



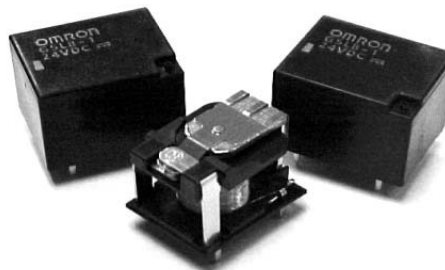
THE DATASHEET OF
LB1412



PCB Relay G5LB

Subminiature, Single-pole 10A Power Relay

- L 19.6 x W 15.6 x H 15.2 (mm).
- Low profile case, utilizes less PCB mounting area than the G5LE.
- Standard 360 mW – Lower Coil power consumption.
- Standard Class B insulation, (Class F available).
- Standard CTI 175, (CTI 250 available).
- Withstands impulse of up to 4,500 V.
- Environmentally friendly product – Cd, Pb and Chromium free.
- RoHS Compliant.



Ordering Information

Sealing	Contact Form	Contact Material
Unsealed (vent hole)	SPDT	AgSnO ₂
	SPST-NO	G5LB-1
Plastic-sealed	SPDT	G5LB-1A
	SPST-NO	G5LB-1A4

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

Examples: G5LB-1 DC12

—————Rated Coil Voltage

Model Number Legend

G5LB- - - - - DC

1 2 3 4 5 6 7 8

1. Number of Poles

1: 1 pole

2. Contact Form/Contact Construction

None: SPDT
A: SPST-NO

3. Sealing/Protective Construction

None: Unsealed (vent hole)
4: Sealed

4. Contact Type

None: Standard (Silver Tin Oxide)

5. Coil Power Consumption

None: 360mW
40: 400mW
60: 600mW (UL and CSA only)

6. Tracking Index and Insulation

None: CTI >175 – Class B Insulation (color: black)
25: CTI >250 – Class F Insulation (color: white)

7. Optional Suffix(es)

None: Standards
May include additional numbers(s) and / or letter(s) for sales purposes

8. Rated Coil Value

■ Coil Ratings

360-mW Type

Rated voltage	3 VDC	5 VDC	6 VDC	9 VDC	12 VDC	24 VDC	36 VDC	48 VDC
Rated current	123.3 mA	72.0 mA	60.8 mA	40.8 mA	30.7 mA	15.2 mA	10.2 mA	7.6 mA
Coil resistance	24.3 Ω	69.4 Ω	98.7 Ω	220.4 Ω	390.6 Ω	1575.4 Ω	3533.7 Ω	6287.4 Ω
Must operate voltage	75% of rated voltage (max.)							
Must release voltage	10% of rated voltage (min.)							
Max. voltage	130% of rated voltage at 85°C, 170% of rated voltage at 23°C							
Power consumption	Approx. 360 mW							

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

400-mW Type

Rated voltage	3 VDC	5 VDC	6 VDC	9 VDC	12 VDC	24 VDC	36 VDC	48 VDC
Rated current	136.4 mA	80.0 mA	67.8 mA	45.7 mA	32.8 mA	17.0 mA	11.3 mA	8.5 mA
Coil resistance	22.0 Ω	62.5 Ω	88.5 Ω	196.9 Ω	366.0 Ω	1,407.7 Ω	3,196.8 Ω	5,638.0 Ω
Must operate voltage	75% of rated voltage (max.)							
Must release voltage	10% of rated voltage (min.)							
Max. voltage	130% of rated voltage at 85°C, 170% of rated voltage at 23°C							
Power consumption	Approx. 400 mW							

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

600-mW Type

Rated voltage	3 VDC	5 VDC	6 VDC	9 VDC	12 VDC	24 VDC	36 VDC	48 VDC
Rated current	200.2 mA	120.0 mA	100.7 mA	66.8 mA	50.4 mA	25.3 mA	16.6 mA	12.6 mA
Coil resistance	15.0 Ω	41.7 Ω	59.6 Ω	134.8 Ω	237.9 Ω	947.6 Ω	2,164.8 Ω	3,800.0 Ω
Must operate voltage	75% of rated voltage (max.)							
Must release voltage	10% of rated voltage (min.)							
Max. voltage	130% of rated voltage at 85°C, 170% of rated voltage at 23°C							
Power consumption	Approx. 600 mW							

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

■ Contact Ratings

Load	Resistive load (cos ϕ = 1)
Rated load	10 A at 120 VAC; 8 A at 30 VDC & 10A at 250 VDC
Rated carry current	10 A
Max. switching voltage	250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied)
Max. switching current	AC: 10A; DC: 8A
Max. switching capacity	1,200 VA, 240 W & 2,500 VA
Min. permissible load	100 mA at 5 VDC

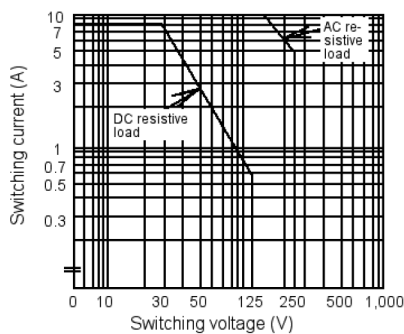
■ Characteristics

Contact resistance	100 mΩ max.
Operate time	10 ms max.
Release time	5 ms max.
Max. switching frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	750 VAC, 50/60 Hz for 1 min. between contacts of same polarity 2,000 VAC, 50/60 Hz for 1 min. between coil and contacts
Impulse withstand voltage	4,500 V between coil and contacts, 1.2 x 5 μsec
Vibration resistance	Destruction: 10 to 55 Hz, 1.5 mm double amplitude Malfunction: 10 to 55 Hz, 1.5 mm double amplitude
Shock resistance	Destruction: 1,000 m/s ² (approx. 100 G) Malfunction: 100 m/s ² (approx. 10 G)
Life expectancy	Mechanical: 10,000,000 operations min. (at 18,000 operations/hr) Electrical: *100,000 operations min. (at 1,800 operations/hr, 10A 120 VAC)
Ambient temperature	Operating: -40°C to 85°C
Ambient humidity	Operating: 35% to 85°C
Weight	Approx. 10 g

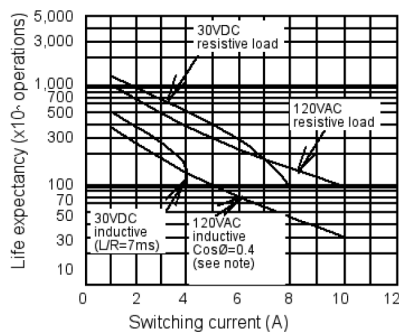
*G5LB-1

Engineering Data

Max. Switching Capacity G5LB-1

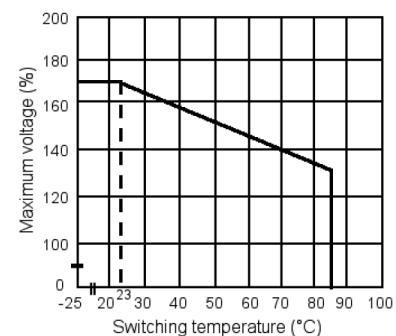


Life Expectancy G5LB-1



Note: Curve 120VAC inductive Cosφ=0.4 is same for 250VAC resistive load.



Ambient Temp. Vs Max. Voltage



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

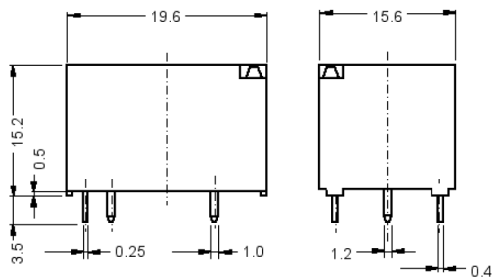
Dimensions

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

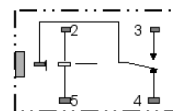
2. Orientation marks are indicated as follow:  

SPDT Types

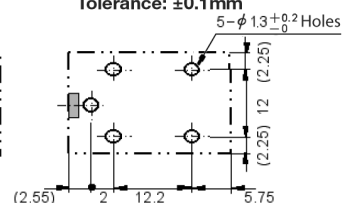
G5LB-1



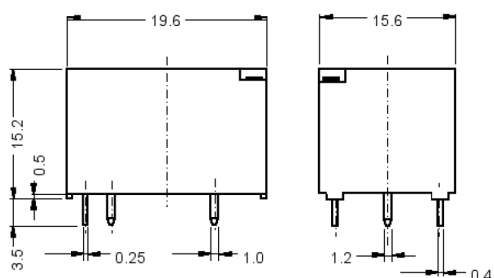
Terminal Arrangement/
Internal Connections
(Bottom View)



Mounting Holes
(Bottom View)
Tolerance: $\pm 0.1\text{mm}$

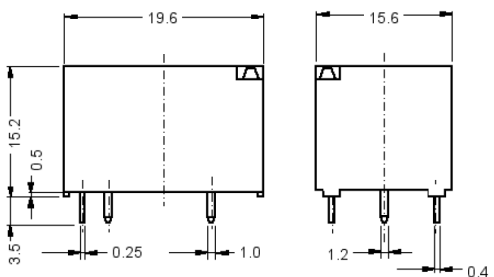


G5LB-14

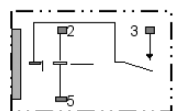


SPST Types

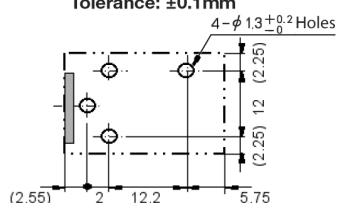
G5LB-1A



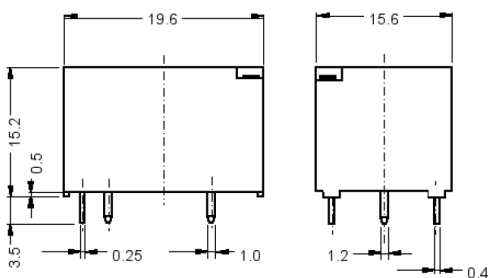
Terminal Arrangement/
Internal Connections
(Bottom View)



Mounting Holes
(Bottom View)
Tolerance: $\pm 0.1\text{mm}$



G5LB-1A4



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COMPONENTS LLC**

55 E. Commerce Drive, Suite B
Schaumburg, IL 60173

847-882-2288

OMRON CANADA, INC.

885 Milner Avenue
Toronto, Ontario M1B 5V8

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