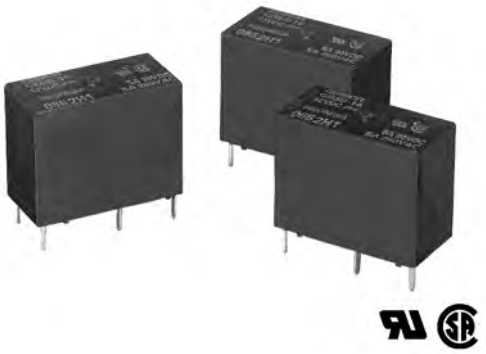
Compact Single-pole Relay for Switching 5 A (Normally Open Contact), Fan Control of Air Conditioners, and Heating Control of Small Appliances.

- 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

Rated voltage	5 VDC	9 VDC	12 VDC	24 VDC	48 VDC
Rated current	80 mA	44.4 mA	33.3 mA	16.7 mA	8.3mA
Coil resistance	63 Ω	202 Ω	360 Ω	1,440 Ω	5,762 Ω
Must operate voltage	75% max. of rated voltage				
Must release voltage	5% min. of rated voltage				
Max. 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	AgNi + AgSnIn
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

■ Characteristics

Contact resistance (see note 2)		100 mΩ max.
Operate time (see note 3)		10 ms max.
Release time (see note 3)		5 ms max.
Insulation resistance (see note 4)		1,000 MΩ 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 μs)
Insulation Distance	**Creepage (Typ)**	6.7 mm
	Clearance (Typ)	5.8 mm
Tracking Resistance CTI)		250 V
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^2 (approx. 100 G) Malfunction: Energized: 100 m/s^2 (approx. 10 G) Non-energized: 100 m/s^2 (approx. 10 G)
Endurance (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) at 250 VAC resistive load 100,000 operations: 3 A (NC) at 250 VAC resistive load 100,000 operations: 5 A (NO)/1 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 85%
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 durability data items shown are possible at 23°C.

■ Approved Standards

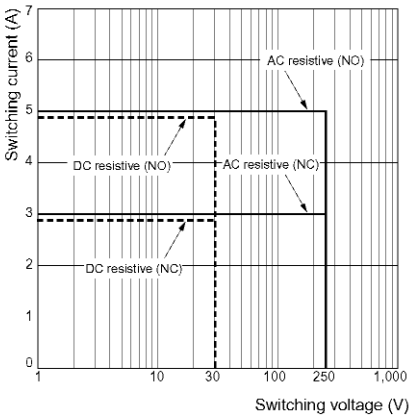
UL508 (File No. E41515)/CSA C22.2 (No.14) (File No. LR31928)
EN 61810-1 (VDE Reg. no 40003957)

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

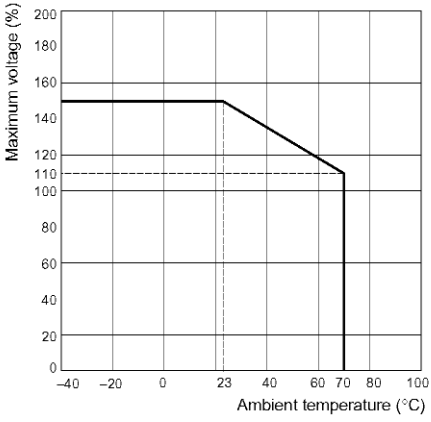
Electrical endurance tests are performed at 70°C. Number of test operations = 6,000

Engineering Data

Max. Switching Capacity

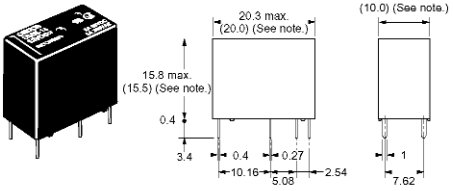


Ambient Temperature vs. Maximum Voltage



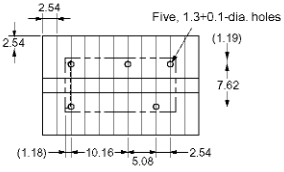
Dimensions

Note: All units are in millimetres unless otherwise indicated.

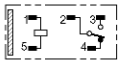


PCB Mounting Holes (Bottom View)

Tolerance: ±0.1 mm



Terminal Arrangement/ Internal Connections (Bottom View)



(No coil polarity)

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.