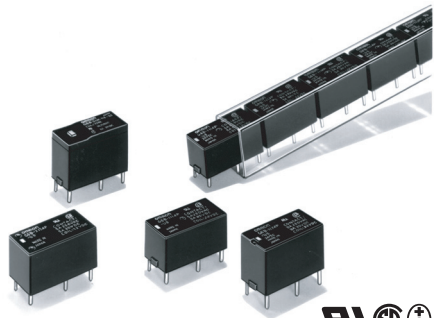


Sub-miniature Relay that Switches up to 5 A

- ROHS compliant.
- Sub-miniature: 20 x 10 x 10 mm (L x W x H).
- Low power consumption: 200 mW.
- Unique moving loop armature reduces relay size, magnetic interference, and contact bounce time.
- Single- and double-winding latching types also available.



Ordering Information

Classification	Contact form	Straight PCB	Self-clinching PCB
Single-side stable	SPST-NO	G6B-1114P-US	G6B-1114C-US
	SPST-NO+SPST-NC	G6B-2114P-US	G6B-2114C-US
	DPST-NO	G6B-2214P-US	G6B-2214C-US
	DPST-NC	G6B-2014P-US	G6B-2014C-US
Single-winding latching	SPST-NO	G6BU-1114P-US	G6BU-1114C-US
Double-winding latching	SPST-NO	G6BK-1114P-US	G6BK-1114C-US
High-capacity single-side stable	SPST-NO	G6B-1174P-US	G6B-1174C-US

Note: When ordering, add the rated coil voltage to the model number.
Example: G6B-1114P-US 12 VDC

Rated coil voltage

Model Number Legend

G6B - VDC
1 2 3 4 5 6 7

1. Relay Function

None: Single-side stable
U: Single-winding latching
K: Double-winding latching

2. Contact Form

21: SPST-NO + SPST-NC
22: DPST-NO
20: DPST-NC
11: SPST-NO

3. Contact Type

1: Standard
7: High-capacity
4. Enclosure Ratings
4: Fully sealed

5. Terminals

P: Straight PCB
C: Self-clinching PCB

6. Approved Standards

US: UL/CSA certified

7. Rated Coil Voltage

5, 6, 12, 24 VDC

Accessories (Order Separately)

Back Connecting Sockets

Applicable relay	Back connecting socket*
G6B(U)-1114P-US	P6B-04P
G6BK-1114P-US	P6B-06P
G6B-2114P-US	P6B-26P
G6B-1174P-US	P6B-04P

*Not applicable to the self-clinching type.

Removal Tool	P6B-Y1
Hold-down Clips	P6B-C2

Specifications

■ Coil Ratings

Single-side Stable Type

Item		SPST-NO					SPST-NO + SPST-NC, DPST-NO, DPST-NC				
Rated voltage		3 VDC	5 VDC	6 VDC	12 VDC	24 VDC	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC
Rated current		67 mA	40 mA	33.3 mA	16.7 mA	8.3 mA	100 mA	60 mA	50 mA	25 v	12.5 mA
Coil resistance		45 Ω	125 Ω	180 Ω	720 Ω	2,880 Ω	30 Ω	83.3 Ω	120 Ω	480 Ω	1,920 Ω
Coil inductance	Armature OFF	0.20	0.28	0.31	1.2	4.9	–	–	–	–	–
(H) (ref. value)	Armature ON	0.18	0.26	0.28	1.1	4.1	–	–	–	–	–
Must operate voltage		70% max. of rated voltage					80% max. of rated voltage				
Must release voltage		10% min. of rated voltage									
Max. voltage		160% of rated voltage (at 23°C)					140% of rated voltage (at 23°C)				
Power consumption		Approx. 200 mW					Approx. 300 mW				

Single-winding Latching Type

Rated voltage	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC
Rated current	67 mA	40 mA	33.3 mA	16.7 mA	8.3 mA
Coil resistance	45 Ω	125 Ω	180 Ω	720 Ω	2,880 Ω
Coil inductance	Armature OFF	0.20	0.28	0.31	1.2
(H) (ref. value)	Armature ON	0.18	0.26	0.28	1.1
Must operate voltage	70% max. of rated voltage				
Must release voltage	70% min. of rated voltage				
Max. voltage	160% of rated voltage (at 23°C)				
Power consumption	Approx. 200 mW				

Double-winding Latching Type

Rated voltage	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC
Set coil	Rated current	93.2 mA	56 mA	46.8 mA	23.3 mA
	Coil resistance	32.2 Ω	89.2 Ω	128.5 Ω	515 Ω
	Coil inductance	Armature OFF	0.11	0.15	0.18
	(H) (ref. value)	Armature ON	0.11	0.15	0.18
Reset coil	Rated current	93.2 mA	56 mA	46.8 mA	23.3 mA
	Coil resistance	32.2 Ω	89.2 Ω	128.5 Ω	515 Ω
	Coil inductance	Armature OFF	0.11	0.15	0.18
	(H) (ref. value)	Armature ON	0.11	0.15	0.18
Must set voltage	70% max. of rated voltage				
Must reset voltage	70% min. of rated voltage				
Max. voltage	130% of rated voltage (at 23°C)				
Power consumption	Set coil: Approx. 280 mW Reset coil: Approx. 280 mW				

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

■ Contact Ratings

Item	SPST-NO		SPST-NO + SPST-NC, DPST-NO, DPST-NC	
	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)
Load				
Rated load	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 2 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	1.5 A at 250 VAC; 1.5 A at 30 VDC
Contact material	AgNi (FD version = AgSnIn)			
Rated carry current	5 A			
Max. switching voltage	380 VAC, 125 VDC			
Max. switching current	5 A			
Max. switching power	1,250 VA, 150 W	500 VA, 60 W	1,250 VA, 150 W	375 VA, 80 W
Failure rate (reference value)	10 mA at 5 VDC			

Item	SPST-NO (High-capacity)	
Load	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)
Rated load	8 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 2 A at 30 VDC
Contact material	AgNi (FD version = AgSnIn)	
Rated carry current	8 A	
Max. switching voltage	380 VAC, 125 VDC	
Max. switching current	8 A	
Max. switching power	2,000 VA, 150 W	
Failure rate (reference value)	10 mA at 5 VDC	

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

■ Characteristics

Item		SPST-NO	SPST-NO + SPST-NC, DPST-NO, DPST-NC
Contact resistance		30 mΩ max.	
Operate (set) time		10 ms max. (mean value: 1-pole approx. 3 ms, 2-pole approx. 4 ms)	
Release (reset) time		Single-side stable types: 10 ms max. (mean value: 1-pole approx. 1 ms, 2-pole approx. 2 ms) Latching types: 10 ms max. (mean value: approx. 3 ms)	
Min. set/reset signal width		Latching type: 15 ms min. (at 23°C)	
Max. operating frequency		Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)	
Insulation resistance		1,000 MΩ min. (at 500 VDC, at 250 VDC between set coil and reset coil)	
Dielectric strength		3,000 VAC (Latching types: 2,000 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 250 VAC, 50/60 Hz for 1 min between set and reset coils 2,000 VAC, 50/60 Hz for 1 min between contacts of different polarity	
Impulse withstand voltage		TBA	
Insulation Distance	Creepage (Typ)	5.0 mm	3.2 mm
	Clearance (Typ)	4.1 mm	2.7 mm
Tracking Resistance CTI)		100 V	
Vibration resistance		Destruction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude)	
Shock resistance		Destruction: 1,000 m/s ² Malfunction: Single-side stable: 100 m/s ² ; Latching: 300 m/s ²	
Endurance		Mechanical: 50,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operation min. (at 1,800 operations/hr)	
Ambient temperature		Operating: -25°C to 70°C (with no icing)	
Ambient humidity		Operating: 5% to 85%	
Weight		Double-winding latching: Approx. 3.7 g High-capacity: Approx. 4.6 g Double pole: Approx. 4.5 g Other: Approx. 3.5 g	

Note: The data shown above are initial values.

■ Approved Standards

UL508 (File No. E41643)/CSA C22.2 No.14 (File No. LR31928)

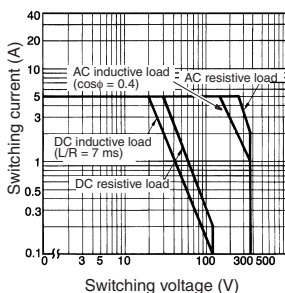
EN 61810-1 (VDE Reg No. 5361)/Connector EN 61984 (VDE Reg No. 125603)

Model	Contact form	Coil ratings	Contact ratings
G6B-1114P-US G6B-1114C-US G6BU-1114P-US G6BU-1114C-US G6BK-1114P-US G6BK-1114C-US	SPST-NO	3 to 24 VDC	5 A, 250 VAC (general use) 5 A, 30 VDC (resistive load)
G6B-1174P-US G6B-1174C-US			8 A, 250 VAC (general use) 8 A, 30 VDC (resistive load)
G6B-2114P-US G6B-2114C-US G6B-2214P-US G6B-2214C-US G6B-2014P-US G6B-2014C-US	SPST-NO + SPST-NC DPST-NO DPST-NC		5 A, 250 VAC (general use) 5 A, 30 VDC (resistive load)

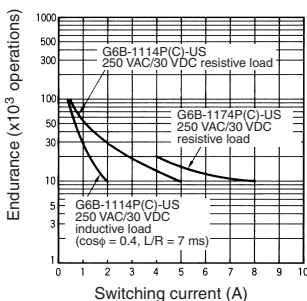
Engineering Data

G6B-1114P-US

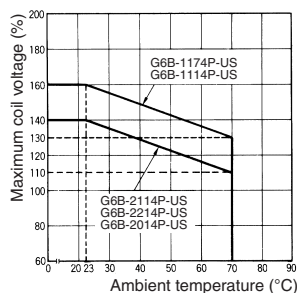
Maximum Switching Power



Endurance



Ambient Temperature vs. Maximum Coil Voltage

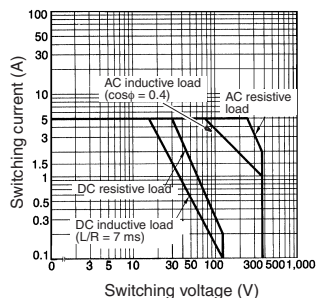


Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

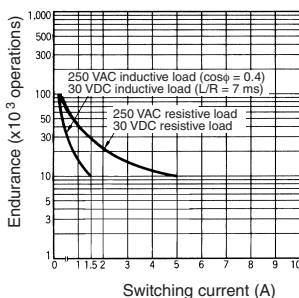
G6B-2114P-US, G6B-2214P-US

G6B-2014P-US

Maximum Switching Power



Endurance

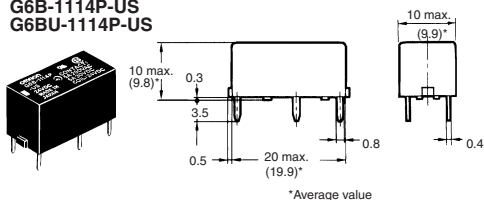


Dimensions

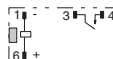
Note: 1. All units are in millimeters unless otherwise indicated.

2. Orientation marks are indicated as follows:  

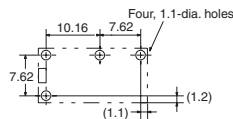
G6B-1114P-US G6BU-1114P-US



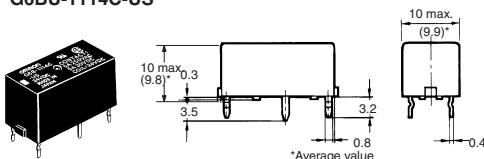
Terminal Arrangement/Internal Connections (Bottom View) G6B-1114P, -1114C



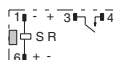
Mounting Holes (Bottom View) G6B-1114P, -1114C G6BU-1114P, -1114C



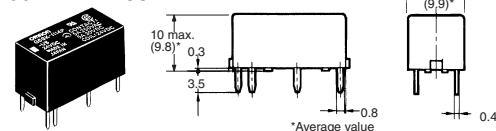
G6B-1114C-US G6BU-1114C-US



G6BU-1114P, -1114C



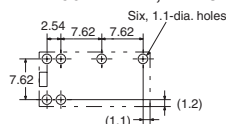
G6BK-1114P-US



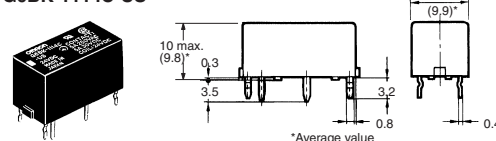
Terminal Arrangement/Internal Connections (Bottom View) G6BK-1114P, -1114C



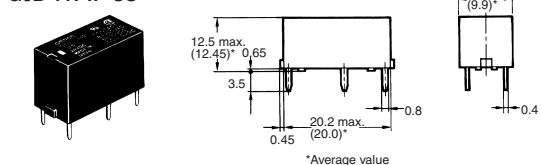
Mounting Holes (Bottom View) G6BK-1114P, -1114C



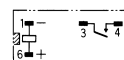
G6BK-1114C-US



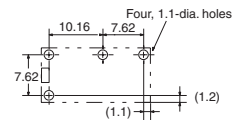
G6B-1174P-US



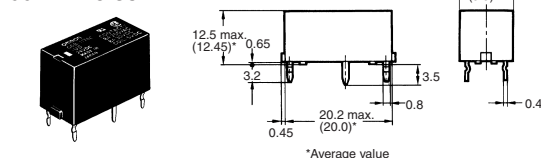
Terminal Arrangement/Internal Connections (Bottom View) G6B-1174P, -1174C



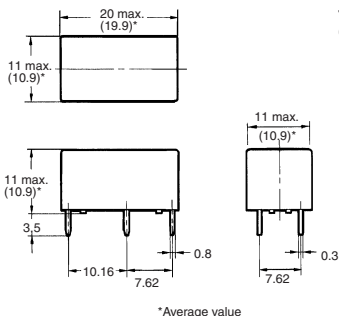
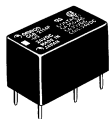
Mounting Holes (Bottom View)



G6B-1174C-US

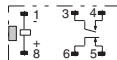


G6B-2114P-US
G6B-2214P-US
G6B-2014P-US

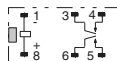


Terminal Arrangement/Internal Connections (Bottom View)

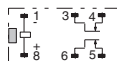
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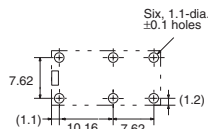
G6B-2214P-US



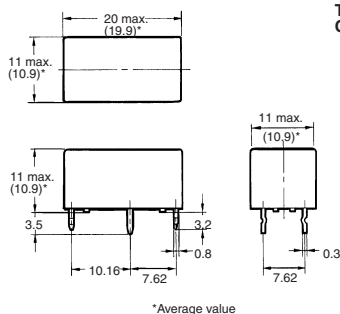
G6B-2014P-US



Mounting Holes (Bottom View)
 Tolerance: ± 0.1

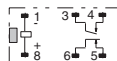


G6B-2114C-US
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G6B-2014C-US

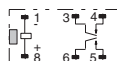


Terminal Arrangement/Internal Connections (Bottom View)

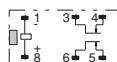
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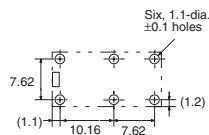
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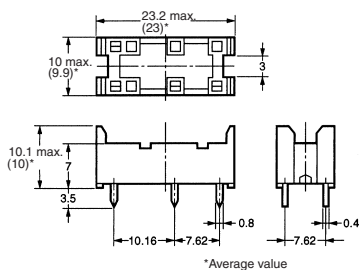
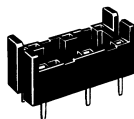
G6B-2014C-US



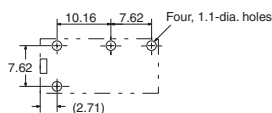
Mounting Holes (Bottom View)
 Tolerance: ± 0.1



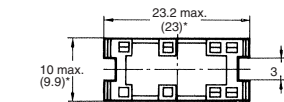
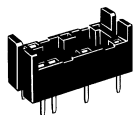
Back Connecting Socket
P6B-04P



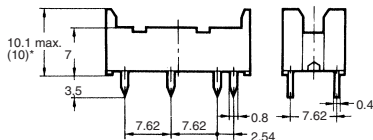
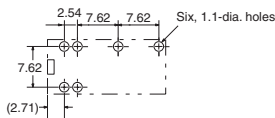
Mounting Holes (Bottom View)



P6B-06P

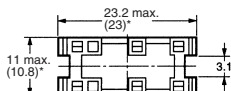
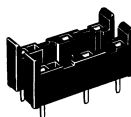


Mounting Holes (Bottom View)

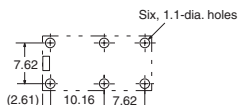


*Average value

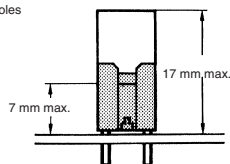
P6B-26P



Mounting Holes (Bottom View)

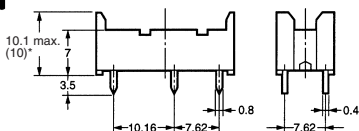


Mounting Height of Relay with Connecting Socket



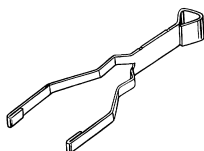
Note: Rated current of socket is 5 A max.

Note: Height of G6B-1174P-US is 19.5 mm max.

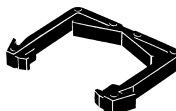


*Average value

Removal Tool P6B-Y1



Hold-down Clips P6B-C2



Note: P6B-C2 Hold-down Clips cannot be used for G6B-1174P-US.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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