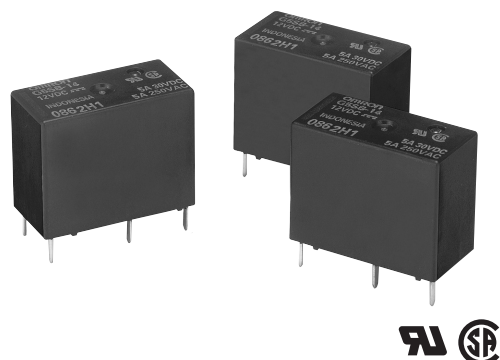


# PCB Relay

## G5SB

**Compact Single-pole Relay for Switching Up to 5 A (Normally Open Contact), Ideal for Fan Control of Air Conditioners, and Heating Control of Small Appliances.**

- Environment-friendly, Pb-free/Cd-free.
- Compact SPDT Relay with high insulation between coil and contacts.
- Up to 5 A switching on the N.O. contacts.
- Ensures an impulse withstand voltage of 8,000 V between the coil and contacts.
- Conforms to UL and CSA (VDE approval pending).



## Ordering Information

Classification	Contact form	Protective structure	Model
Standard	SPDT	Fully sealed	G5SB-14

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

Example: G5SB-14 DC12

Rated coil voltage

## Model Number Legend

G5SB-    -DC  

1    2                      3

### 1. Number of Poles

1: SPDT

### 2. Protective Structure

4: Fully sealed

### 3. Rated Coil Voltage

5, 9, 12, 24 VDC

# Specifications

## ■ Coil Ratings

Rated voltage	5 VDC	9 VDC	12 VDC	24 VDC
Rated current	80 mA	44.4 mA	33.3 mA	16.7 mA
Coil resistance	63 $\Omega$	202 $\Omega$	360 $\Omega$	1,440 $\Omega$
Must operate voltage	75% max. of rated voltage			
Must release voltage	5% min. of rated voltage			
Maximum voltage	110% of rated voltage			
Power consumption	Approx. 400 mW			

## ■ Contact Ratings

Load	Resistive load
Rated load	3 A (NO)/3 A (NC) at 125 VAC 5 A (NO)/3 A (NC) at 125 VAC 5 A (NO) at 250 VAC 3 A (NC) at 250 VAC 5 A (NO)/3 A (NC) at 30 VDC
Contact material	Ag alloy
Rated carry current	5 A (NO)/3 A (NC)
Max. switching voltage	250 VAC, 30 VDC
Max. switching current	5 A (NO)/3 A (NC)
Max. switching capacity	1,250 VA, 150 W (NO) 750 VA, 30 W (NC)
Min. permissible load	10 mA at 5 VDC

Note: P level:  $\lambda_{60}=0.1 \times 10^{-6}$  operation (with an operating frequency of 120 operations/min.)

## ■ Characteristics

Contact resistance (See note 2.)	100 m $\Omega$ max. initial
Operate time (See note 3.)	10 ms max.
Release time (See note 3.)	5 ms max.
Insulation resistance (See note 4.)	1,000 M $\Omega$ min.
Dielectric strength	4,000 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
Impulse withstand voltage	8 kV (1.2 x 50 $\mu$ s)
Vibration resistance	Destruction: 10 to 55 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> (approx. 100G) Malfunction: Energized: 100 m/s <sup>2</sup> (approximately 10G) Non-energized: 100 m/s <sup>2</sup> (approximately 10G)
Life expectancy (See note 5.)	Mechanical: 5,000,000 operations (18,000 operations per hour) Electrical: 200,000 operations: 3 A (NO)/3 A (NC) at 125 VAC resistive load 50,000 operations: 5 A (NO)/3 A (NC) at 125 VAC resistive load 50,000 operations: 5 A (NO) at 250 VAC resistive load 10,000 operations: 3 A (NC) at 250 VAC resistive load 10,000 operations: 5 A (NO)/3 A (NC) at 30 VDC resistive load Switching frequency: 1,800 operations per hour
Ambient temperature	Operating: -40°C to 70°C with no icing or condensation
Ambient humidity	Operating: 5% to 95%
Weight	Approx. 6.5 g

Note: 1. The data shown above are initial values.

2. The contact resistance is possible with 1 A applied at 5 VDC using a fall-of-potential method.

3. The operating time is possible with the operating voltage imposed with no contact bounce at an ambient temperature of 23°C.

4. The insulation resistance is possible between coil and contacts and between contacts of the same polarity at 500 VDC.

5. The electrical life data items shown are possible at 23°C.

## ■ Approved Standards

**UL508 (File No. E41515)**

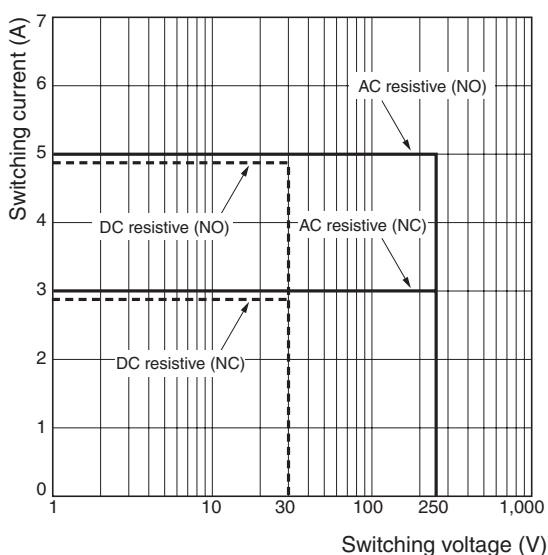
**CSA C22.2 (No. 14) (File No. LR31928)**

Model	Coil ratings	Contact ratings	Number of test operations
G5SB	5 to 24 VDC	3 A, 125 VAC (resistive) NC only 2 A, 125 VAC (resistive) NC only 5 A, 250 VAC (resistive) NO only 3 A, 250 VAC (resistive) NO only 5 A, 30 VDC (resistive) NO only	6,000

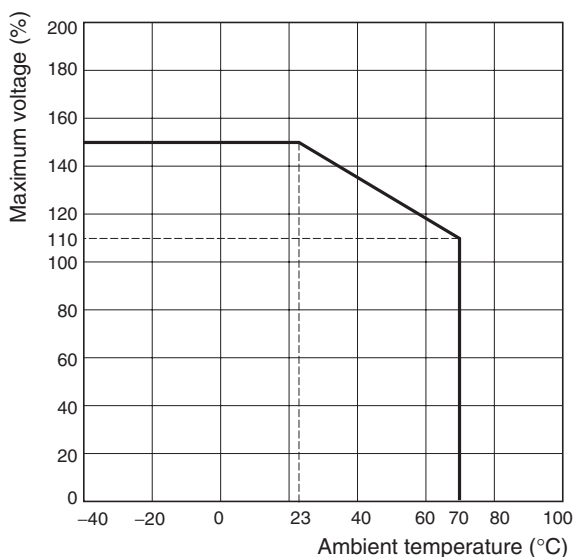
**Note:** Electrical durability tests are performed at 70°C.

## Engineering Data

### Max. Switching Capacity

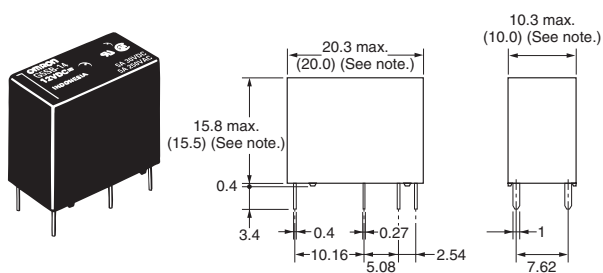


### Ambient Temperature vs. Maximum Voltage



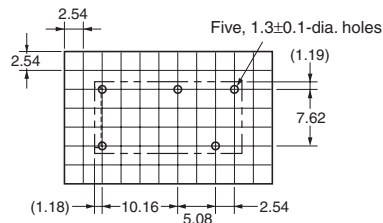
## Dimensions

Unit: mm

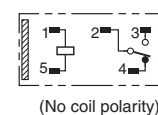


### PCB Mounting Holes (Bottom View)

Tolerance:  $\pm 0.1$  mm



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



**Note:** Values in parentheses are average values.

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