2000-04-14

PRODUKTINFORMATION

ELFA artikelnr

37-057-04 Relä 2 pol G5V-2 5VDC
37-057-12 Relä 2 pol G5V-2 12VDC
37-057-20 Relä 2 pol G5V-2 24VDC

OMRON

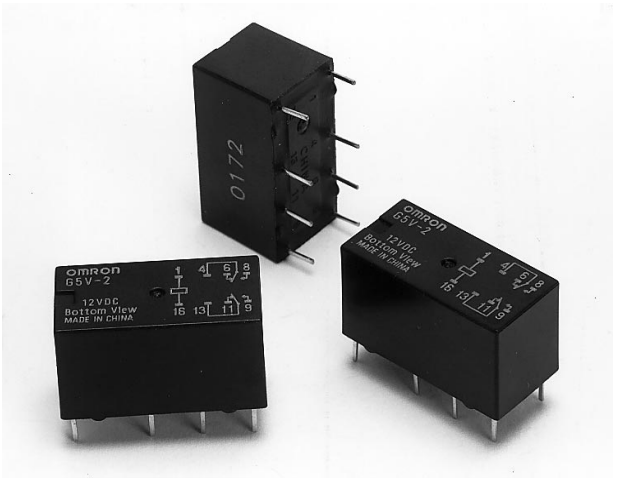
PCB Relay

G5V-2

FCC

Miniature Relay for Special Signal Circuits

- Wide switching capacity of 10 μA 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.



Ordering Information

Contact form	Contact type	Contact material	Structure	Model
DPDT	Bifurcated crossbar	Ag + Au-clad	Plastic-sealed	G5V-2

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

1. **Contact Form**
   2: DPDT
2. **Sensitivity**
   None: Standard 500mW
   H1: High Sensitivity 150mW
3. **Rated Coil Voltage**
   4.5, 5, 6, 9, 12, 24, 48 VDC

Specifications

■ Coil Ratings

Low Sensitivity (500mW)

Rated voltage		4.5 VDC	5 VDC	6 VDC	9 VDC	12 VDC	24 VDC	48 VDC
Rated current		111 mA	100 mA	83.3 mA	55.6 mA	41.7 mA	20.8 mA	12 mA
Coil resistance		40 Ω	50 Ω	72 Ω	162 Ω	288 Ω	1152 Ω	4000 Ω
Coil inductance	**Armature OFF**	0.08	0.09	0.16	0.31	0.47	1.98	7.23
(H) (ref. value)	**Armature ON**	0.10	0.11	0.19	0.49	0.74	2.63	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 65°C, 100% at 70°C						120% at 60°C
Power consumption		Approx. 500 mW						Approx. 580 mW

High Sensitivity (150mW)

Rated voltage		4.5 VDC	5 VDC	6 VDC	9 VDC	12 VDC	24 VDC	48 VDC
Rated current		33 mA	30 mA	25 mA	16.7 mA	12.5 mA	8.3 mA	6.25 mA
Coil resistance		150 Ω	166.7 Ω	240 Ω	540 Ω	960 Ω	2880 Ω	7680 Ω
Coil inductance	**Armature OFF**	0.42	0.46	0.70	1.67	2.90	6.72	20.1
(H) (ref. value)	**Armature ON**	0.57	0.71	0.97	2.33	3.99	9.27	26.7
Must operate voltage		75% max. of rated voltage						
Must release voltage		5% min. of rated voltage						
Max. voltage		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

Relay Type	G5V–2	G5V–2H1
Load	Resistive load (cos∅ = 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	1 A
Max. switching voltage	125 VAC, 125 VDC	
Max. switching current	2 A	1 A
Max. switching capacity	62.5 VA, 60 W	62.5 VA, 24 W
Min. permissible load	0.01 mA at 10 mVDC	

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

■ Characteristics

Relay Type	G5V–2	G5V–2H1
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 withstand voltage	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 Hz, 1.5-mm double amplitude Malfunction: 10 to 55 Hz, 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)
Life expectancy	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) Storage: –25°C to 65°C (with no icing)	Operating: –25°C to 70°C (with no icing) Storage: –25°C to 70°C (with no icing)
Ambient humidity	Operating: 35% to 85%	
Weight	Approx. 5.8 g	

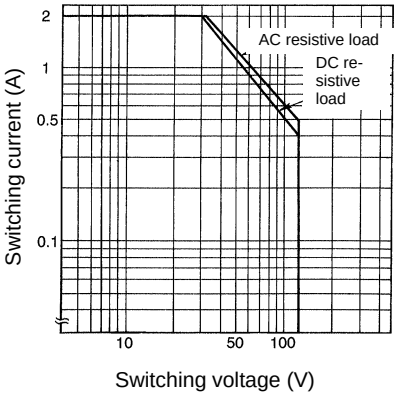
■ Approved Standards

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

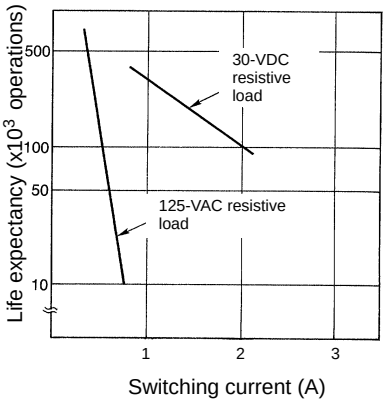
Contact form	Coil ratings	Contact ratings
DPDT	4.5 to 48 VDC	0.6 A, 125 VAC (general use) 0.6 A, 110 VDC (resistive load) 2 A, 30 VDC (resistive load)

Engineering Data

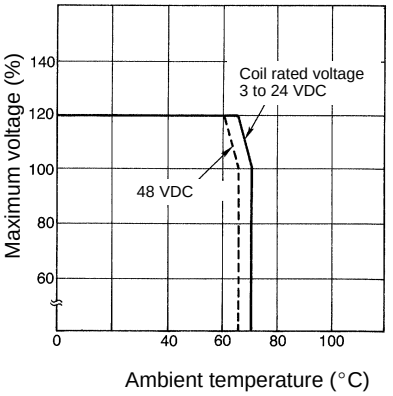
Max. Switching Capacity G5V–2



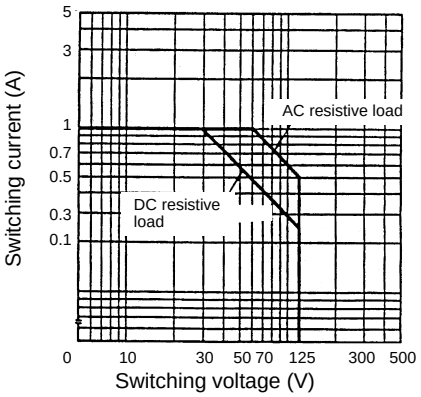
Life Expectancy G5V–2



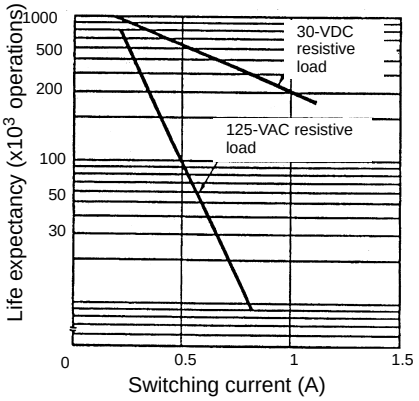
Ambient Temperature vs. Maximum Voltage G5V–2



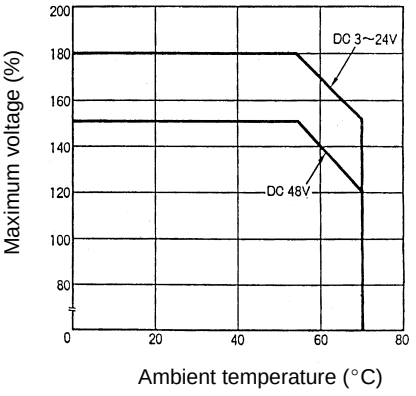
Max. Switching Capacity G5V–2H1



Life Expectancy G5V–2H1



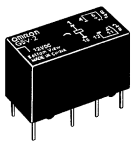
Ambient Temperature vs. Maximum Voltage G5V–2H1

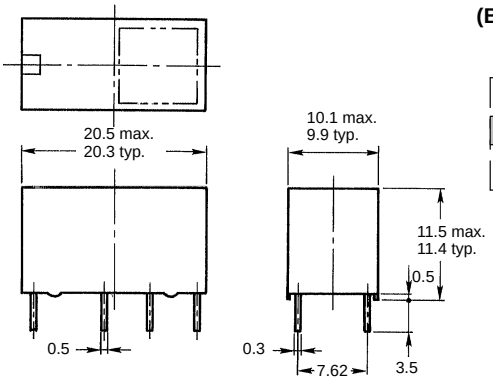


Dimensions

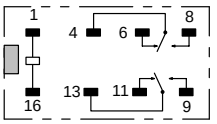
Note: 1. Orientation marks are indicated as follows:

G5V–2
G5V–2H1





Terminal Arrangement/ Internal Connections (Bottom View)



Mounting Holes (Bottom View)

Tolerance: +0.1