Miniature Relay for Signal Circuits

- ROHS compliant.
- Wide switching power 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.
- New 150-mW relays with high-sensitivity.



91 FCC

Ordering Information -

Classification	Contact form	Contact type	Contact material	Enclosure Rating	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

1. Contact Form 2: DPDT 2. Classification
H1: High-sensitivity

3. Rated Coil Voltage

3, 5, 6, 9, 12, 24, 48 VDC

Specifications -

■ Coil Rating

Standard Models

D-4114		0.1/00	5.VD0	6.V/D0	0.1/00	40.1/D0	041/00	40.V/DO
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 (W)		18 Ω	50 Ω	72 Ω	162 Ω	288 Ω	1,152 Ω	4,000 Ω
Coil inductance	Armature OFF	0.04	0.09	0.16	0.31	0.47	1.98	7.23
(H) (ref. value)	Armature ON	0.05	0.11	0.19	0.49	0.74	2.63	10.00
Must operate voltage		70% max. of rated voltage						
Must release voltage 5% min. of rated voltage								
Max. voltage	Max. voltage 120% of rated voltage at 23°C							
Power consumption App		Approx. 500 r	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	Armature OFF	0.18	0.46	0.70	1.67	2.90	6.72	20.1
(H) (ref. value)	Armature OFF	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 180% of rated voltage at 23°C					150% of rated voltage (at 23°C)			
Power consumption		Approx. 150 mW Approx. 200 mW						Approx. 580 mW

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

■ Contact Ratings

Item	Standard models	High sensitivity models		
Load	Resistive load (cosø = 1)			
Rated load	0.5 A at 125 VAC; 2 A at 30 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: P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation

^{2.} Operating characteristics are measured at a coil temperature of 23°C.

■ Characteristics

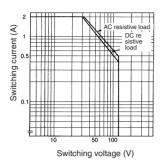
Item	Standard models	High sensitivity models				
Contact resistance	50 mΩ max.	100 mΩ max.				
Operate time	7 ms max.					
Release time	3 ms max.	3 ms max.				
Bounce Time	Operate: approx. 0.3 ms Release: approx. 1.5 ms					
Max. operating frequency	Mechanical: 36,000 operations/hr Electrical: 1,800 operations/hr (under rated load	Mechanical: 36,000 operations/hr Electrical: 1,800 operations/hr (under rated load)				
Insulation resistance	1,000 MΩ min. (at 500 VDC)					
Dielectric strength	1,500 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 contact	cts (conforms to FCC part 68)				
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single Malfunction: 10 to 55 to 10 Hz, 0.75-mm single					
Shock resistance	Destruction: 1,000 m/s² (approx. 100G) Malfunction: 200 m/s² (approx. 20G)	Destruction: 1,000 m/s² (approx. 100G) Malfunction: 100 m/s² (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%	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)

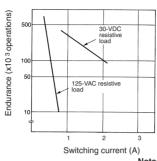
Contact form	Coil rating	Contact rating		
		G5V-2	G5V-2-H1	
DPDT	3 to 48 VDC	0.6 A, 110 VDC (resistive load)	0.5 A, 125 VAC (general use) 0.2 A, 110 VDC (resistive load) 1 A, 24 VDC (resistive load)	

Engineering Data

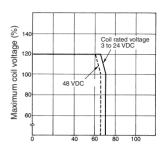
Maximum Switching Power G5V-2



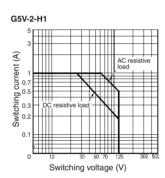
Endurance G5V-2

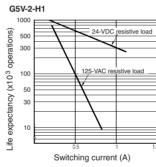


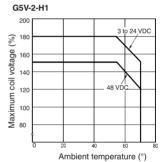
Ambient Temperature vs. Maximum Coil Voltage G5V-2



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







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:

