Power PCB Relay

Subminiature Relay that Switches up to 5 A

- Subminiature: 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.
- Fully sealed construction
- Single and Dual coil latching types also available.
- · High Capacity versions available
- RoHS Compliant



Ordering Information

Classification	Contact form	Straight Through-hole PCB	Self-clinching Through-hole PCB
Non-latching	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 coil latching	SPST-NO	G6BU-1114P-US	G6BU-1114C-US
Dual coil latching	SPST-NO	G6BK-1114P-US	G6BK-1114C-US
High-capacity, Non-latching	SPST-NO	G6B-1174P-US	G6B-1174C-US

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

Example: G6B-1114P-US DC12

Rated coil voltage

Model Number Legend

G6B ___-1 2 3 7

1. Relay Function

None: Non-latching Single coil latching Dual coil latching

2. Contact Form

SPST-NO + SPST-NC

DPST-NO DPST-NC SPST-NO

3. Contact Type

1: Standard 7: High-capacity

4. Enclosure Ratings

4: Fully sealed

5. Terminals

P: Straight Through-hole PCB C: Self-clinching Through-hole PCB

6. Approved Standards

US: UL/CSA certified

7. Mounting Method

None: Mount directly to PCB P6B: Mount to Socket

8. Rated Coil Voltage

5, 6, 12, or 24 VDC

■ Accessories (Order Separately)

Back Connecting Sockets

Applicable Relay	Back Connecting Socket (See note 1.)
G6B(U)-1114P-US-P6B	P6B-04P
G6BK-1114P-US-P6B	P6B-06P
G6B-2□□4P-US-P6B	P6B-26P
G6B-1174P-US-P6B	P6B-04P

Note: 1. Not applicable to the self-clinching type.

2. Use the G6B-DDDP-US-P6B if mounting relays in a P6B Socket.

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

Specifications

■ Contact Ratings

Item	5	SPST-NO	SPST-NO + SPST-NC, DPST-NO, DPST-NC		
Load	Resistive load (cos\phi = 1)	Inductive load (cos\phi = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cos\phi = 0.4; L/R = 7 ms)	
Rated load	5 A at 250 VAC; 5A at 30 VDC	2 A at 250 VAC; 2 A at 30 VDC	5 A at 250 VAC; 5A at 30 VDC	1.5 A at 250 VAC; 1.5 A at 30 VDC	
Contact material	Ag Alloy (Cd free)				
Rated carry current	5 A				
Max. switching voltage	380 VAC, 125 VDC				
Max. switching current	5 A				
Max. switching capacity	1,250 VA, 150 W	500 VA, 60 W	1,250 VA, 150 W	375 VA, 80 W	
Min. permissible load (reference value - see note)	10 mA at 5 VDC			·	

Item	SPST-NO (High-capacity)					
Load	Resistive load (cosφ = 1)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)				
Rated load	8 A at 250 VAC; 8 A at 30 VDC	2 A at 250 VAC; 2 A at 30 VDC				
Contact material	Ag Alloy (Cd free)					
Rated carry current	8 A					
Max. switching voltage	380 VAC, 125 VDC					
Max. switching current	8 A					
Max. switching capacity	2,000 VA, 150 W					
Min. permissible load (reference value - see note)	10 mA at 5 VDC					

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

■ Coil Ratings

Non-latching, Single Pole

Rated voltage	Rated current	Coil resistance		luctance alue)(H)	Pick-up voltage	Dropout voltage	Max. voltage	Power
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	% of rated voltage		consumption (mW)	
5	40	125	0.28	0.26	70% max.	10% min.	160% max. @	Approx. 200
6	33.30	180	0.31	0.28			23°C	
12	16.70	720	1.2	1.1				
24	8.30	2,880	4.9	4.1				

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.

Non-latching, Double Pole

Rated	Rated	Coil	Pick-up voltage	Dropout voltage	Max. voltage	Power
voltage (VDC)	current (mA)	resistance (Ω)		% of rated voltage		consumption (mW)
5	60	83.30	80% max.	10% min.	140% max.@ 23°C	Approx. 300
6	50	120]			
12	25	480]			
24	12.50	1,920				

Single Coil Latching

Rated voltage	Rated current	Coil resistance	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption
(VDC)	(mA)	(Ω)	Armature OFF	Armature ON	%	of rated voltag	е	(mW)
5	40	125	0.28	0.26	70% max.	70% max.	160% max.	Approx. 200
6	33.30	180	0.31	0.28			at 23°C	
12	16.70	720	1.2	1.10				
24	8.30	2,880	4.9	4.10				

Dual Coil Latching

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
(VDC)	(IIIA)	(52)	Armature OFF	Armature ON	%	of rated voltage	ge	(11144)
5	56	89.20	0.15	0.15	70% max.	70% max.	130% max.	Approx. 280
6	46.80	128.50	0.18	0.18			at 23°C	
12	23.30	515	0.52	0.52				
24	11.70	2,060	1.20	1.20				

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

■ Characteristics

Contact resistance		30 m Ω max.				
Operate (set) time		10 ms max. (mean value: 1-	pole approx. 3 ms, 2-pole approx. 4 ms)			
Release (reset) time	Non-latching	10 ms max. (mean value: 1-	pole approx. 1 ms, 2-pole approx. 2 ms)			
	Latching	10 ms max. (mean value: ap	pprox. 3 ms)			
Min. set/reset signal width		Latching type: 15 ms min. (a	at 23°C)			
Max. operating	Mechanical	18,000 operations/hr				
frequency	Electrical	1,800 operations/hr (under r	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				
Vibration resistance	Mechanical durability	10 to 55 Hz, 1.5-mm double amplitude				
	Malfunction durability	10 to 55 Hz, 1.5-mm double amplitude				
Shock resistance	Mechanical durability	1,000 m/s ² (Approx 100G)				
	Malfunction durability	Single-side stable: 100 m/s ²	(Approx 10G); Latching: 300 m/s² (Approx 30G)			
Service Life	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.

^{2.} Operating characteristics are measured at a coil temperature of 23°C.

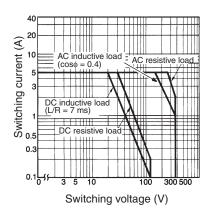
■ Approved Standards

UL Recognized (File No. E41643) / CSA Certified (File No. LR31928)

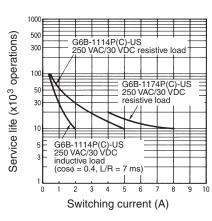
Model	Contact form	Coil rating	Contact rating
G6B-1114P-US G6B-1114C-US G6BU-1114P-US G6BU-1114C-US G6BK-1114C-US G6BK-1114C-US	SPST-NO	3 to 24 VDC	5 A at 250 VAC (General Use) 80°C 5 A at 30 VDC (Resistive) 80°C
G6B-1174P-US G6B-1174C-US			8 A at 250 VAC (General Use) 80°C 8 A at 30 VDC (Resistive) 80°C
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 at 250 VAC (general use) 40°C 5 A at 30 VDC (resistive load) 40°C

Engineering Data

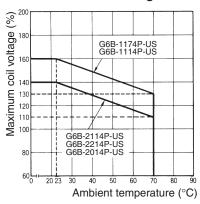
G6B-1114P-US Maximum Switching Capacity



Electrical Service Life

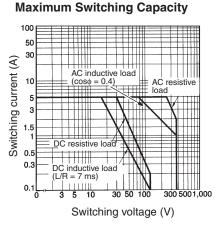


Ambient Temperature vs. Maximum Coil Voltage

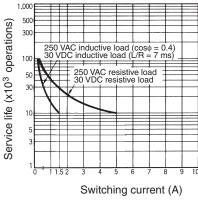


Note: The maximum coil voltage refers to the maxi-mum value in a varying range of operating power voltage, not a continuous voltage.

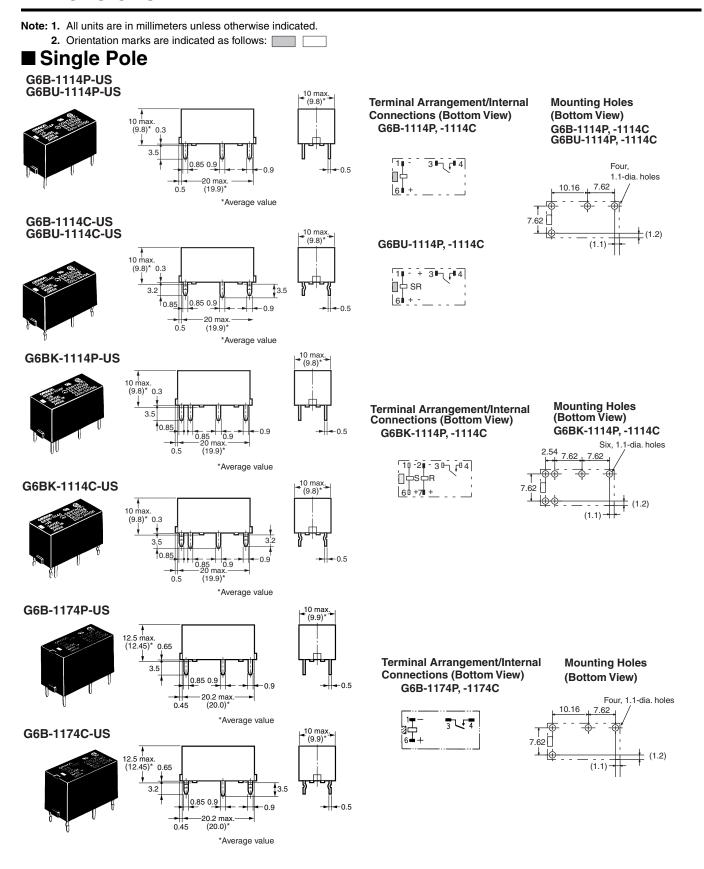
G6B-2114P-US, G6B-2214P-US, G6B-2014P-US



Electrical Service Life



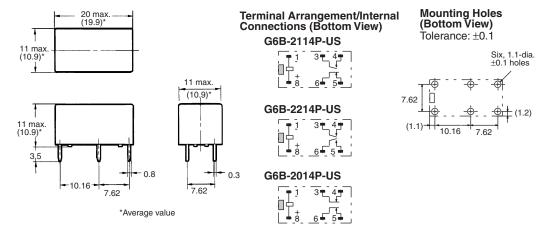
Dimensions



■ Double Pole

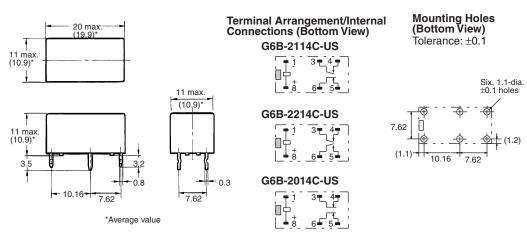
G6B-2114P-US G6B-2214P-US G6B-2014P-US





G6B-2114C-US G6B-2214C-US G6B-2014C-US

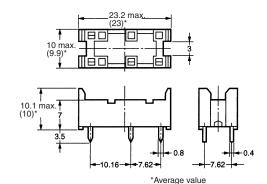




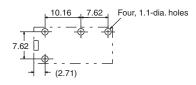
■ Accessories

Back Connecting Socket P6B-04P



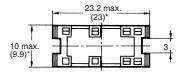


Mounting Holes (Bottom View)

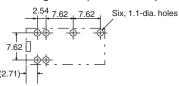


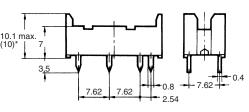
P6B-06P





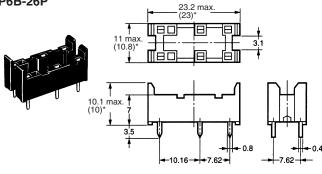
Mounting Holes (Bottom View)





*Average value



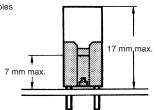


Mounting Holes (Bottom View)

Six, 1.1-dia. holes 7.62 (2.61)

Rated current of socket is 5 A max. Note:

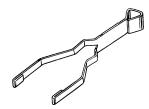
Mounting Height of Relay with Connecting Socket



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

*Average value

Removal Tool P6B-Y1

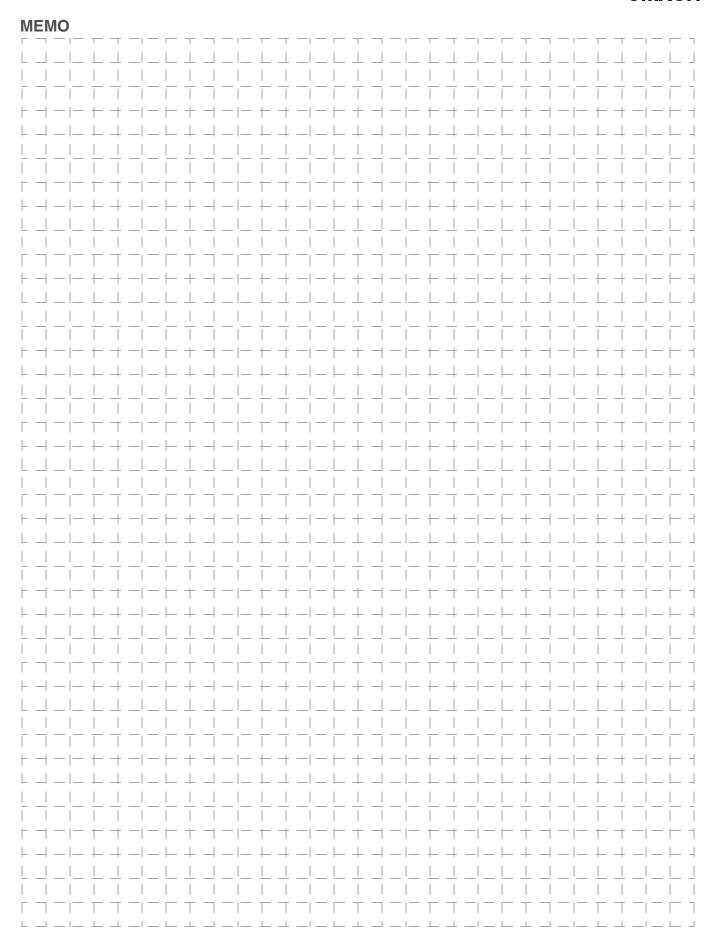


Hold-down Clips P6B-C2



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





Omron Electronic Components, LLC

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 <u>Errors and Omissions</u>. The information in this publication has been carefully
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 RoHS Compliance. Where indicated, our products currently comply, to the best of our knowledge as of the date of this publication, with the requirements of the European Union's Directive on the Restriction of certain Hazardous Substances ("RoHS"), although the requirements of RoHS do not take effect until July 2006. These requirements may be subject to change. Please consult until July 2006. These requirements may be subject to change. Please consult our website for current information.

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Specifications subject to change without notice

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

OMRON OMRON ELECTRONIC COMPONENTS LLC

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Cat. No. X301-E-1

06/09

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