through-hole | Standard       | SPDT         | Single crossbar | Fully sealed | G5V-1   |
|                  | Special pickup |              |                 |              | G5V-1-2 |

**Note:** Reflow solder process version is also available in PCB through-hole configuration. Please consult your local Omron sales representative for more information.

## Specifications

### ■ Contact Data

| Load                    | Resistive load (p.f. = 1)    | Inductive load (p.f. = 0.4, L/R = 7ms) |
|-------------------------|------------------------------|--|
| Rated load              | 0.50 A at 125 VAC, 1A 24 VDC |  |
| Contact material        | Ag (Au clad)                 |  |
| Carry current           | 2 A                          |  |
| Max. operating voltage  | 125 VAC, 60 VDC              |  |
| Max. operating current  | 1 A                          |  |
| Max. switching capacity | 62.50 VA, 30W                |  |
| Min. permissible load   | 1 mA, 5 VDC                  |  |

### ■ Coil Data (G5V-1, G5V-1-2)

| 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                           | 0.11                             | 0.05        | 80%<br>70%<br>(special pickup) | 10% min.        | 200%<br>at 55°C<br>(131°F)<br><br>160%<br>at 70°C<br>(158°F) | Approx. 150            |
| 5                   | 30                 | 166.70                       | 0.29                             | 0.15        |                                |                 |  |                        |
| 6                   | 25                 | 240                          | 0.41                             | 0.20        |                                |                 |  |                        |
| 9                   | 16.70              | 540                          | 0.93                             | 0.45        |                                |                 |  |                        |
| 12                  | 12.50              | 960                          | 1.63                             | 0.85        |                                |                 |  |                        |
| 24                  | 6.30               | 3,840                        | 6.61                             | 3.48        |                                |                 |  |                        |

**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).

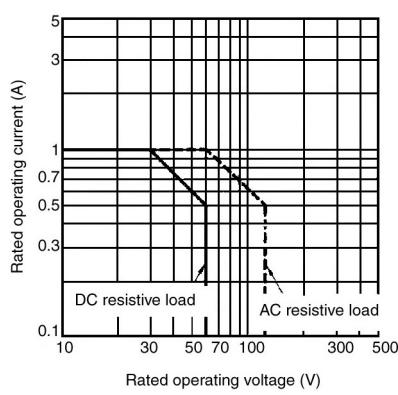
## ■ Characteristics

|                         |  |   |
|-------------------------|--|---|
| Contact resistance      | 100 mΩ max.  |   |
| Operate time            | 5 ms max. (mean value: approx. 2.50 ms)  |   |
| Release time            | 5 ms max. (mean value: approx. 0.90 ms)  |   |
| Bounce time             | 5 ms max. (mean value: approx. 0.17 ms)  |   |
| Operating frequency     | Mechanical   | 36,000 operations/hour                                |
|                         | Electrical   | 1,800 operations/hour                                 |
| Insulation resistance   | 1,000 MΩ min. (at 500 VDC)   |   |
| Dielectric strength     | 1,000 VAC, 50/60 Hz for 1 minute between coil and contacts<br>400 VAC, 50/60 Hz for 1 minute between contacts of same polarity |   |
| Surge withstand voltage | 1,500 V 10 X 160 µs (conforms to FCC Part 68)  |   |
| Vibration               | Mechanical durability  | 10 to 55 Hz, 3.30 mm (0.13 in) double amplitude       |
|                         | Malfunction durability   |   |
| Shock                   | Mechanical durability  | 1,000 m/s <sup>2</sup> (approx. 100G)                 |
|                         | Malfunction durability   | 100 m/s <sup>2</sup> (approx. 10 G)                   |
| Ambient temperature     | -30°C to 70°C (-22°F to 158°F)   |   |
| Humidity                | 35% to 85% RH  |   |
| Service life            | Mechanical   | 5 million operations min. (at 36,000 operations/hour) |
|                         | Electrical   | See "Characteristic Data"                             |
| Weight                  | 2.20 g (0.08 oz)   |   |

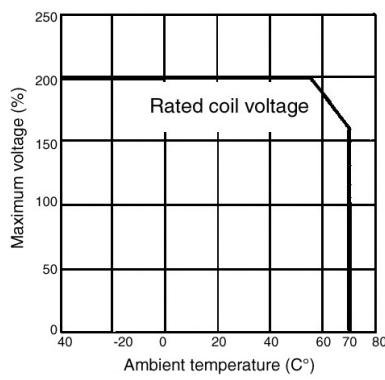
**Note:** Data shown are of initial value.

## ■ Characteristic Data

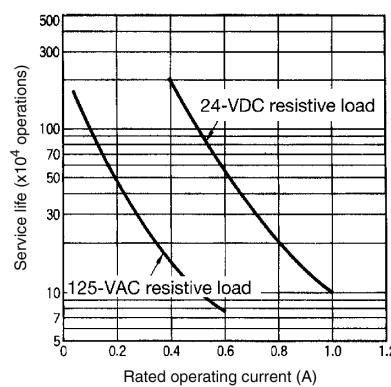
Maximum switching capacity



Ambient temperature vs.  
maximum voltage (reference only)



Electrical service life

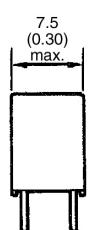
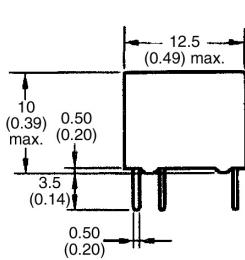


# Dimensions

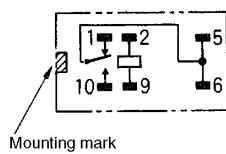
Unit: mm (inch)

## ■ Relays

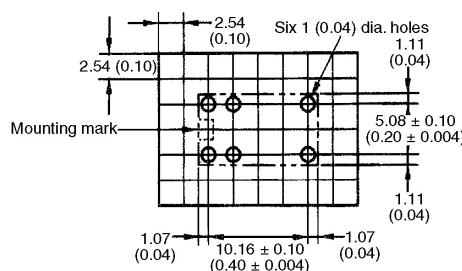
G5V-1, G5V-1-2



Terminal arrangement/  
Internal connections  
(bottom view)



Mounting holes  
(bottom view)



## ■ Approvals

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

| Type    | Contact form | Coil rating | Contact ratings                |
|---------|--------------|-------------|--------------------------------|
| G5V-1   | SPDT         | 3 to 24 VDC | 0.5A, 125 VAC                  |
| G5V-1-2 |              |             | 0.3 A, 60 VDC<br>1.0 A, 30 VDC |

**Note:** 1. In the interest of product improvement, specifications are subject to change.  
2. Complies with UL 1950 basic Insulation at 125 V (pollution degree 1 for internal spacings, pollution degree 2 for external spacings).

MEMO

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