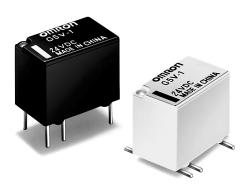


# Low Signal Relay

**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
- Available in PCB through-hole, SMT gullwing; high ambient versions and high dielectric versions







# Ordering Information\_\_\_\_\_

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

Terminal	Туре	Contact form	Contact type	Construction	Part number
PCB through-hole	Standard	SPDT	Single crossbar	Fully sealed	G5V-1
	Special pickup				G5V-1-2
	High dielectric				G5V-1-HTY
Surface mount gullwing	Standard				G5V-1F
	High dielectric				G5V-1F-Y

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, 1 A 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	Rated Coil resistance		Coil inductance (Ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	% of rated	voltage		(mW)
3	50	60	0.11	0.05	80%	10% min.	200%	Approx. 150
5	30	166.70	0.29	0.15	70%		at 55°C	
6	25	240	0.41	0.20	(special		(131°F)	
9	16.70	540	0.93	0.45	pickup)		160%	
12	12.50	960	1.63	0.85			at 70°C	
24	6.30	3,840	6.61	3.48			(158°F)	

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).

### **■** COIL DATA (G5V-1-HTY, G5V-1F, G5V-1F-Y)

Rated voltage	voltage current resistance		Coil inductance (Ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption
(VDC) (mA)		(Ω)	Armature OFF	Armature ON	% of rated voltage		(mW)	
5	30	166.70	0.29	0.15	80% max.	10% min.	200%	Approx. 150
12	12.50	960	1.63	0.85			at 55°C	
24	8.3	2,880	4.95	2.61			(131°F)	Approx. 200
							160% at 70°C (158°F)	

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).

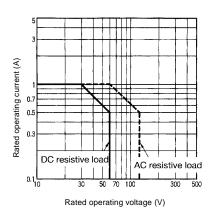
#### **■ CHARACTERISTICS**

Contact resistance		100 m $\Omega$ 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 1,500 VAC, 50/60 Hz for 1 minute between coil and contacts (high dielectric versions) 400 VAC, 50/60 Hz for 1 minute between contacts of same polarity		
Surge withstand voltage	е	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. 100 G)		
Malfunction durability		100 m/s <sup>2</sup> (approx. 10 G)		
Ambient temperature		-30°C to 70°C (-22°F to 158°F) for standard and special pickup PCB through-hole version; -40°C to 70°C (-40°F to 158°F) for surface mount versions		
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.

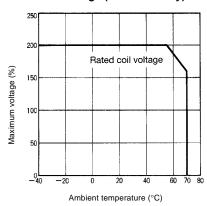
### Maximum switching capacity

**■ CHARACTERISTIC DATA** 

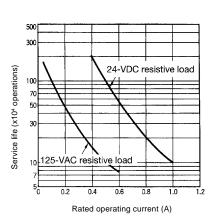


Ambient temperature vs. maximum voltage (reference only)

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Electrical service life

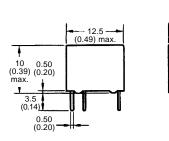


### **Dimensions**

Unit: mm (inch)

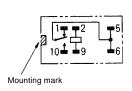
#### **■ RELAYS**

#### G5V-1, G5V-1-2

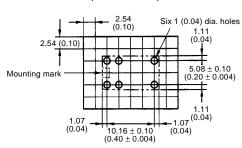


7.5 (0.30) max.

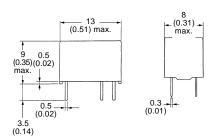
Terminal arrangement/ Internal connections (bottom view)



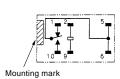
Mounting holes (bottom view)



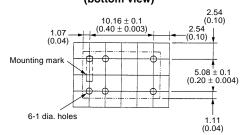
G5V-1-HTY



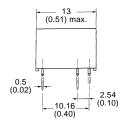
Terminal arrangement/ Internal connections (bottom view)

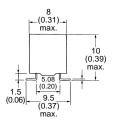


Mounting holes (bottom view)

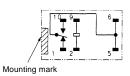


### G5V-1F, G5V-1F-Y

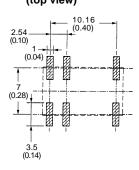




### Terminal arrangement/ Internal connections (top view)



# Mounting pads (top view)

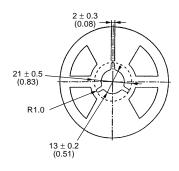


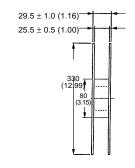
Note: 1. Z and [ ] indicate mounting orientation marks.

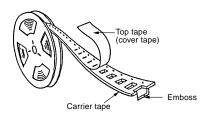
2. A tolerance of  $\pm 0.10$  (0.004) applies to the above dimensions.

### ■ REEL DIMENSIONS (FOR SURFACE MOUNT VERSIONS ONLY)

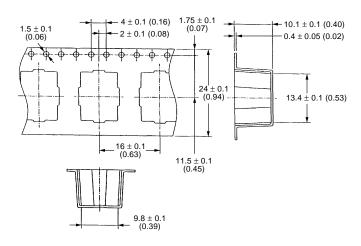
Unit: mm (inch)

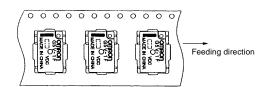






Tape





#### ■ APPROVALS

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

Туре	Contact form	Coil rating	Contact ratings
G5V-1	SPDT	3 to 24 VDC	0.5 A, 125 VAC
G5V-1-2			0.3 A, 60 VDC
G5V-1F			1.0 A, 30 VDC
G5V-1F-Y			
G5V-1-HTY			

Note: 1. In the interest of product improvement, specifications are subject to change.

2. Complies with UL1950 Basic Insulation at 125 V (pollution degree 1 for internal spacings, pollution degree 2 for external spacings).

NOTE: DIMENSIONS ARE SHOWN IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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