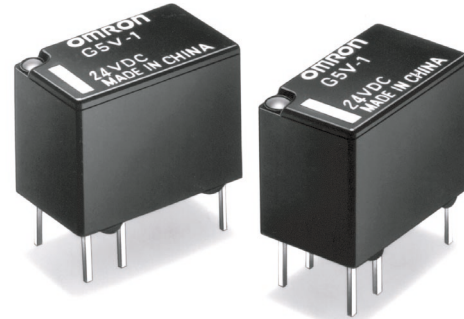


### Ultra-miniature, Highly Sensitive SPDT Relay for Signal Circuits

- Ultra-miniature at 12.5 x 7.5 x 10 mm (L x W x H).
- Wide switching power of 1 mA to 1 A.
- High sensitivity: 150-mW nominal coil power.
- Fully sealed construction.
- International 2.54-mm terminal pitch.
- Conforms to FCC Part 68 requirements for coil to contacts.



## Ordering Information

Classification				Model
Contact form	Contact type	Contact material	Structure	
SPDT	Single crossbar	Ag + Au-clad	Fully sealed	G5V-1

**Note:** When ordering, add the rated coil voltage to the model number.  
Example: G5V-1 12 VDC

Rated coil voltage

### Model Number Legend

G5V -   VDC

1 2

1. Contact Form  
1: SPDT

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

## Specifications

### ■ Coil Ratings

Rated voltage	3 VDC	5 VDC	6 VDC	9 VDC	12 VDC	24 VDC
Rated current	50 mA	30 mA	25 mA	16.7 mA	12.5 mA	6.25 mA
Coil resistance	60 Ω	167 Ω	240 Ω	540 Ω	960 Ω	3,840 Ω
Coil inductance (H) (ref. value)	Armature OFF	0.05	0.15	0.20	0.45	0.85
	Armature ON	0.11	0.29	0.41	0.93	1.63
Must operate voltage	80% max. of rated voltage					
Must release voltage	10% min. of rated voltage					
Max. voltage	200% of rated voltage at 23°C					
Power consumption	Approx. 150 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

Load	Resistive load ( $\cos\phi = 1$ )
Rated load	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, 60 VDC
Max. switching current	1 A
Max. switching power	62.5 VA, 30 W
Failure rate (reference value)	1 mA at 5 VDC

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

## ■ Characteristics

Contact resistance	100 m $\Omega$ max.
Operate time	5 ms max. (mean value: approx. 2.5 ms)
Release time	5 ms max. (mean value: approx. 0.9 ms)
Bounce time	Operate: approx. 0.2 ms Release: approx. 5 ms
Max. operating frequency	Mechanical: 36,000 operations/hr Electrical: 1,800 operations/hr (under rated load)
Insulation resistance	1,000 M $\Omega$ min. (at 500 VDC between coil and contacts, at 250 VDC between contacts of same polarity.)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between coil and contacts 400 VAC, 50/60 Hz for 1 min between contacts of same polarity
Impulse withstand voltage	1,500 V (10 x 160 $\mu$ s) between coil and contacts (conforms to FCC Part 68)
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 1.65-mm single amplitude (3.3-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 1.65-mm single amplitude (3.3-mm double amplitude)
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> Malfunction: 100 m/s <sup>2</sup>
Endurance	Mechanical: 5,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (under rated load, at 1,800 operations/hr)
Ambient temperature	Operating: -40°C to 70°C (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 2 g

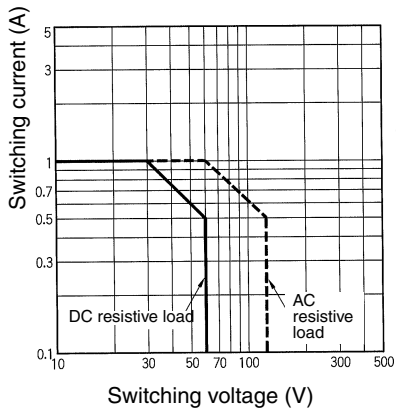
## ■ Approved Standards

UL1950 (File No. E41515)/CSA C22.2 No.0, No.14 (File No. LR31928)

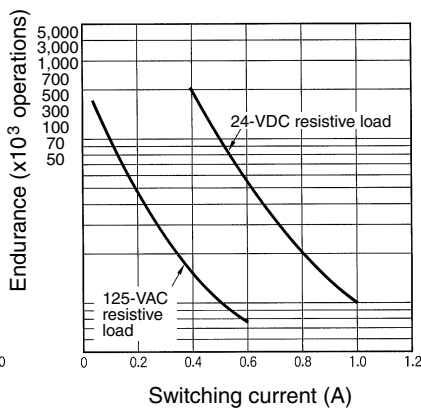
Model	Contact form	Coil ratings	Contact ratings
G5V-1	SPDT	3 to 24 VDC	0.5 A, 125 VAC (general use) 0.3 A, 110 VDC (resistive load) 1 A, 30 VDC (resistive load)

# Engineering Data

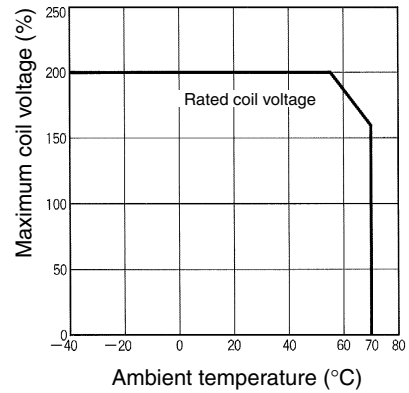
## Maximum Switching Power



## Endurance



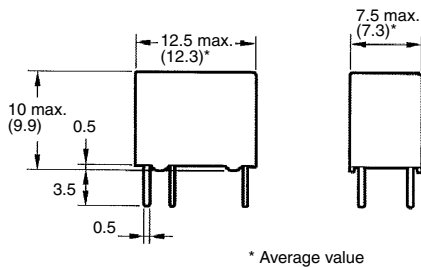
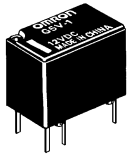
## Ambient Temperature vs. Maximum Coil Voltage



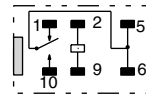
**Note:** The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

# Dimensions

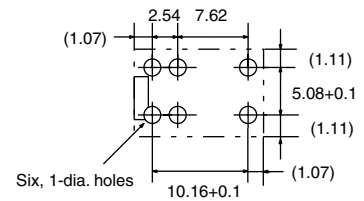
- Note:**
1. All units are in millimeters unless otherwise indicated.
  2. Numbers in parentheses are reference values.
  3. Tolerance:  $\pm 0.1$
  4. Orientation marks are indicated as follows:



## Terminal Arrangement/ Internal Connections (Bottom View)



## Mounting Holes (Bottom View)



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