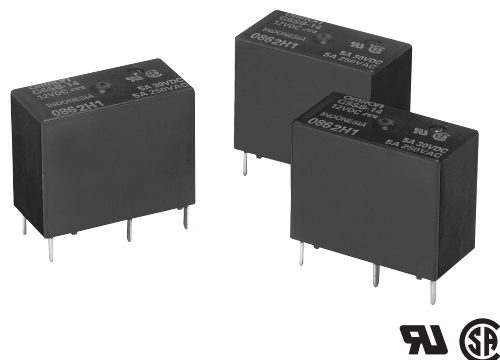


# PCB Relay G5SB

**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.
- Ensures an impulse withstand voltage of 8,000 V between the coil and contacts.
- UL recognized, CSA certified and VDE (EN) approved.
- RoHS Compliant.



## 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

<b>Rated voltage</b>	5 VDC	9 VDC	12 VDC	24 VDC
<b>Rated current</b>	80 mA	44.4 mA	33.3 mA	16.7 mA
<b>Coil resistance</b>	63 Ω	202 Ω	360 Ω	1,440 Ω
<b>Must operate voltage</b>	75% max. of rated voltage			
<b>Must release voltage</b>	5% min. of rated voltage			
<b>Maximum voltage</b>	150% of rated voltage at 23°C			
<b>Power consumption</b>	Approx. 400 mW			

## ■ Contact Ratings

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

<b>Contact resistance (See note 2.)</b>	100 mΩ max. initial
<b>Operate time (See note 3.)</b>	10 ms max.
<b>Release time (See note 3.)</b>	5 ms max.
<b>Insulation resistance (See note 4.)</b>	1,000 MΩ min.
<b>Dielectric strength</b>	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
<b>Impulse withstand voltage</b>	8 kV (1.2 x 50 μs)
<b>Vibration resistance</b>	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)
<b>Shock resistance</b>	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)
<b>Life expectancy (See note 5.)</b>	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
<b>Ambient temperature</b>	Operating: -40°C to 70°C with no icing or condensation
<b>Ambient humidity</b>	Operating: 5% to 85%
<b>Weight</b>	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

UL Recognized (File No. E41515) / CSA Certified (File No. LR31928) - - Ambient Temp = 40°C

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

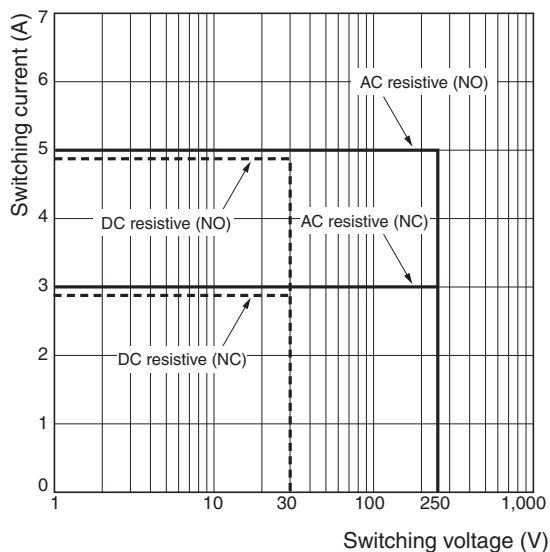
**Note:** Electrical durability tests are performed at 70°C.

VDE (EN61810-1) Approval No. 400003957

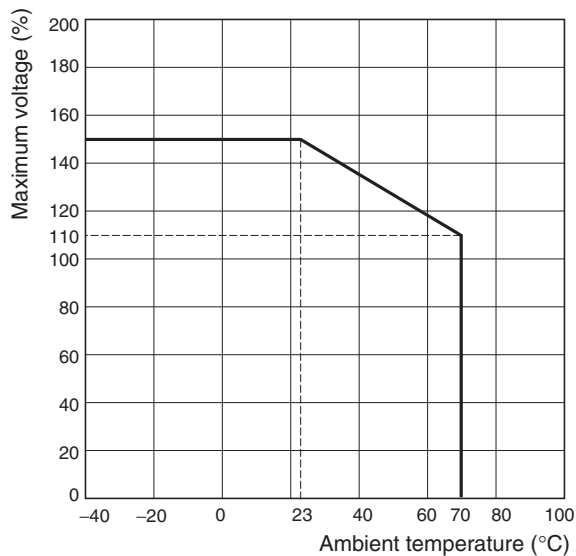
Model	Coil ratings	Contact ratings	Number of test operations
G5SB	5, 12, 24 VDC	5 A (NO) / 3A (NC), 250 VAC	10,000

## Engineering Data

### Max. Switching Capacity

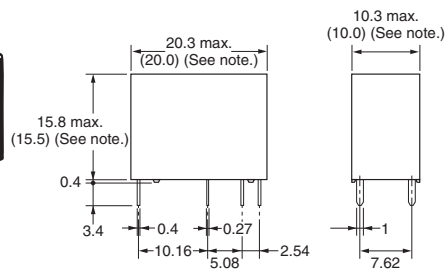
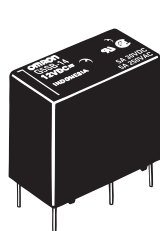


### Ambient Temperature vs. Maximum Voltage



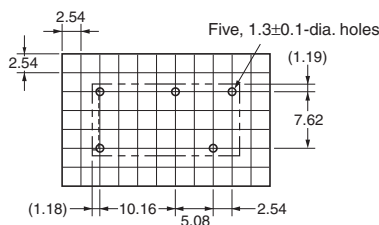
## Dimensions

Unit: mm

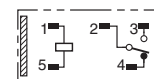


### PCB Mounting Holes (Bottom View)

Tolerance:  $\pm 0.1$  mm



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



(No coil polarity)

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

MEMO

A large grid of dashed lines for taking notes, consisting of 20 columns and 30 rows of small squares.

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