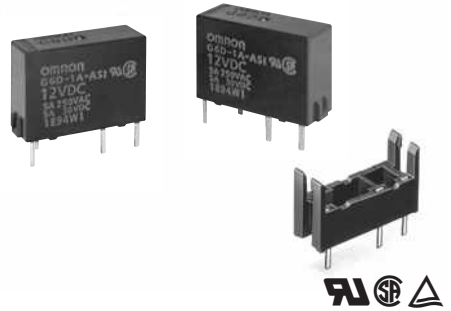


## Slim, Miniature Relay, Capable of Relaying Programmable Controller and Temperature Controller Outputs

- ROHS compliant.
- Slim and miniature: 17.5 x 6.5 x 12.5 mm (L x W x H).
- Ideal for high-density mounting
- Switches 5 A at 250 VAC/30 VDC.
- Allows 300,000 operations with a 2-A load at 250 VAC or 30 VDC.
- Actual load switching capability equals the G6B's capability.
- Washable construction.



## Ordering Information

| Classification | Contact form | Enclosure ratings | Model      |
|----------------|--------------|-------------------|------------|
| Standard       | SPST-NO      | Fully sealed      | G6D-1A-ASI |

**Note:** When ordering, add the rated coil voltage to the model number.  
 Example: G6D-1A-ASI 12 VDC

\_\_\_\_\_ Rated coil voltage

### Model Number Legend

G6D -   -   VDC  
 1 2 3 4

- |   |  |
|---|--|
| <p><b>1. Number of Poles</b><br/>1: 1 pole</p> <p><b>2. Contact Form</b><br/>A: SPST-NO</p> | <p><b>3. Contact Material</b><br/>ASI: Silver alloy (cadmium-free)</p> <p><b>4. Rated Coil Voltage</b><br/>5, 12, 24 VDC</p> |
|---|--|

## ■ Accessories (Order Separately)

|                   |         |
|-------------------|---------|
| Connecting Socket | P6D-04P |
|-------------------|---------|

## Specifications

### ■ Coil Ratings

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

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

### ■ Contact Ratings

|                                |   |
|--------------------------------|---|
| Rated load                     | 5 A at 250 VAC, 5 A at 30 VDC, resistive load |
| Contact material               | AgSnIn  |
| Rated carry current            | 5 A   |
| Max. switching voltage         | 250 VAC, 30 VDC                               |
| Max. switching current         | 5 A   |
| Max. switching power           | 1,250 VA, 150 W                               |
| Failure rate (reference value) | 10 mA at 5 VDC                                |

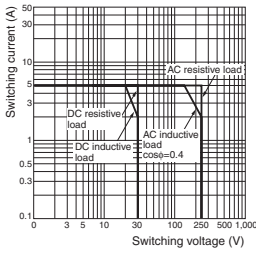
Note: P level:  $\lambda_{60} = 0.1 \times 10^{-6}$ /operation.

### ■ Characteristics

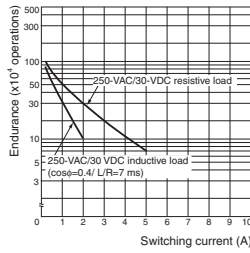
|                           |   |        |
|---------------------------|---|--------|
| Contact resistance        | 100 mΩ max.   |        |
| Operate time              | 10 ms max.  |        |
| Release time              | 5 ms max.   |        |
| Insulation resistance     | 1,000 MΩ min. (at 500 VDC)  |        |
| Dielectric strength       | 3,000 VAC, 50/60 Hz for 1 min between coil and contacts<br>750 VAC, 50/60 Hz for 1 min between contacts of same polarity  |        |
| Impulse withstand voltage | 6KV 1.2x50μsec (between coil and contacts)  |        |
| Insulation Distance       | Creepage (Typ)  | 4.5 mm |
|                           | Clearance (Typ)   | 4.5 mm |
| Tracking Resistance (CTI) | 100 V   |        |
| Vibration resistance      | Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)<br>Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)  |        |
| Shock resistance          | Destruction: 1,000 m/s <sup>2</sup><br>Malfunction: 100 m/s <sup>2</sup>  |        |
| Endurance                 | Mechanical: 20,000,000 operations min. (at 18,000 operations/hr)<br>Electrical: 70,000 operations min. (5 A at 250 VAC/30 VDC, resistive load)<br>300,000 operations min. (2 A at 250 VAC/30 VDC, resistive load) |        |
| Ambient temperature       | Operating: -25°C to 70°C (with no icing)  |        |
| Ambient humidity          | Operating: 5% to 85%  |        |
| Weight                    | Approx. 3 g   |        |

## Engineering Data

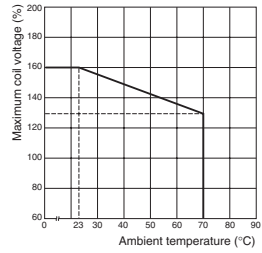
### Maximum Switching Power



### Endurance

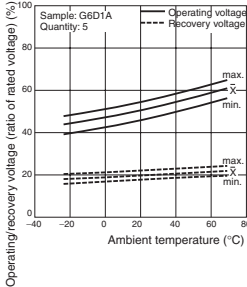


### Ambient Temperature vs. Maximum Coil Voltage

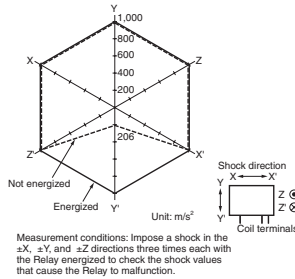


**Note:** The maximum coil voltage is the maximum voltage that can be applied to the relay coil

### Ambient Temperature vs. Operating/Recovery Voltage G6D-1A-ASI



### Malfunctioning Shock G6D-1A-ASI



### Approved Standards

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

#### UL Approval (File No. E41515) UL508

| Model      | Number of poles | Coil ratings | Contact Ratings                           | Number of test operations |
|------------|-----------------|--------------|---|---------------------------|
| G6D-1A-ASI | 1               | 5 to 24 VDC  | 5 A, 250 VAC (General Use)<br>5 A, 30 VDC | 6,000                     |

#### CSA Approval (File No. LR31928) C22.2 No. 14

| Model      | Number of poles | Coil ratings | Contact Ratings                                       | Number of test operations |
|------------|-----------------|--------------|---|---------------------------|
| G6D-1A-ASI | 1               | 5 to 24 VDC  | 5 A, 250 VAC (General Use)<br>5 A, 30 VDC (Resistive) | 6,000                     |

#### EN/TÜV Approval (Registration No. R50029064/EN61810-1)

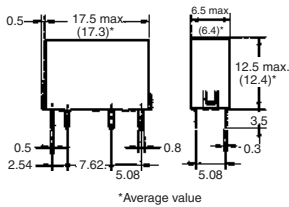
| Model      | Number of poles | Coil ratings  | Contact Ratings                                 | Number of test operations |
|------------|-----------------|---------------|---|---------------------------|
| G6D-1A-ASI | 1               | 5, 12, 24 VDC | 5 A, 250 VAC (cosφ = 1.0)<br>5 A, 30 VDC (0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

## Dimensions

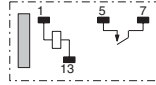
Note: 1. All units are in millimetres unless otherwise indicated.

2. Orientation marks are indicated as follows:  

### G6D-1A-ASI

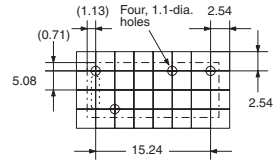


### Terminal Arrangement/ Internal Connections (Bottom View)

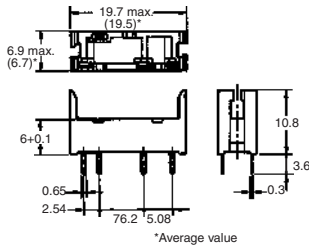


### Mounting Holes (Bottom View)

Tolerance:  $\pm 0.1$

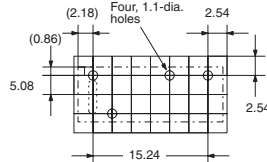


### P6D-04P Socket



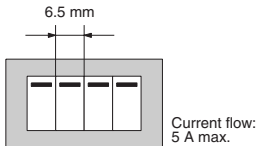
### Mounting Holes (Bottom View)

Tolerance:  $\pm 0.1$

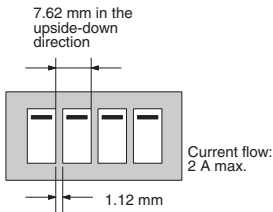


## Precautions

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

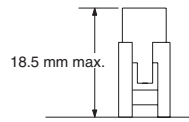


More than two relays can be closely mounted upside down as shown in the following illustration.



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

### SOCKET MOUNTING HEIGHT



When mounting the relay, insert it into the socket as vertically as possible so that the relay terminals contact securely with the contact pins on the socket.

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.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.**

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