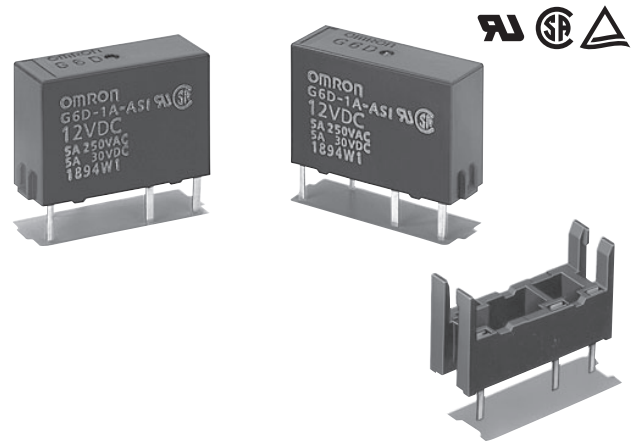


Slim, Miniature Relay, Capable of Relaying Programmable Controller and Temperature Controller Outputs

- Reduced board space, ideal for high-density mounting (45%. (6.5 mm (W) × 17.5 mm (L) × 12.5 mm (H))
- Small, yet switches 5 A at 250 VAC/30 VDC.
- Allows 300,000 operations with a 2A load at 250 VAC or 30 VDC.



Model Number Legend

G6D-□□-□-□
 1 2 3 4

- 1. Number of Poles**
1: 1-pole
- 2. Contact Form**
A: SPST-NO (1a)
- 3. Contact Material**
ASI: Silver alloy (cadmium-free)
- 4. Contact surface**
AP: Au plated

Ordering Information

| Enclosure rating | Contact form | Terminal shape | Model | Rated coil voltage | Minimum packing unit |
|------------------|--------------|----------------|---------------|--------------------|----------------------|
| Fully sealed | SPST-NO (1a) | PCB terminals | G6D-1A-ASI | 5 VDC | 25 pcs/tube |
| | | | | 12 VDC | |
| | | | G6D-1A-ASI-AP | 12 VDC | |
| | | | | 24 VDC | |

Note. When ordering, add the rated coil voltage to the model number.

Example: G6D-1A-ASI DC5

Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as □□ VDC.

Connecting Socket

| Applicable relay | Model | Minimum packing unit |
|------------------|---------|----------------------|
| G6D-1A-ASI | P6D-04P | 25 pcs |

Ratings

Coil

| Item | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) | Must release voltage (V) | Max. voltage (V) | Power consumption (mW) |
|---------------|--------------------|---------------------|--------------------------|--------------------------|------------------|------------------------|
| Rated voltage | | | % of rated voltage | | | |
| 5 VDC | 40 | 125 | 70% max.* | 10% min. | 160% (at 23°C) | Approx. 200 |
| 12 VDC | 16.7 | 720 | | | | |
| 24 VDC | 8.3 | 2,880 | | | | |

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

Note 2. The operating characteristics are measured at a coil temperature of 23°C.

Note 3. The "Max. voltage" is the maximum voltage that can be applied to the relay coil.

* The must operate voltage is 75% or less of the rated voltage if the relay is mounted upside down.

Contacts

| Item | Load | Resistive load |
|------------------------|------|---|
| Contact Type | | Single |
| Contact material | | Ag-Alloy (Cd free) (Ag-alloy (Cd free) and Au plated)* |
| Rated load | | 5 A at 250 VAC 5 A at 30 VDC |
| Rated carry current | | 5 A |
| Max. switching voltage | | 250 VAC, 30 VDC |
| Max. switching current | | 5 A |

* The content indicated in parentheses () are for the G6D-1A-ASI-AP

Application Examples

- Ideal for output applications of control equipments.

Characteristics

| | | |
|---|---|---|
| Contact resistance *1 | 100 mΩ max. | |
| Operate time | 10 ms max. | |
| Release time | 5 ms max. | |
| Insulation resistance *2 | 1,000 MΩ min. | |
| Dielectric strength | Between coil and contacts | 3,000 VAC, 50/60 Hz for 1 min |
| | Between contacts of the same polarity | 750 VAC, 50/60 Hz for 1 min |
| Impulse withstand voltage (between coil and contacts) | 6 kV (1.2 x 50 μs) | |
| 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 | 100 m/s ² |
| Durability | Mechanical | 20,000,000 operations min. (at 18,000 operations/hr) |
| | Electrical | 70,000 operations min. (5 A at 250 VAC, resistive load) 70,000 operations min. (5 A at 30 VDC, resistive load) 300,000 operations min. (2 A at 250 VAC, resistive load) 300,000 operations min. (2 A at 30 VDC, resistive load) (at 1,800 operations/hr) |
| Failure rate (P level) (reference value *3) | 10 mA at 5 VDC (1 mA at 5 VDC) *4 | |
| Ambient operating temperature | -25°C to 70°C (with no icing or condensation) | |
| Ambient operating humidity | 5% to 85% | |
| Weight | Approx. 3 g | |

Note. The data given above are initial values.

*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.

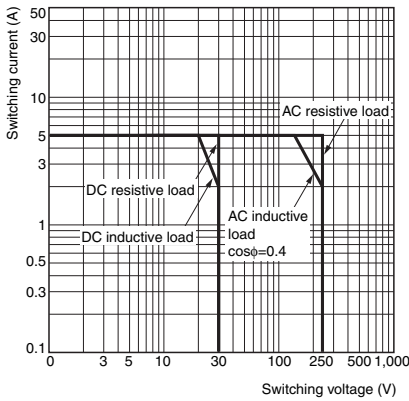
*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.

*3. This value was measured at a switching frequency of 120 operations/min.

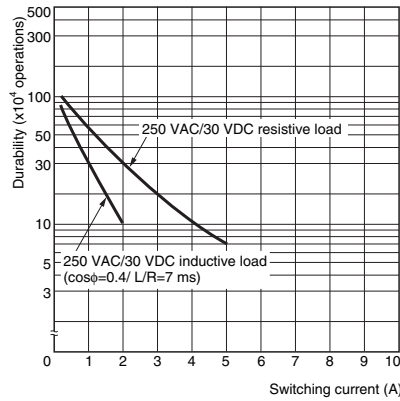
*4. The values indicated in parentheses () are for the G6D-1A-ASI-AP.

Engineering Data

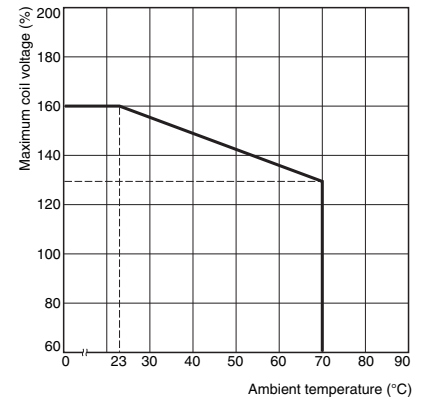
Maximum Switching Capacity



Durability



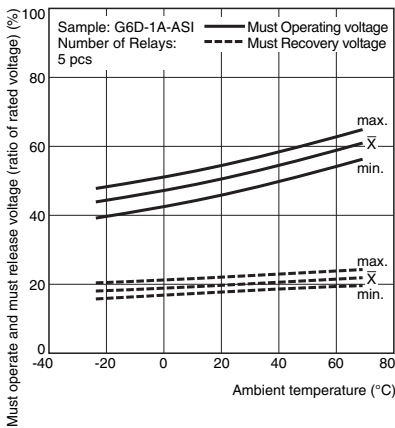
Ambient Temperature vs. Maximum Coil Voltage



Note. The maximum coil voltage is the maximum voltage that can be applied to the relay coil.

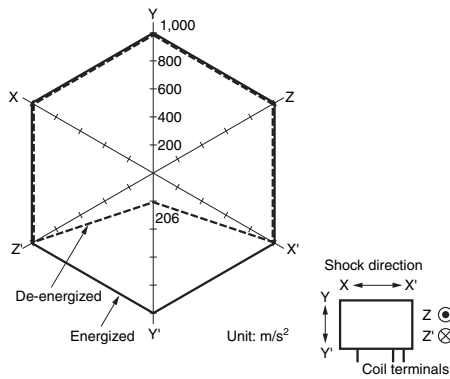
Ambient Temperature vs. Must Operate and Must Release Voltages

G6D-1A-ASI (-AP)



Shock Malfunction

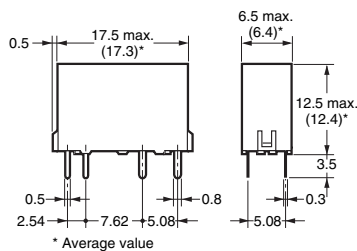
G6D-1A-ASI (-AP)



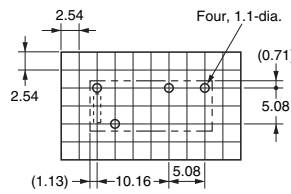
Sample: G6D-1A-ASI 24 VDC
 Number of Relays: 5 pcs
 Test conditions: Impose a shock in the $\pm X$, $\pm Y$, and $\pm Z$ directions three times each with the Relay energized to check the shock values that cause the Relay to malfunction.

Dimensions

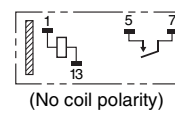
G6D-1A-ASI (-AP)



PCB Mounting Holes (Bottom View)

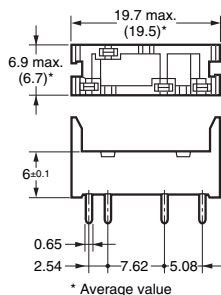
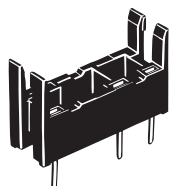


Terminal Arrangement/ Internal Connections (Bottom View)

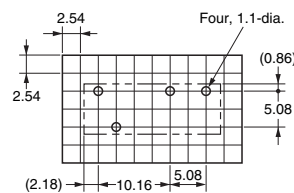


Note: Orientation marks are indicated as follows:

Socket P6D-04P



PCB Mounting Holes (Bottom View)



Approved Standards

●The rated values approved by each of the safety standards may be different from the performance characteristics individually defined in this datasheet.

UL Recognized (File No. E41515)

| Model | Number of poles | Coil ratings | Contact ratings | Number of test operations |
|------------------|-----------------|--------------|-------------------|---------------------------|
| G6D-1A-ASI (-AP) | 1 | 5 to 24 VDC | 5 A, 250 VAC 40°C | 6,000 |
| | | | 5 A, 30 VDC 40°C | |

CSA Certified (File No. LR31928)

| Model | Number of poles | Coil ratings | Contact ratings | Number of test operations |
|------------------|-----------------|--------------|-------------------------------|---------------------------|
| G6D-1A-ASI (-AP) | 1 | 5 to 24 VDC | 5 A, 250 VAC (Resistive) 40°C | 6,000 |
| | | | 5 A, 30 VDC (Resistive) 40°C | |

ENTÜV Certified (Registration No. R50167084)

| Model | Number of poles | Coil ratings | Contact ratings | Number of test operations |
|------------------|-----------------|---------------|------------------------------|---------------------------|
| G6D-1A-ASI (-AP) | 1 | 5, 12, 24 VDC | 5 A, 250 VAC (cosφ=1.0) 70°C | 70,000 |
| | | | 5 A, 30 VDC (0 ms) 40°C | |

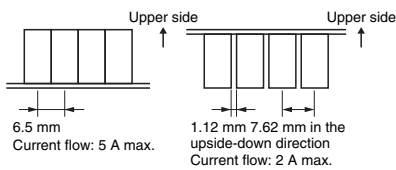
Precautions

●Please refer to “PCB Relays Common Precautions” for correct use.

Correct Use

●Mounting

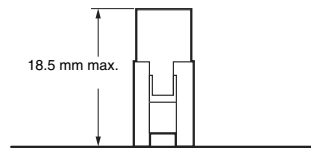
- More than two relays can be closely mounted right side up as shown in the following illustration.



Note. The space between each relay required for heat radiation may vary with operating conditions. Contact your OMRON representative for details.

- Use Surge Killer Diode when switching a DC inductive load in micro load (about 10 to 100 mA).
(Carbon deposition may decrease the contact reliability.)

●Socket Mounting Height



●Mounting to a P6D

- The P6D is flux-resistant. Do not wash the P6D with water.
- Dismount the relay from the socket before soldering the socket to a PCB.

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