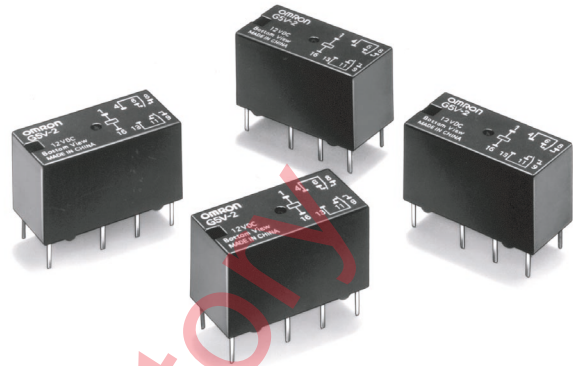


Miniature Relay for Signal Circuits

- Wide switching power of 10 μ A to 2 A.
- High dielectric strength coil-contacts: 1,000 VAC; open contacts: 750 VAC.
- Conforms to FCC Part 68 requirements.
- Ag + Au clad bifurcated crossbar contacts and fully sealed for high contact reliability.
- New 150-mW relays with high-sensitivity.



Ordering Information

| Classification | Contact form | Contact type | Contact material | Enclosure ratings | Model |
|------------------|--------------|---------------------|------------------|-------------------|----------|
| Standard | DPDT | Bifurcated crossbar | Ag + Au-clad | Fully sealed | G5V-2 |
| High-sensitivity | | | | | G5V-2-H1 |

Note: When ordering, add the rated coil voltage to the model number.

Example: G5V-2 12 VDC
Rated coil voltage

Model Number Legend

G5V - - VDC
1 2 3

1. **Contact Form**
 2: DPDT

2. **Classification**
 H1: High-sensitivity

3. **Rated Coil Voltage**
 3, 5, 6, 9, 12, 24, 48 VDC

Specifications

■ Coil Ratings

Standard Models

| Rated voltage | 3 VDC | 5 VDC | 6 VDC | 9 VDC | 12 VDC | 24 VDC | 48 VDC |
|----------------------------------|-------------------------------|-------------|-------------|--------------|--------------|----------------|----------------|
| Rated current | 166.7 mA | 100 mA | 83.3 mA | 55.6 mA | 41.7 mA | 20.8 mA | 12 mA |
| Coil resistance | 18 Ω | 50 Ω | 72 Ω | 162 Ω | 288 Ω | 1,152 Ω | 4,000 Ω |
| Coil inductance (H) (ref. value) | Armature OFF | 0.04 | 0.09 | 0.16 | 0.31 | 1.98 | 7.23 |
| | Armature ON | 0.05 | 0.11 | 0.19 | 0.49 | 0.74 | 10.00 |
| Must operate voltage | 75% max. of rated voltage | | | | | | |
| Must release voltage | 5% min. of rated voltage | | | | | | |
| Max. voltage | 120% of rated voltage at 23°C | | | | | | |
| Power consumption | Approx. 500 mW | | | | | | Approx. 580 mW |

High Sensitivity Models

| | | | | | | | |
|-------------------------------------|-------------------------------|---------|-------|---------|---------|----------------|-------------------------------|
| Rated voltage | 3 VDC | 5 VDC | 6 VDC | 9 VDC | 12 VDC | 24 VDC | 48 VDC |
| Rated current | 50 mA | 30 mA | 25 mA | 16.7 mA | 12.5 mA | 8.33 mA | 6.25 mA |
| Coil resistance | 60 Ω | 166.7 Ω | 240 Ω | 540 Ω | 960 Ω | 2,880 Ω | 7,680 Ω |
| Coil inductance (H) (ref. value) | Armature ON | 0.18 | 0.46 | 0.70 | 1.67 | 2.90 | 20.1 |
| | Armature OFF | 0.57 | 0.71 | 0.97 | 2.33 | 3.99 | 26.7 |
| Must operate voltage | 75% max. of rated voltage | | | | | | |
| Must release voltage | 5% min. of rated voltage | | | | | | |
| Max. voltage | 180% of rated voltage at 23°C | | | | | | 150% of rated voltage at 23°C |
| Power consumption | Approx. 150 mW | | | | | Approx. 200 mW | Approx. 300 mW |

- Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.
2. Operating characteristics are measured at a coil temperature of 23°C.

■ Contact Ratings

| Item | Standard models | High sensitivity models |
|--------------------------------|-----------------------------------|---------------------------------|
| Load | Resistive load ($\cos\phi = 1$) | |
| Rated load | 0.5 A at 125 VAC; 2 A at 30 VDC | 0.5 A at 125 VAC; 1 A at 24 VDC |
| Contact material | Ag + Au-clad | |
| Rated carry current | 2 A | |
| Max. switching voltage | 125 VAC, 125 VDC | |
| Max. switching current | 2 A | 1 A |
| Max. switching power | 62.5 VA, 60 W | 62.5 VA, 24 W |
| Failure rate (reference value) | 0.01 mA at 10 mVDC | |

Note Note:P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation

■ Characteristics

| Item | Standard models | High sensitivity models |
|---------------------------|--|--|
| Contact resistance | 50 mΩ max. | 100 mΩ max. |
| Operate time | 7 ms max. | |
| Release time | 3 ms max. | |
| Bounce time | Operate: approx. 0.3 ms Release: approx. 1.5 ms | |
| Max. operating frequency | Mechanical: 36,000 operations/hr Electrical: 1,800 operations/hr (under rated load) | |
| Insulation resistance | 1,000 MΩ min. (at 500 VDC) | |
| Dielectric strength | 1,000 VAC, 50/60 Hz for 1 min between coil and contacts 1,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 750 VAC, 50/60 Hz for 1 min between contacts of same polarity | 1,000 VAC, 50/60 Hz for 1 min between coil and contacts 1,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 500 VAC, 50/60 Hz for 1 min between contacts of same polarity |
| Impulse withstand voltage | 1,500 V (10 x 160 μs) between coil and contacts (conforms to FCC Part 68) | |
| Vibration resistance | Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) | |
| Shock resistance | Destruction: 1,000 m/s ² (approx. 100G) Malfunction: 200 m/s ² (approx. 20G) | Destruction: 1,000 m/s ² (approx. 100G) Malfunction: 100 m/s ² (approx. 10G) |
| Endurance | Mechanical: 15,000,000 operations min. (at 36,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr) | |
| Ambient temperature | Operating: -25°C to 65°C (with no icing) | Operating: -25°C to 70°C (with no icing) |
| Ambient humidity | Operating: 5% to 85% | |
| Weight | Approx. 5 g | |

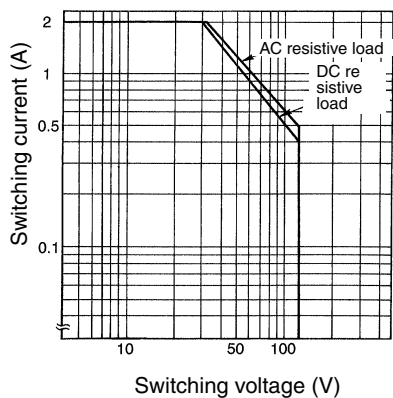
■ Approved Standards

UL478, UL1950, UL508 (File No. E41515)/CSA C22.2 No.0, No.14 (File No. LR24825)

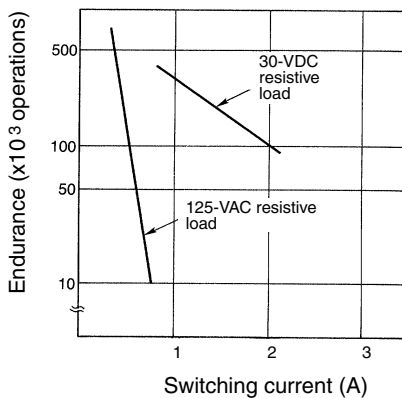
| Contact form | Coil ratings | Contact ratings | |
|--------------|--------------|---|---|
| | | G5V-2 | G5V-2-H1 |
| DPDT | 3 to 48 VDC | 0.6 A, 125 VAC (general use) 0.6 A, 110 VDC (resistive load) 2 A, 30 VDC (resistive load) | 0.5 A, 125 VAC (general use) 0.2 A, 110 VDC (resistive load) 1 A, 24 VDC (resistive load) |

Engineering Data

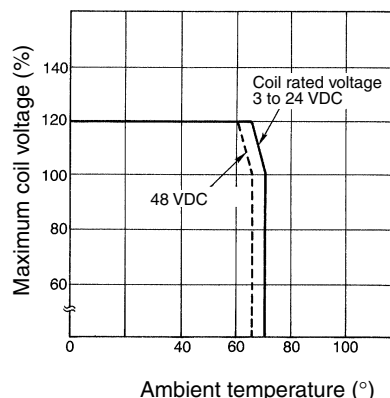
**Maximum Switching Power
G5V-2**



**Endurance
G5V-2**

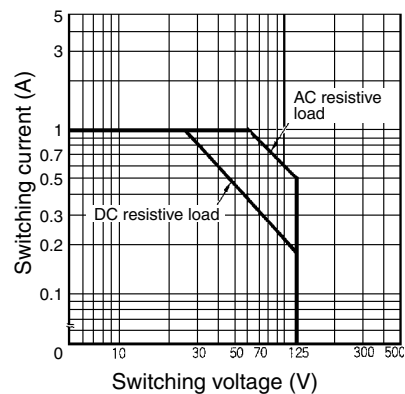


**Ambient Temperature vs.
Maximum Coil Voltage
G5V-2**

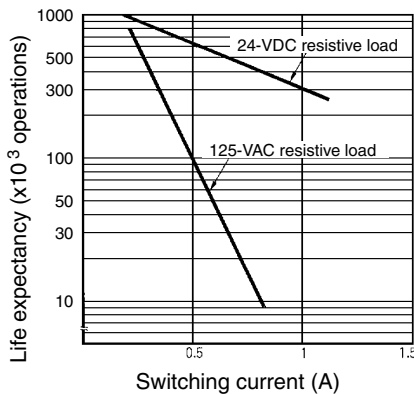


Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

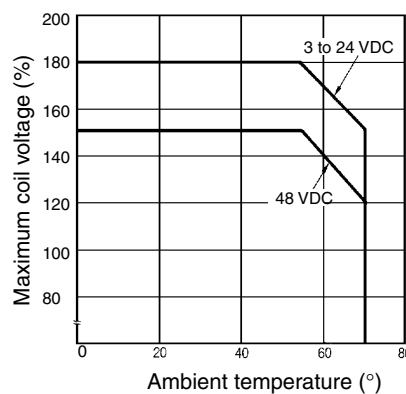
G5V-2-H1



G5V-2-H1





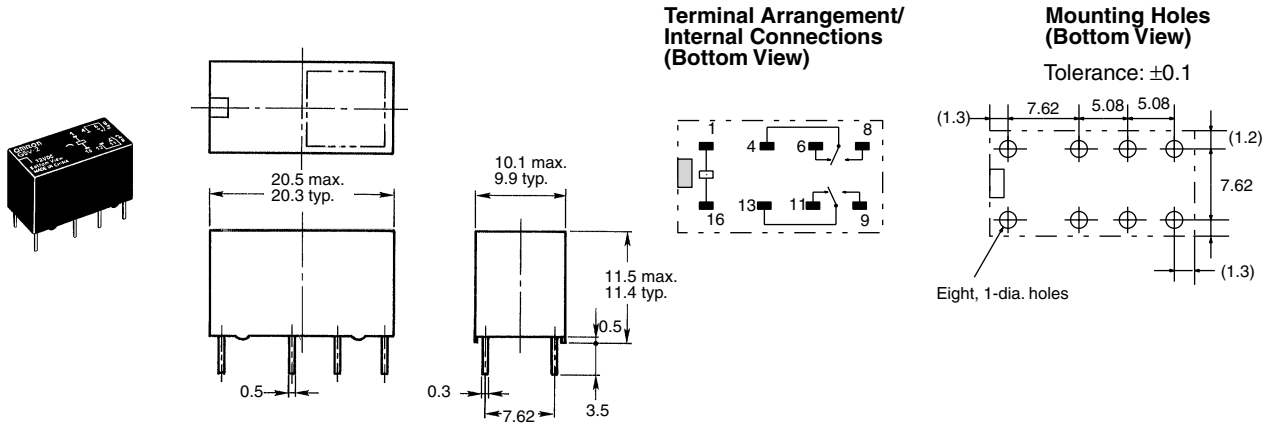
G5V-2-H1



Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Dimensions

- Note:** 1. All units are in millimeters unless otherwise indicated.
 2. Orientation marks are indicated as follows:  



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.