OMRON

Special-purpose PCB Relay
G5PA-1

G5PA Ideal for Power Switching and Isolation of TV Screen, TV Tuner, Video Accessories, and Audio Systems

- High-capacity, high-isolation switching ideal for today's remote controlled large-screen TVs with built-in tuners and accessories (DVD, TiVO, etc.).
- Power saving for today's energy conservation requirements!! Reduced 250 mW power consumption (150 mW optional).
- Achieves 5 year HDTV/large screen very high inrush TV power switching (@ std. 1/hr)!
- Extended contact gap provides isolation from devastating lightning strikes and power grid surges.
- Equipped with double-insulation construction assuring isolation of video/data feed and accessories from power.
- Models conforming to UL508, CSA C22.2, VDE0435/ IEC255, and SEMKO are available.

Ordering Information

Classification	Contact form	Enclosure ratings	Model
Standard	SPST-NO	Flux protection	**G5PA-1**

Note: When ordering, add the rated coil voltage to the model number.
Example: G5PA-1 12 VDC
Rated coil voltage

■ Model Number Legend

G5PA-1-❑-❑-❑-DC❑
1 2 3 4

Number of poles
1: 1 pole, form A (SPST-NO)

1. Seal Rating
No symbol: flux sealed (IP-52)
-S: fully sealed (IP-67)

2. Power Usage
No symbol: 250 mW
-H: 150 mW
-M: 540 mW

3. Capacity
No symbol: 5A, 250 mW
-E: 10A, 540 mW
-H-E 1A, 250 mW

4. Rated for Coil Voltage
5, 6, 9, 12, 18, 24 VDC
(3 VDC possible)

Note: 1. optional low audible version
2. former -8-type (.42 mm coil terminal) is now standard

Specifications

■ Coil Ratings

Rated voltage	12 VDC	24 VDC
Rated current	20.8 mA	10.4 mA
Coil resistance	576 Ω	2,304 Ω
Must operate voltage	80% of rated voltage max.	
Must release voltage	10% of rated voltage min.	
Max. permissible voltage	150% of rated voltage (at 23°C)	
Power consumption	250 mW (other options available)	

Note: 1. Each rated current or coil resistance value must allow a tolerance of ±10% at a coil temperature of 23°C.
2. The operating characteristics are values at a coil temperature of 23°C.
3. The maximum permissible voltage is the maximum voltage that is applicable to the relay coil for an instant.

■ Contact Ratings

Rated load (capacitive load)	250 VAC with inrush current of 100 A (0 to peak) and constant current of 3 A (rms)
Resistive load (reference value)	10 A @ 250 VAC; 5A @ 30 VDC/277 VAC (@40°C)
Max. switching voltage	277 VAC, 30 VDC
Max. switching current	10 A (@40°C)

■ Characteristics

Contact resistance (see note 2)	100 mΩ max.
Operate time	15 ms max.
Release time	5 ms max.
Insulation resistance (see note 3)	1,000 MΩ min. (at 500 VDC)
Dielectric strength	4,000 VAC 50/60 Hz for 1 min between coil and contacts 1,000 VAC 50/60 Hz for 1 min between contacts of same polarity
Impulse withstand voltage	10 kV (1.2 x 50 μs between coil and contacts), 12 kV optional
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 Malfunction: 200 m/s^2
Endurance	Mechanical: 1,000,000 operations min. (at 18,000 operations an hour) Electrical: 40,000 operations min. with a rated load at a 1,800 operations an hour. 100,000 operations min. with a resistive load (reference value)
Ambient temperature	Operating: -40°C to 70°C (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 10 g

■ Approved Standards

UL (File No. E41515, UL508)
CSA (File No. LR31928, C22.2 No. 14)

Model	Coil ratings	Contact ratings	Number of test operations
G5PA-1	5 to 24 VDC (@40°C)	5 A, 277 VAC	30,000
		5 A, 30 VDC	6,000
			30,000 (optional)
		10 A, 250 VAC	100,000
		TV-5 rating	25,000
		TV-8 rating	25,000 (optional)

SEMKO (Certificate No. 9732043; EN60065)

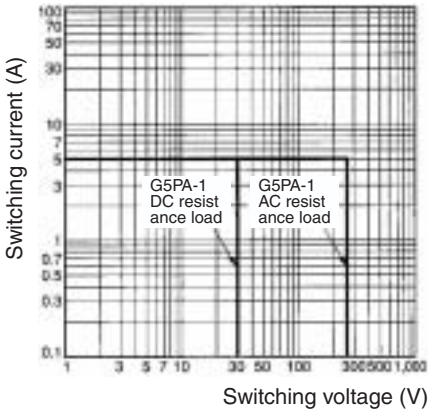
Model	Coil ratings	Contact ratings	Number of test operations
G5PA-1	5 to 28 VDC (@ 40°C)	5 A/40 A, 250 VAC	10,000
		3 A/100 A, 250 VAC	

TÜV (Certificate No. R9650435, IEC255/VDE0435)

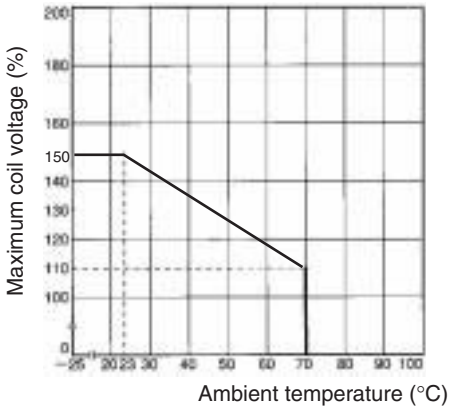
Model	Coil ratings	Contact ratings	Number of test operations
G5PA-1	5 to 24 VDC	5 A, 250 VAC (cos ϕ = 1)	100,000
		5 A, 30 VDC (L/R: 0: ms)	

Engineering Data

■ Maximum Switching Power



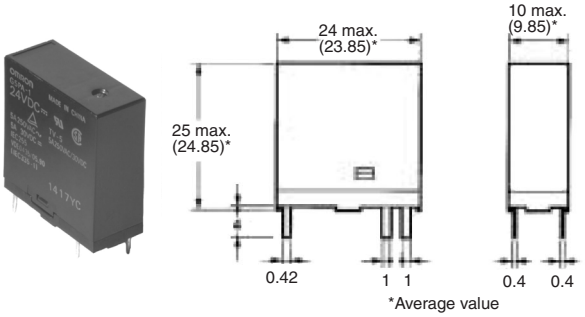
■ Ambient Temperatures vs. Maximum Coil Voltage



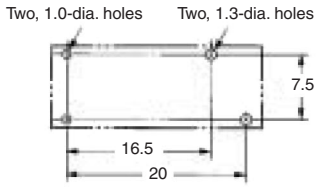
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not continuous voltage.

Dimensions

Note: All units are in millimeters unless otherwise indicated.



Mounting Holes
(Bottom View)
Tolerance: ±0.1 mm.



Terminal Arrangement/ Internal Connections
(Bottom View)

No coil polarity

Omron Electronic Components, LLC

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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