

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 $\pm 10\%$ 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)

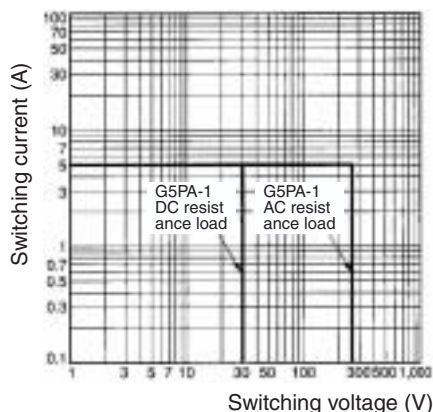
| Model | Coil ratings | Contact ratings | Number of test operations |
|--------|----------------------|--------------------|---------------------------|
| G5PA-1 | 5 to 28 VDC (@ 40°C) | 5 A/40 A, 250 VAC | 10,000 |
| | | 3 A/100 A, 250 VAC | |

TÜV (Certificate No. R9650435, IEC255/VDE0435)

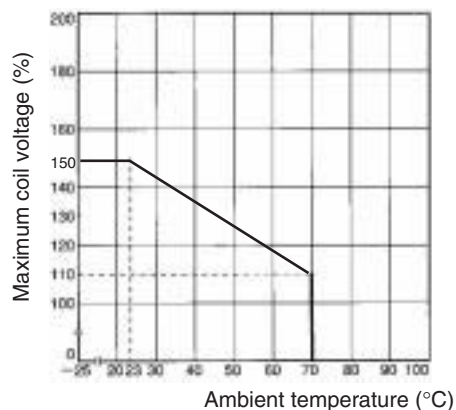
| Model | Coil ratings | Contact ratings | Number of test operations |
|--------|--------------|-----------------------------|---------------------------|
| G5PA-1 | 5 to 24 VDC | 5 A, 250 VAC (cos φ = 1) | 100,000 |
| | | 5 A, 30 VDC (L/R: 0: ms) | |

Engineering Data

Maximum Switching Power



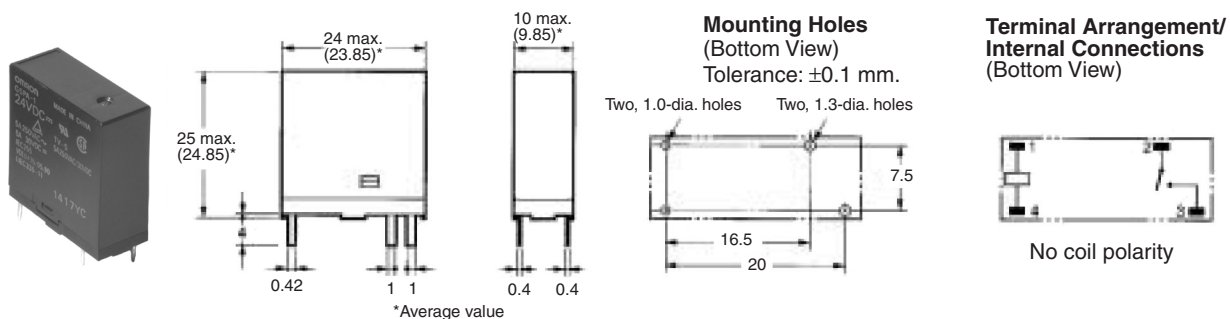
Ambient Temperatures vs. Maximum Coil Voltage



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.



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