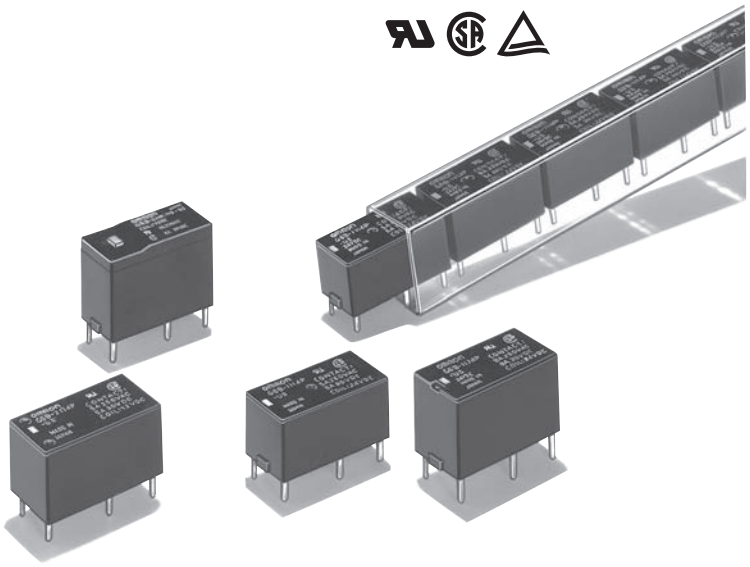
# G6B
PCB Power Relay

## High Capacity and High Dielectric Strength Miniature Relay with Fully Sealed Construction in 5 A (8 A) SPST-NO(1a), SPST-NO+SPST-NC(1a1b), DPST-NO(2a), DPST-NC(2b) Types



- P6B model for connecting sockets are available.
- High insulation with dielectric strength of 3,000VAC between coil and contacts (impulse withstand voltage of 6 kV).
- Standard model conforms to UL/CSA standards.
- AgSnIn contacts suitable for loads that generate surge voltage (inductive load, capacity load, etc.) are available. (-FD type)
- Ultrasonic cleanable models are available. (-U type)
- Operation indicator & built-in surge absorption diode models are available. (-ND type)
- 2-Pole type available.
- High-reliability models are available.
  G6B-1184P-US model (The relay used in Terminal Relay G6B-48BND)

**RoHS Compliant**

## ■Application Examples

- Ideal for output applications of control equipments

## ■Model Number Legend

G6B□-□□□□□-□-□-□-□-□-□-□
1 2 3 4 5 6 7 8 9 10 11

**1. Relay Function**
None: Single-side stable
U : Single-winding latching (G6B□-1114 models only)
K : Double-winding latching (G6B□-1114 models only)

**2. Contact Form**
21: SPST-NO + SPST-NC
22: DPST-NO
20: DPST-NC
11: SPST-NO

**3. Classification**
1: Standard
7: High-capacity
8: Single crossbar

**4. Enclosure rating**
4: Fully sealed
7: Flux protection

**5. Terminal Shape**
P: Straight PCB terminals
Socket mounting terminals
C: Self-clinching PCB

**6. Contact material**
None: Standard (Ag-alloy (Cd free))
FD : AgSnIn contact (Suitable for DC inductive load with high inrush current)

**7. Coil Polarity**
None: 5, 6 Terminal (+), 1, 2 Terminal (-)
1 : 5, 6 Terminal (-), 1, 2 Terminal (+)

**8. Operation Indicator Diode Availability**
None: Standard
ND : Operation indicator & coil surge absorption diode (for -1177 type only)

**9. Approved Standards**
US: UL/CSA

**10. Washability**
None: Standard
U : For ultrasonically cleanable

**11. Mounting**
None: Mounted directly to PCB
P6B : Mounted to Socket

## ■Ordering Information

### ●Standard Models (UL, CSA certified)

| Number of poles | Relay Function | Contact form | Contact material / Terminals | Standard (Ag-alloy (Cd free)) Model | Standard (Ag-alloy (Cd free)) Rated coil voltage | AgSnIn contact Model | AgSnIn contact Rated coil voltage | Minimum packing unit |
|---|---|---|---|---|---|---|---|---|
| 1-pole | Single-side stable | SPST-NO (1a) (Standard) | Straight PCB | **G6B-1114P-US** | 5, 6, 12, 24 VDC | **G6B-1114P-FD-US** | 5, 6, 12, 24 VDC | 100 pcs/tray |
| | | | Self-clinching PCB | **G6B-1114C-US** | 5, 6, 12, 24 VDC | **G6B-1114C-FD-US** | 12, 24 VDC | |
| | | SPST-NO (1a) (High-capacity) | Straight PCB | **G6B-1174P-US** | 5, 6, 12, 24 VDC | **G6B-1174P-FD-US** | 5, 6, 12, 24 VDC | 20 pcs/tube |
| | | | Self-clinching PCB | **G6B-1174C-US** | 5, 12, 24 VDC | **G6B-1174C-FD-US** | 5, 12, 24 VDC | |
| | | SPST-NO (1a) (High-reliability ) | Straight PCB | **G6B-1184P-US** | 5, 12, 24 VDC | --- | --- | 100 pcs/tray |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | Single-winding latching | SPST-NO (1a) (Standard) | Straight PCB | **G6BU-1114P-US** | 5, 6, 12, 24 VDC | **G6BU-1114P-FD-US** | 5, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6BU-1114C-US** | 12 VDC | --- | --- | |
| | Double-winding latching | SPST-NO (1a) (Standard) | Straight PCB | **G6BK-1114P-US** | 5, 6, 12, 24 VDC | **G6BK-1114P-FD-US** | 5, 6, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6BK-1114C-US** | 5, 6, 12, 24 VDC | **G6BK-1114C-FD-US** | 24 VDC | |
| | Single-side stable | SPST-NO (1a) (Built-in high-capacity operation indicator & diode) | Straight PCB | **G6B-1177P-ND-US** | 5, 12, 24 VDC | **G6B-1177P-FD-ND-US** | 5, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6B-1177C-ND-US** | 5, 12, 24 VDC | **G6B-1177C-FD-ND-US** | 12, 24 VDC | |
| 2-pole | Single-side stable | SPST-NO (1a)+ SPST-NC (1b) (Standard) | Straight PCB | **G6B-2114P-US** | 5, 6, 12, 24 VDC | **G6B-2114P-FD-US** | 5, 6, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6B-2114C-US** | 5, 12, 24 VDC | **G6B-2114C-FD-US** | 5, 12 VDC | |
| | | DPST-NO (2a) (Standard) | Straight PCB | **G6B-2214P-US** | 5, 6, 12, 24 VDC | **G6B-2214P-FD-US** | 5, 6, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6B-2214C-US** | 5, 12, 24 VDC | **G6B-2214C-FD-US** | 5, 12, 24 VDC | |
| | | DPST-NC (2b) (Standard) | Straight PCB | **G6B-2014P-US** | 5, 6, 12, 24 VDC | **G6B-2014P-FD-US** | 5, 6, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6B-2014C-US** | 5, 6, 12, 24 VDC | **G6B-2014C-FD-US** | 12, 24 VDC | |

Note: AgSnIn contact models are highly welding-resistant, and roughening of contacts due to inrush current and inductive load is lessened.

### ●Models for Reverse Coil Polarity

| Number of poles | Relay Function | Contact form | Contact material / Terminals | Standard (Ag-alloy (Cd free)) Model | Standard (Ag-alloy (Cd free)) Rated coil voltage | AgSnIn contact Model | AgSnIn contact Rated coil voltage | Minimum packing unit |
|---|---|---|---|---|---|---|---|---|
| 1-pole | Single-side stable | SPST-NO (1a) (Standard) | Straight PCB | **G6B-1114P-1-US** | 5, 6, 12, 24 VDC | **G6B-1114P-FD-1-US** | 24 VDC | 100 pcs/tray |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | | SPST-NO (1a) (High-capacity) | Straight PCB | **G6B-1174P-1-US** | 5, 12, 24 VDC | --- | --- | 20 pcs/tube |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | Single-winding latching | SPST-NO (1a) (Standard) | Straight PCB | **G6BU-1114P-1-US** | 5, 12 VDC | --- | --- | 100 pcs/tray |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | Double-winding latching | SPST-NO (1a) (Standard) | Straight PCB | **G6BK-1114P-1-US** | 5, 6, 12, 24 VDC | --- | --- | |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| 2-pole | Single-side stable | SPST-NO (1a)+ SPST-NC (1b) (Standard) | Straight PCB | **G6B-2114P-1-US** | 5, 6, 12, 24 VDC | **G6B-2114P-FD-1-US** | 12, 24 VDC | |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | | DPST-NO (2a) (Standard) | Straight PCB | **G6B-2214P-1-US** | 5, 12, 24 VDC | --- | --- | |
| | | | Self-clinching PCB | --- | --- | --- | --- | |

Note: AgSnIn contact models are highly welding-resistant, and roughening of contacts due to inrush current and inductive load is lessened.

### ●Models for Ultrasonically Cleanable

| Number of poles | Relay Function | Contact form | Contact material / Terminals | Standard (Ag-alloy (Cd free)) Model | Standard (Ag-alloy (Cd free)) Rated coil voltage | AgSnIn contact Model | AgSnIn contact Rated coil voltage | Minimum packing unit |
|---|---|---|---|---|---|---|---|---|
| 1-pole | Single-side stable | SPST-NO (1a) (Standard) | Straight PCB | **G6B-1114P-US-U** | 5, 6, 12, 24 VDC | **G6B-1114P-FD-US-U** | 6, 12, 24 VDC | 100 pcs/tray |
| | | | Self-clinching PCB | **G6B-1114C-US-U** | 5, 12, 24 VDC | --- | --- | |
| | Single-winding latching | SPST-NO (1a) (Standard) | Straight PCB | **G6BU-1114P-US-U** | 24 VDC | --- | --- | |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | Double-winding latching | SPST-NO (1a) (Standard) | Straight PCB | **G6BK-1114P-US-U** | 5, 6, 12, 24 VDC | **G6BK-1114P-FD-US-U** | 12, 24 VDC | |
| | | | Self-clinching PCB | **G6BK-1114C-US-U** | 24 VDC | --- | --- | |
| 2-pole | Single-side stable | SPST-NO (1a)+ SPST-NC (1b) (Standard) | Straight PCB | **G6B-2114P-US-U** | 5, 12, 24 VDC | **G6B-2114P-FD-US-U** | 5, 12, 24 VDC | |
| | | | Self-clinching PCB | --- | --- | --- | --- | |
| | | DPST-NO (2a) (Standard) | Straight PCB | **G6B-2214P-US-U** | 5, 6, 12, 24 VDC | **G6B-2214P-FD-US-U** | 5, 12, 24 VDC | |
| | | | Self-clinching PCB | **G6B-2214C-US-U** | 12, 24 VDC | --- | --- | |
| | | DPST-NC (2b) (Standard) | Straight PCB | **G6B-2014P-US-U** | 5, 12, 24 VDC | **G6B-2014P-FD-US-U** | 5, 12, 24 VDC | |
| | | | Self-clinching PCB | --- | --- | --- | --- | |

Note: When ordering, add the rated coil voltage to the model number.
Example: G6B-1114P-US 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 Sockets (Sold Separately)

| Applicable relay | Model | Minimum ordering unit |
|---|---|---|
| G6B-1114P(-FD)-US-P6B<br>G6B-1174P(-FD)-US-P6B<br>G6B-1177P(-FD)-ND-US-P6B<br>G6BU-1114P-US-P6B | **P6B-04P** | 20 pcs |
| G6BK-1114P-US-P6B | **P6B-06P** | |
| G6B-2114P-US-P6B<br>G6B-2214P-US-P6B<br>G6B-2014P-US-P6B | **P6B-26P** | |
| Removal Tool | **P6B-Y1** | 1 pcs |
| Hold-down Clips | **P6B-C2** | |

Note 1. G6B-1174P-US-P6B and G6B-1177P-ND-US-P6B are rated for 8 A when mounted on a PCB. However, when used with the P6B-04P socket models, the allowable current is derated to 5 A.
2. The P6B sockets are designed to be used with G6B-□□□□P(-FD)-US-P6B relays. Only use G6B relays that include "-P6B" in their model numbers with the sockets. Do not use standard G6B's that omit "-P6B" from their model numbers with the sockets.
3. The hold-down clips of the P6B-C2 model are not suitable for the G6B-1174P and G6B-1177P models since they have different heights.
4. Products with UL/CSA certification marks will be supplied for orders of standard models.

## ■Ratings

### ●Coil: 1-Pole, Single-side Stable Type (Including models for ultrasonically cleanable)

| Item / Rated voltage | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) % of rated voltage | Must release voltage (V) % of rated voltage | Max. voltage (V) % of rated voltage | Power consumption (mW) |
|---|---|---|---|---|---|---|
| 5 VDC | 40 | 125 | 70% max. | 10% min. | 160% (at 23°C) | Approx. 200 |
| 6 VDC | 33.3 | 180 | | | | |
| 12 VDC | 16.7 | 720 | | | | |
| 24 VDC | 8.3 | 2,880 | | | | |

### ●Coil: 2-Pole, Single-side Stable Type (Including models for ultrasonically cleanable)

| Item / Rated voltage | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) % of rated voltage | Must release voltage (V) % of rated voltage | Max. voltage (V) % of rated voltage | Power consumption (mW) |
|---|---|---|---|---|---|---|
| 5 VDC | 60 | 83.3 | 80% max. | 10% min. | 140% (at 23°C) | Approx. 300 |
| 6 VDC | 50 | 120 | | | | |
| 12 VDC | 25 | 480 | | | | |
| 24 VDC | 12.5 | 1,920 | | | | |

### ●Coil: Single-winding Latching Type (Including models for ultrasonically cleanable)

| Item / Rated voltage | Rated current (mA) | Coil resistance (Ω) | Must set voltage (V) % of rated voltage | Must reset voltage (V) % of rated voltage | Max. voltage (V) % of rated voltage | Power consumption Set coil (mW) | Power consumption Reset coil (mW) |
|---|---|---|---|---|---|---|---|
| 5 VDC | 40 | 125 | 70% max. | 70% max. | 160% (at 23°C) | 200 | 200 |
| 6 VDC | 33.3 | 180 | | | | | |
| 12 VDC | 16.7 | 720 | | | | | |
| 24 VDC | 8.3 | 2,880 | | | | | |

### ●Coil: Double-winding Latching Type (Including models for ultrasonically cleanable)

| Item / Rated voltage | Rated current (mA) Set coil | Rated current (mA) Reset coil | Coil resistance (Ω) Set coil | Coil resistance (Ω) Reset coil | Must set voltage (V) % of rated voltage | Must reset voltage (V) % of rated voltage | Max. voltage (V) % of rated voltage | Power consumption Set coil (mW) | Power consumption Reset coil (mW) |
|---|---|---|---|---|---|---|---|---|---|
| 5 VDC | 56 | 56 | 89.2 | 89.2 | 70% max. | 70% max. | 130% (at 23°C) | 280 | 280 |
| 6 VDC | 46.8 | 46.8 | 128.5 | 128.5 | | | | | |
| 12 VDC | 23.3 | 23.3 | 515 | 515 | | | | | |
| 24 VDC | 11.7 | 11.7 | 2,060 | 2,060 | | | | | |

### ●Coil: Operation Indicator Model (Flux-resistant type. Do not wash down with water.)

| Item / Rated voltage | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) % of rated voltage | Must release voltage (V) % of rated voltage | Max. voltage (V) % of rated voltage | Power consumption (mW) |
|---|---|---|---|---|---|---|
| 5 VDC | 43 | 116 | 70% max. | 10% min. | 130% (at 23°C) | Approx. 200 |
| 12 VDC | 19.7 | 610 | | | | Approx. 240 |
| 24 VDC | 11.3 | 2,120 | | | | Approx. 275 |

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.
2. The operating characteristics are measured at a coil temperature of 23°C.
3. The “Max. voltage” is the maximum voltage that can be applied to the relay coil.

### ●Contacts

| Model / Item / Load | G6B-1114P(-FD)(-1)-US G6BU-1114P(-FD)(-1)-US G6BK-1114P(-FD)(-1)-US G6B-1114C(-FD)-US G6BU-1114C-US G6BK-1114C(-FD)-US | | G6B-1174P(-FD)(-1)-US G6B-1177P(-FD)-ND-US G6B-1174C(-FD)-US G6B-1177C(-FD)-ND-US | | G6B-1184P-US | | G6B-2114P(-FD)(-1)-US G6B-2214P(-FD)(-1)-US G6B-2014P(-FD)-US G6B-2114C(-FD)-US G6B-2214C(-FD)-US G6B-2014C(-FD)-US | |
|---|---|---|---|---|---|---|---|---|
| | Resistive load | Inductive load (cosϕ = 0.4; L/R = 7 ms) | Resistive load | Inductive load (cosϕ = 0.4; L/R = 7 ms) | Resistive load | Inductive load (cosϕ = 0.4; L/R = 7 ms) | Resistive load | Inductive load (cosϕ = 0.4; L/R = 7 ms) |
| Contact type | Single | | | | Single crossbar | | Single | |
| Contact material | Ag-Alloy (Cd free) | | | | Au-alloy + Ag (Cd free) | | Ag-Alloy (Cd free) | |
| Rated load | 5 A (3 A) at 250 VAC 5 A (3 A) at 30 VDC | 2 A (2 A) at 250 VAC 2 A (2 A) at 30 VDC | 8 A (5 A) at 250 VAC 8 A (5 A) at 30 VDC | 2 A (2 A) at 250 VAC 2 A (2 A) at 30 VDC | 2 A at 250 VAC 2 A at 30 VDC | 0.5 A at 250 VAC 0.5 A at 30 VDC | 5 A (3 A) at 250 VAC 5 A (3 A) at 30 VDC | 1.5 A (1.5 A) at 250 VAC 1.5 A (1.5 A) at 30 VDC |
| Rated carry current | 5 A (5 A) | | 8 A (5 A) | | 2A | | 5 A (5 A) | |
| Max. switching voltage | 380 VAC, 125 VDC | | | | | | | |
| Max. switching current | 5 A (5 A) | | 8 A (5 A) | | 2A | | 5 A (5 A) | |

Note 1. The values in the parentheses ( ) are for -FD models only.
2. Use the -FD type for inductive load and switching load which contact roughening is small.

## ■Characteristics

| Item \ Model | G6B-1114P(-FD)(-1)-US G6B-1174P(-FD)(-1)-US G6B-1114C(-FD)-US G6B-1174C(-FD)-US | G6BU-1114P(-FD)(-1)-US G6BU-1114C-US | G6BK-1114P(-FD)(-1)-US G6BK-1114C(-FD)-US | G6B-1177P(-FD)-ND-US G6B-1177C(-FD)-ND-US | G6B-1184P-US | G6B-2114P(-FD)(-1)-US G6B-2214P(-FD)(-1)-US G6B-2014P(-FD)(-1)-US G6B-2114C(-FD)-US G6B-2214C(-FD)-US G6B-2014C(-FD)-US |
|---|---|---|---|---|---|---|
| Classification | Single-side stable | Single-winding latching | Double-winding latching | Built-in operation indicator & surge absorption diode | Single-side stable | Single-side stable |
| Contact resistance *1 | 30 mΩ max. | | | | 50 mΩ max. | 30 mΩ max. |
| Operate (set) time | 10 ms max. | | | | | |
| Release (reset) time | 10 ms max. | | | | | |
| Min. set pulse width | – | 15 ms (at 23°C) | | – | | |
| Min. reset pulse width | – | 15 ms (at 23°C) | | – | | |
| Insulation resistance *2 | 1,000 MΩ min. | | | | | |
| Dielectric strength: Between coil and contacts | 3,000 VAC, 50/60 Hz for 1 min | | 2,000 VAC, 50/60 Hz for 1 min | 3,000 VAC, 50/60 Hz for 1 min | | |
| Dielectric strength: Between contacts of the same polarity | 1,000 VAC, 50/60 Hz for 1 min | | | | | |
| Dielectric strength: Between contacts of different polarity | – | | | | | 2,000 VAC, 50/60 Hz for 1 min |
| Dielectric strength: Between set and reset coils | – | | 250 VAC, 50/60 Hz for 1 min | – | | |
| Impulse withstand voltage (between coil and contacts) | 6 kV 1.2 × 50 μs | 4.5 kV 1.2 × 50 μs | | 6 kV 1.2 × 50 μs | – | 6 kV 1.2 × 50 μs |
| Vibration resistance: Destruction | 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) | | | | | |
| Vibration resistance: Malfunction | 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) | | | | | |
| Shock resistance: Destruction | 1,000 m/s² | | | | | |
| Shock resistance: Malfunction | 100 m/s² | 300 m/s² | | 100 m/s² | | |
| Durability: Mechanical | 50,000,000 operations min. (at 18,000 operations/hr) | | | | | |
| Durability: Electrical | 100,000 operation min. (at 1,800 operations/hr under rated load) | | | | | |
| Failure rate (P level) (reference value) *3 | 10 mA at 5 VDC | | | | 1 mA at 1 VDC | 10 mA at 5 VDC |
| Ambient operating temperature | -25°C to 70°C (with no icing or condensation) | | | | | |
| Ambient operating humidity | 5% to 85% | | | | | |
| Weight | Approx. 3.5 to 4.6 g | Approx. 3.5 g | Approx. 3.7 g | Approx. 5.4 g | Approx. 3.5 g | Approx. 4.5 g |

Note 1. The values here are initial values.
2. The G6B-1177P(-FD)-ND model is flux-resistant. Do not wash it down with water.

*1. The contact resistance was measured with 1 A at 5 VDC using a voltage-drop method.

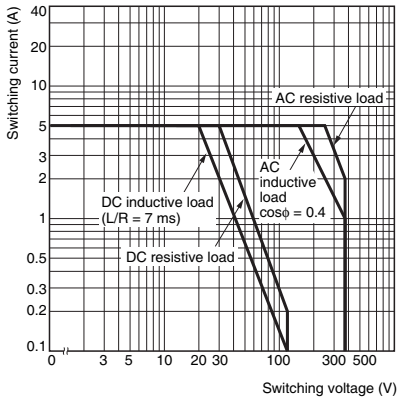
*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.(Except the location between set/reset coil)

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

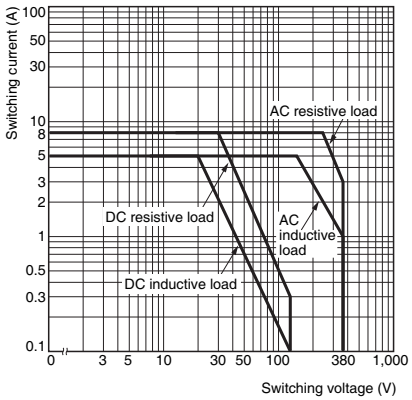
## ■Engineering Data

### ●Maximum Switching Current

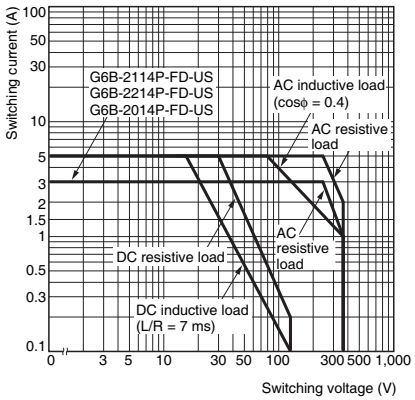
**G6B-1114P-US**
**G6B-1174P-FD-US**




**G6B-1174P-US**

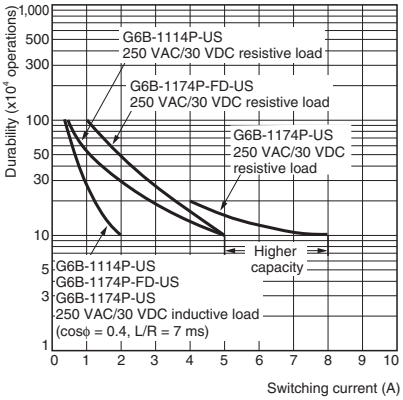



**G6B-2114P-US**
**G6B-2214P-US**
**G6B-2014P-US**

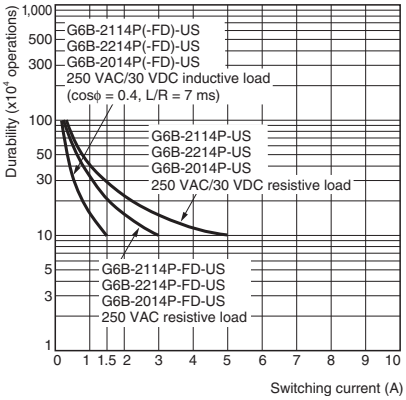



### ●Durability

**G6B-1114P-US**
**G6B-1174P-US**
**G6B-1174P-FD-US**



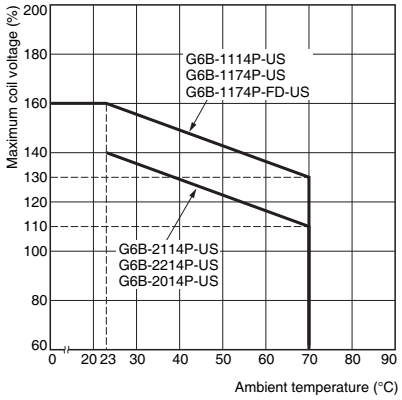

**G6B-2114P(-FD)-US**
**G6B-2214P(-FD)-US**
**G6B-2014P(-FD)-US**




### ●Ambient Temperature vs. Maximum Coil Voltage

**G6B-1114P-US**
**G6B-1174P-US**
**G6B-1174P-FD-US**

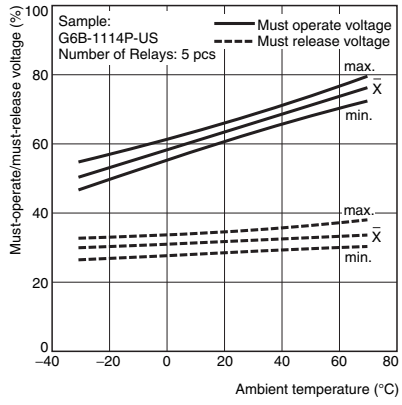
**G6B-2114P-US**
**G6B-2214P-US**
**G6B-2014P-US**




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

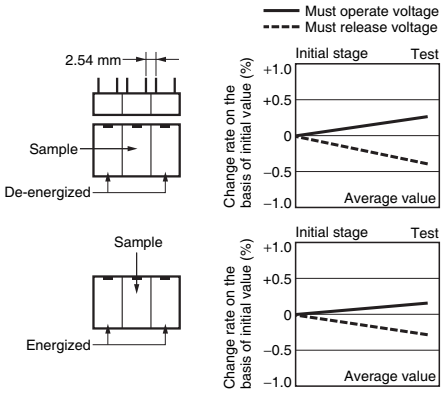
### ●Ambient Temperature vs. Must Operate and Must Release Voltage

**G6B-1114P-US**

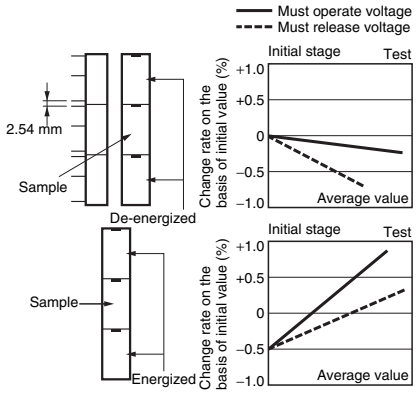



### ●Mutual Magnetic Interference

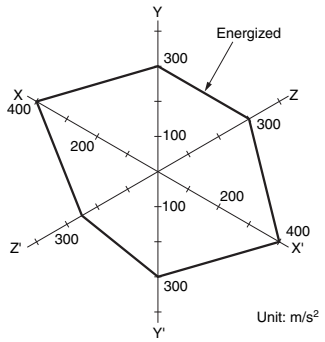
**G6B-1114P-US**



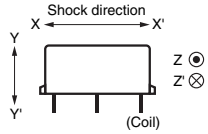

**G6B-1114P-US**

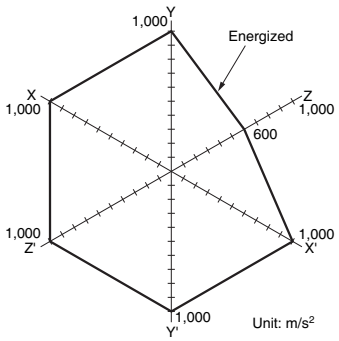


## ●Shock Malfunction

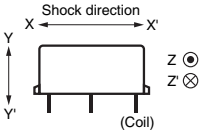


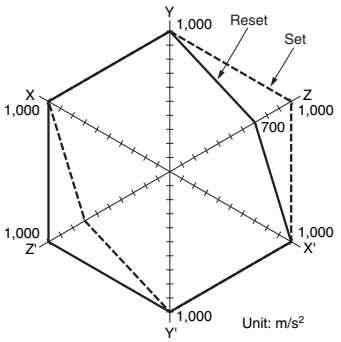

Sample: G6B-1114P-US
Number of Relays: 12 pcs
Test Conditions: Shock is applied in ±X, ±Y, and ±Z directions three times each with without energizing the Relays to check the number of malfunctions.
Requirement: None malfuction 100 m/s²



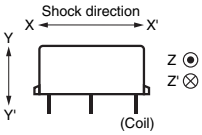




Sample: G6B-1174P-US
G6B-1174P-FD-US
Test Conditions: Shock is applied in ±X, ±Y, and ±Z directions three times each with without energizing the Relays to check the number of malfunctions.
Requirement: None malfuction 100 m/s²

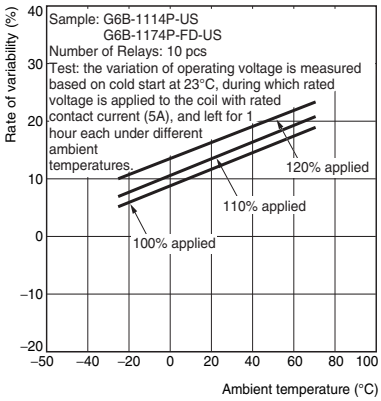


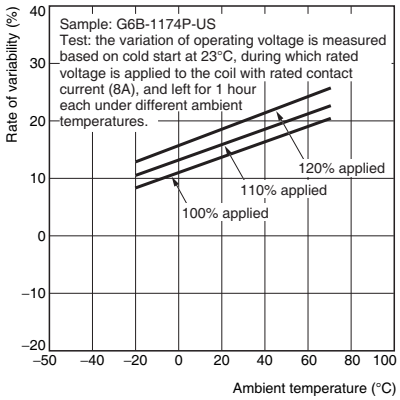



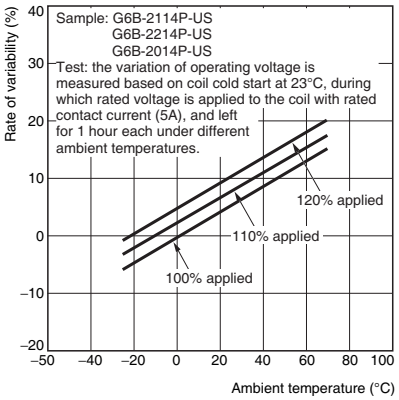

Sample: G6BK-1114P-US
Number of Relays: 12 pcs
Test Conditions: The value at which malfunction occurred was measured after applying shock to the test piece 3 times each in 6 directions along 3 axes.
Standard value: 300 m/s²




## ●Hot Start



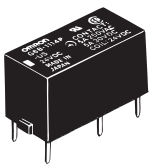



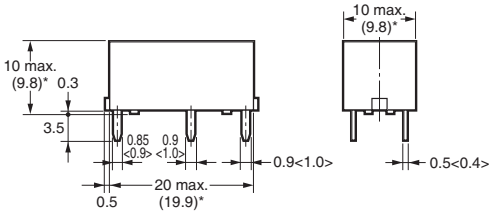

## ■Dimensions

(Unit: mm)

### 1-pole Single-side Stable Models (SPST-NO(1a))

**Straight PCB**
**G6B-1114P(-FD)(-1)-US**
**G6B-1184P-US**

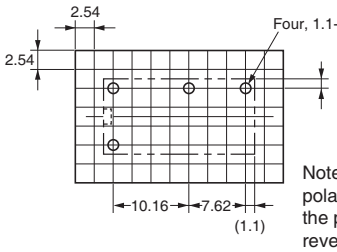




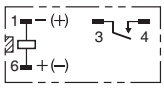

* Average value

Dimensions in pointed brackets < > are for the Relay mounted to Socket.

**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm




**Terminal Arrangement/ Internal Connections**
(BOTTOM VIEW)

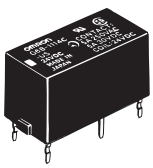


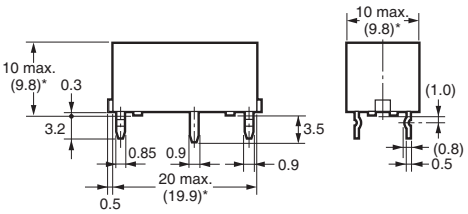

Note: Check carefully the coil polarity of the Relay. Polarity in the parenthesis is the models for reverse coil polarity.

Note: Orientation marks are indicated as follows: ⬚ ▨

### Self-clinching PCB

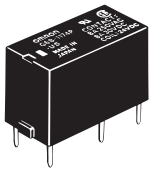
**G6B-1114C(-FD)-US**

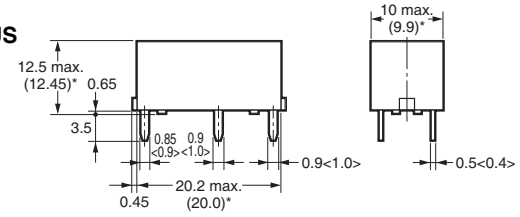





* Average value

### 1-pole Single-side Stable Models (SPST-NO(1a))
**Straight PCB**
**G6B-1174P(-FD)(-1)-US**

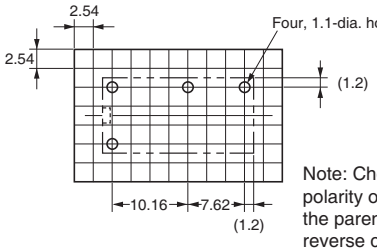




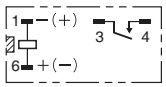

* Average value

Dimensions in pointed brackets < > are for the Relay mounted to Socket.

**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm



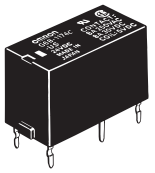

**Terminal Arrangement/ Internal Connections**
(BOTTOM VIEW)

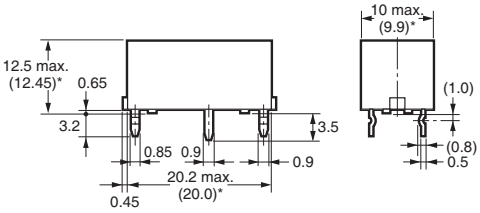



Note: Check carefully the coil polarity of the Relay. Polarity in the parenthesis is the models for reverse coil polarity.

Note: Orientation marks are indicated as follows:

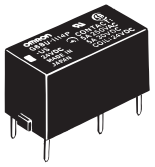
### Self-clinching PCB
**G6B-1174C(-FD)-US**

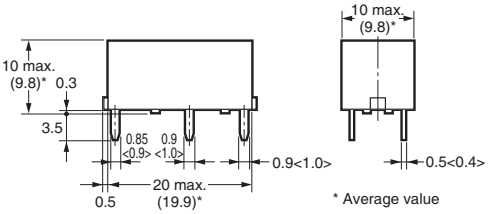





* Average value

### 1-pole Single-winding Latching Model (SPST-NO(1a))
**Straight PCB**
**G6BU-1114P(-1)-US**

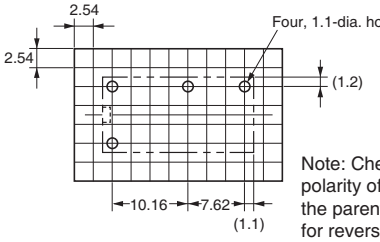




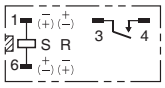

* Average value

Dimensions in pointed brackets < > are for the Relay mounted to Socket.

**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm



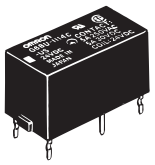

**Terminal Arrangement/ Internal Connections**
(BOTTOM VIEW)

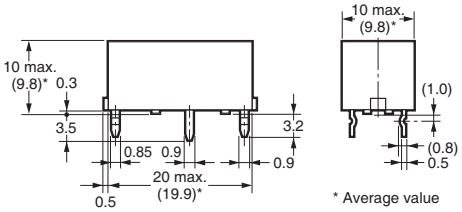



Note: Check carefully the coil polarity of the Relay. Polarity in the parenthesis is the models for reverse coil polarity.
S: Set coil
R: Reset coil

Note: Orientation marks are indicated as follows:

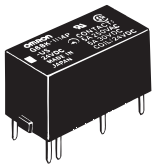
### Self-clinching PCB
**G6BU-1114C-US**

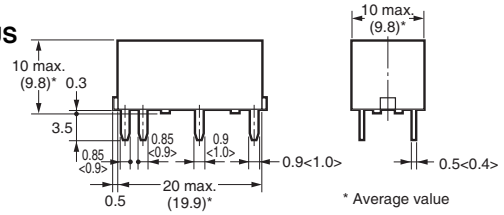





* Average value

### 1-pole Double-winding Latching Model (SPST-NO(1a))
**Straight PCB**
**G6BK-1114P(-FD)(-1)-US**

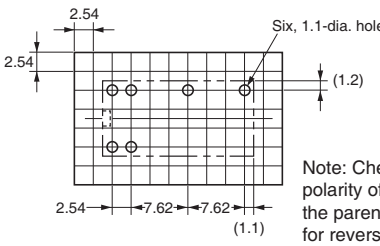




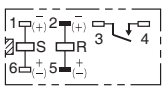

* Average value

Dimensions in pointed brackets < > are for the Relay mounted to Socket.

**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm



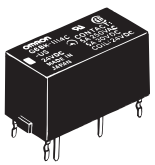

**Terminal Arrangement/ Internal Connections**
(BOTTOM VIEW)

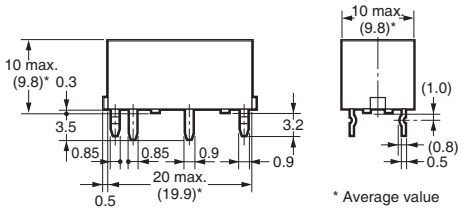



Note: Check carefully the coil polarity of the Relay. Polarity in the parenthesis is the models for reverse coil polarity.
S: Set coil
R: Reset coil

Note: Orientation marks are indicated as follows:

### Self-clinching PCB
**G6BK-1114C(-FD)-US**

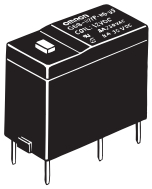


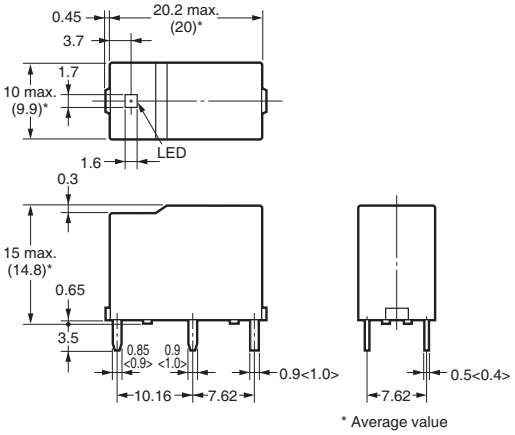



* Average value

### 1-pole Single-side stable Models (SPST-NO (1a)) (Built-in high capacity operation indicator & surge absorption diode)

**Straight PCB**
**G6B-1177P(-FD)-ND-US**

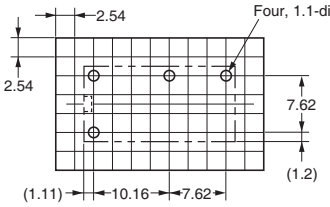




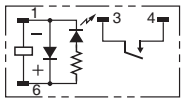

* Average value

Dimensions in pointed brackets < > are for the Relay mounted to Socket.

**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm



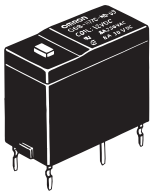

**Terminal Arrangement/ Internal Connections**
(BOTTOM VIEW)

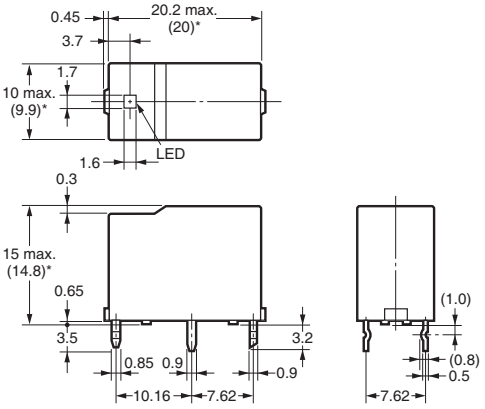



Note: Check carefully the coil polarity of the Relay.

Note: The G6B-1177P-ND-US model has a flux-resistant construction. Do not wash it down with water. Pay attention to the polarity of the coil since the LED and surge absorption diode are built-in.

**Self-clinching PCB**
**G6B-1177C(-FD)-ND-US**

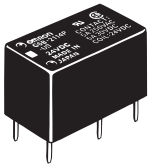


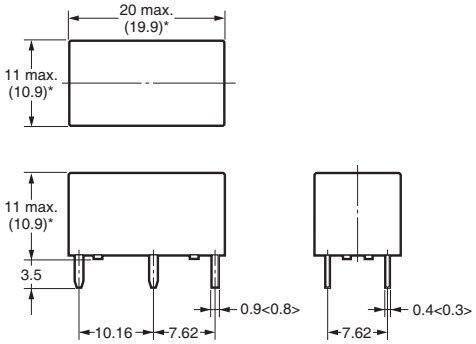



* Average value

### 2-poles Single-side stable Models (SPST-NO (1a) + SPST-NC (1b), DPST-NO (2a), DPST-NC(2b))

**Straight PCB**
**G6B-2114P(-FD)(-1)-US**
**G6B-2214P(-FD)(-1)-US**
**G6B-2014P(-FD)-US**

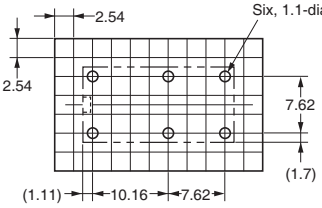





* Average value

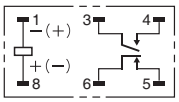
Dimensions in pointed brackets < > are for the Relay mounted to Socket.

**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm

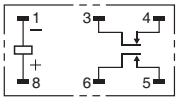



**Terminal Arrangement/ Internal Connections**
(BOTTOM VIEW)

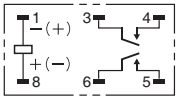
G6B-2114




G6B-2014

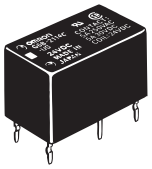


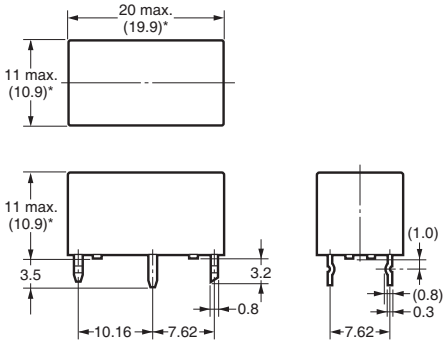

G6B-2214




Note: Check carefully the coil polarity of the Relay. Polarity in the parenthesis is the models for reverse coil polarity.

**Self-clinching PCB**
**G6B-2114C(-FD)-US**
**G6B-2214C(-FD)-US**
**G6B-2014C(-FD)-US**

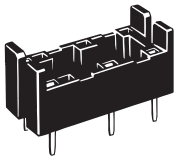


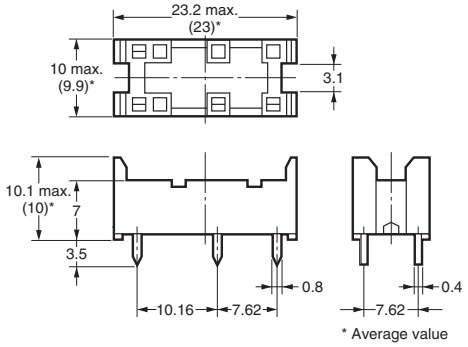



* Average value

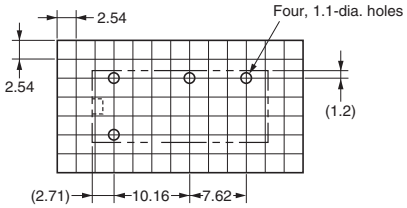
## ■Connecting Sockets Dimensions

### Socket for 1-pole Single-winding Latching Model and Single-side Stable Model
**P6B-04P**

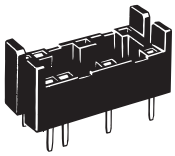


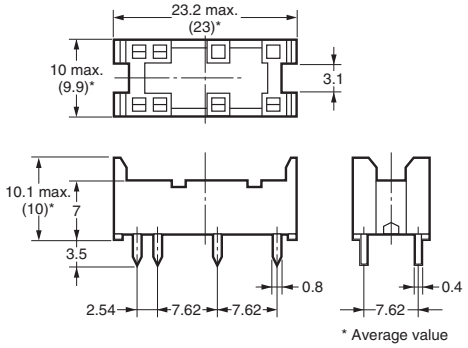



**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm

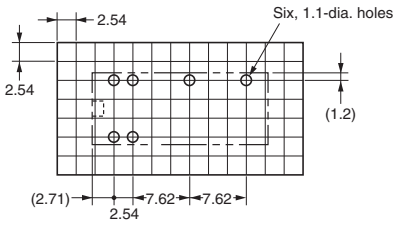



### Socket for 1-pole Double-winding Latching Model
**P6B-06P**

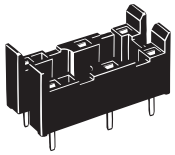


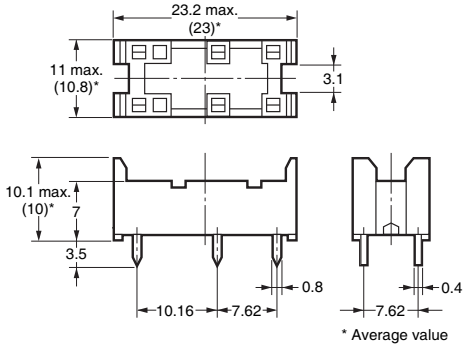



**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm

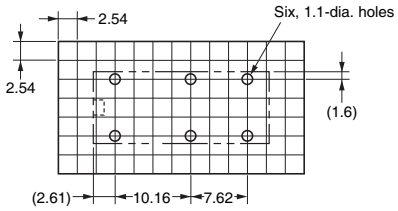



### Socket for Double-pole Single-side Stable
**P6B-26P**



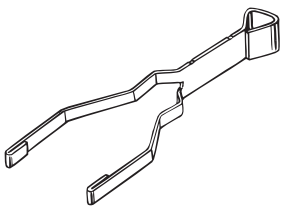



**PCB Mounting Holes**
(BOTTOM VIEW)
Tolerance: ±0.1 mm



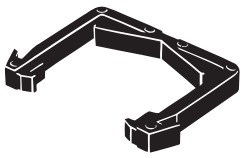

## ■Removal Tool

**P6B-Y1**



## ■Hold-down Clips

**P6B-C2**



## ■Related Products

The G6B-4 Terminal Relay series with 4-point output is also available.
For details, contact your OMRON sales representative.

## ■Approved Standards

- The approval rating values for overseas standards are different from the performance values determined individually. Confirm the values before use.

**UL Recognized:** (File No. E41643)

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|---|---|---|---|---|
| G6B-1114P(-FD)(-1)-US<br>G6B-1114C(-FD)-US | 1 | 3 to 24 VDC | 5 A, 250 VAC (General Use) 80°C | 6,000 |
| | | | 5 A, 30 VDC (Resistive) 80°C | |
| | | | 1/8HP, 250 VAC 80°C | 1,000 |
| | | | 1/6HP, 250 VAC 80°C | |
| G6B-1174P(-FD)(-1)-US<br>G6B-1174C(-FD)-US | 1 | 3 to 24 VDC | 8 A, 277 VAC (General Use) 80°C | 30,000 |
| | | | 8 A, 30 VDC (Resistive) 80°C | 6,000 |
| G6B-1184P-US | 1 | 3 to 24 VDC | 2 A, 250 VAC (General Use) 80°C | |
| | | | 2 A, 30 VDC (Resistive) 80°C | |
| G6B-2114P(-FD)(-1)-US<br>G6B-2214P(-FD)(-1)-US<br>G6B-2014P(-FD)-US<br>G6B-2114C(-FD)-US<br>G6B-2214C(-FD)-US<br>G6B-2014C(-FD)-US | 2 | 3 to 24 VDC | 5 A, 250 VAC (General Use) 80°C | |
| | | | 5 A, 30 VDC (Resistive) 80°C | |

**CSA Certified:** (File No. LR31928)

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|---|---|---|---|---|
| G6B-1114P(-FD)(-1)-US<br>G6B-1114C(-FD)-US | 1 | 3 to 24 VDC | 5 A, 250 VAC (General Use) 80°C | 6,000 |
| | | | 5 A, 30 VDC (Resistive) 80°C | |
| | | | 1/6HP, 250 VAC 80°C | 1,000 |
| | | | 360 W, 120 VAC tungsten 80°C | 6,000 |
| G6B-1174P(-FD)(-1)-US<br>G6B-1174C(-FD)-US | 1 | 3 to 24 VDC | 8 A, 277 VAC (General Use) 80°C | 30,000 |
| | | | 8 A, 30 VDC (Resistive) 80°C | 6,000 |
| G6B-2114P(-FD)(-1)-US<br>G6B-2214P(-FD)(-1)-US<br>G6B-2014P(-FD)-US<br>G6B-2114C(-FD)-US<br>G6B-2214C(-FD)-US<br>G6B-2014C(-FD)-US | 2 | 3 to 24 VDC | 5 A, 250 VAC (General Use) 80°C | |
| | | | 5 A, 30 VDC (Resistive) 80°C | |

**EN/IEC, TÜV Certified:** (Registration No. R50158246)

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|---|---|---|---|---|
| G6B-1114P(-1)-US<br>G6B-1114C-US | 1 | 5, 6, 12, 24 VDC | 5 A, 250 VAC (cosϕ = 1) at 70°C | 20,000 |
| | | | 2 A, 250 VAC(cosϕ = 0.4) at 70°C | |
| | | | 5 A, 30 VDC (L/R = 0 ms) at 70°C | |
| G6B-1174P(-1)-US<br>G6B-1174C-US | 1 | 5, 6, 12, 24 VDC | 8 A, 250 VAC (cosϕ = 1) at 70°C | |
| | | | 2 A, 250 VAC (cosϕ = 0.4) at 70°C | |
| | | | 8 A, 30 VDC (L/R = 0 ms) at 70°C | |
| G6B-2114P(-1)-US<br>G6B-2214P(-1)-US<br>G6B-2014P-US<br>G6B-2114C-US<br>G6B-2214C-US<br>G6B-2014C-US | 2 | 5, 6, 12, 24 VDC | 5 A, 250 VAC (cosϕ = 1) at 70°C | |
| | | | 1.5 A, 250 VAC (cosϕ = 0.4) at 70°C | |
| | | | 5 A, 30 VDC (L/R = 0 ms) at 70°C | |
| G6B-1114P-FD(-1)-US<br>G6B-1114C-FD-US | 1 | 5, 6, 12, 24 VDC | 3 A, 250 VAC (cosϕ = 1) at 70°C | 10,000 |
| | | | 3 A, 30 VDC (L/R = 0 ms) at 70°C | |
| G6B-1174P-FD(-1)-US<br>G6B-1174C-FD-US | 1 | 5, 6, 12, 24 VDC | 5 A, 250 VAC (cosϕ = 1) at 70°C | |
| | | | 2 A, 250 VAC (cosϕ = 0.4) at 70°C | |
| | | | 5 A, 30 VDC (L/R = 0 ms) at 70°C | |
| G6B-2114P-FD(-1)-US<br>G6B-2214P-FD(-1)-US<br>G6B-2014P-FD-US<br>G6B-2114C-FD-US<br>G6B-2214C-FD-US<br>G6B-2014C-FD-US | 2 | 5, 6, 12, 24 VDC | 1.5 A, 250 VAC (cosϕ = 0.4) at 70°C | |
| | | | 3 A, 30 VDC (L/R = 0 ms) at 70°C | |

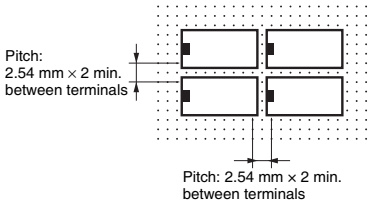
## ■Precautions

**●Please refer to "PCB Relays Common Precautions" for correct use.**

Correct Use

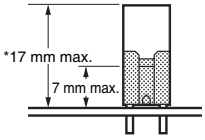
### ●Mounting

- When installing more than two Relays side by side on a PCB, keep the gaps as shown below.
  It may cause a malfunction if heat is not dissipated smoothly from the Relay.




- No specified mounting direction.

### ●Mounting Height of Sockets and Precautions

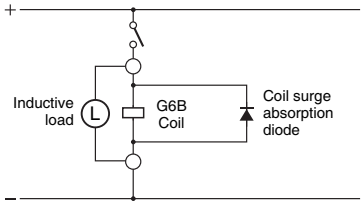



* 19.5 mm max. for G6B-1174P-FD-US, G6B-1174P-US models and 22 mm max. for G6B-1177P-FD-ND-US, G6B-1177P-ND-US models.

- Hold-down clips (for mounting and removal) are also available.(For P6B-C2 model) However, it is not suitable for G6B-1174P and G6B-1177P models.
- Removal tool is also available. (For P6B-Y1 model) However, it is not suitable for G6B-1177P model.

### ●Inhibit Circuit of the G6B-1177P(-FD)-ND-US Model

- Do not use under conditions in which a surge is included in the power supply, such as when an inductive load is connected in parallel to the coil. Doing so will cause damage to the installed (or built-in) coil surge absorbing diode.

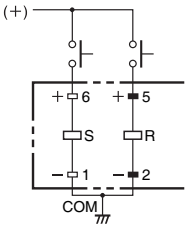



### ●Using SPDT contact of the SPST-NO+SPST-NC Relay

- Do not construct a circuit so that overcurrent and burning occur if the NO, NC and SPDT contacts are short-circuited with the SPST-NO+SPST-NC Relay.Arcing may generate short-circuiting between contacts if there is short-circuiting because of conversion to the MBB contact caused by asynchronous operation of the NO and NC contacts, the interval between the NO and NC contacts is small, or a large current is left open.

### ●Other precautions

- The P6B model has a flux-resistant construction. Do not wash it down with water.
- Perform wiring of No.1 and No. 2 of the X terminal as COM for double-winding latching as shown below. The operation stability improves by doing this.




- Check carefully the coil polarity (+ and -) of the Relay G6B-1177P(-FD)-ND-US. Do not reverse the polarity when connecting. Otherwise the built-in coil surge absorption diode may be damaged.
- This Relay is a Power Relay which is suitable for power load switching. Do not use the G6B for signal purposes such as micro load switching under 10 mA.

• Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
• Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

**Note: Do not use this document to operate the Unit.**

**OMRON Corporation**
**Electronic and Mechanical Components Company** **Contact: www.omron.com/ecb**
**Cat. No. K021-E1-16**
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