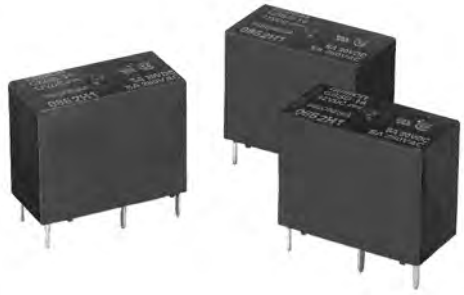


## Compact Single-pole Relay for Switching 5 A (Normally Open Contact), Fan Control of Air Conditioners, and Heating Control of Small Appliances.

- ROHS compliant.
- Compact SPDT Relay with high insulation.
- Incorporates a normally open contact that switches 5 A max.
- Ensures a withstand impulse voltage of 8,000 V between the coil and contacts.
- Conforms to UL, CSA and EN.



## Application Examples

- Fan Motor
- Refrigerator
- Air Conditioner
- Oven
- Washing Machine
- Others

## Ordering Information

Classification	Contact form	Enclosure ratings	Model
Standard	SPDT	Fully sealed	G5SB-14

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

Example: G5SB-14 12 VDC  
└─── Rated coil voltage

### Model Number Legend

**G5SB-□□□ VDC**  
 1 2 3

#### 1. Number of Poles

1: 1 pole (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	48 VDC
<b>Rated current</b>	80 mA	44.4 mA	33.3 mA	16.7 mA	8.3mA
<b>Coil resistance</b>	63 Ω	202 Ω	360 Ω	1,440 Ω	5,762 Ω
<b>Must operate voltage</b>	75% max. of rated voltage				
<b>Must release voltage</b>	5% min. of rated voltage				
<b>Max. voltage</b>	110% of rated voltage				
<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>	AgNi + AgSnIn
<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

## ■ Characteristics

<b>Contact resistance (see note 2)</b>		100 mΩ max.
<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>Insulation Distance</b>	<b>Creepage (Typ)</b>	6.7 mm
	<b>Clearance (Typ)</b>	5.8 mm
<b>Tracking Resistance CTI</b>		250 V
<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. 100 G) Malfunction: Energized: 100 m/s <sup>2</sup> (approx. 10 G) Non-energized: 100 m/s <sup>2</sup> (approx. 10 G)
<b>Endurance (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 100,000 operations: 3 A (NC) at 250 VAC resistive load 100,000 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 durability data items shown are possible at 23°C.

## ■ Approved Standards

UL508 (File No. E41515)/CSA C22.2 (No.14) (File No. LR31928)

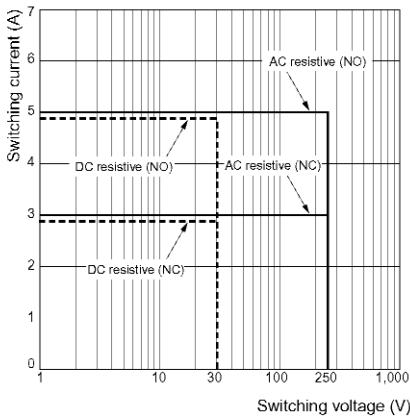
EN 61810-1 (VDE Reg. no 40003957)

Model	Coil ratings	Contact ratings
G5SB	5 to 24 VDC	3 A, 125 VAC (resistive) NO only 2 A, 125 VAC (resistive) NC only 5 A, 250 VAC (resistive) NO only 3 A, 250 VAC (resistive) NC only 5 A, 30 VDC (resistive) NO only

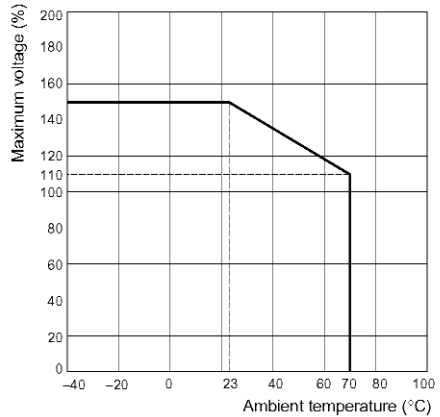
Electrical endurance tests are performed at 70°C. Number of test operations = 6,000

## Engineering Data

### Max. Switching Capacity

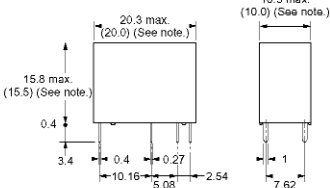
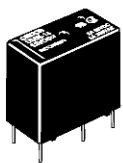


### Ambient Temperature vs. Maximum Voltage



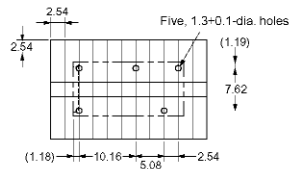
## Dimensions

Note: All units are in millimetres unless otherwise indicated.

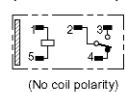


### PCB Mounting Holes (Bottom View)

Tolerance:  $\pm 0.1$  mm



### Terminal Arrangement Internal Connections (Bottom View)



Note: Values in parentheses are average values.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.**

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