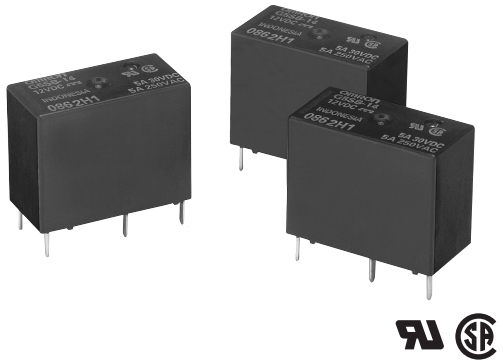
PCB Relay
G5SB

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

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 Ω	202 Ω	360 Ω	1,440 Ω
Must operate voltage	75% max. of rated voltage			
Must release voltage	5% min. of rated voltage			
Maximum voltage	150% of rated voltage at 23°C			
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: λ_{60}=0.1 x 10^{-6} operation (with an operating frequency of 120 operations/min.)

■ Characteristics

Contact resistance (See note 2.)	100 mΩ 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 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)
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. 100G) Malfunction:Energized: 100 m/s^2 (approximately 10G) Non-energized: 100 m/s^2 (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 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 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

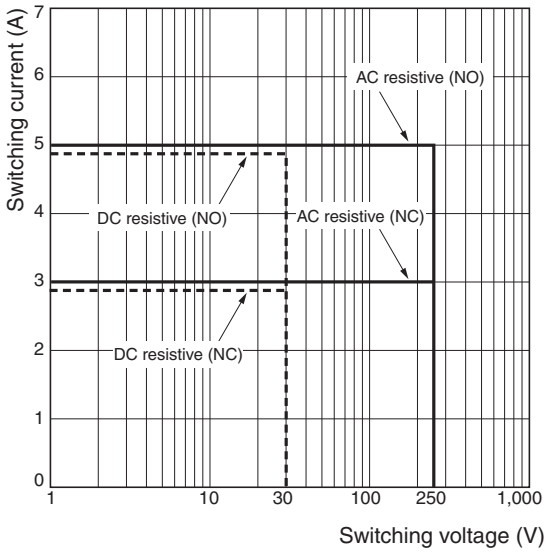
Note: Electrical durability tests are performed at 70°C.

VDE (EN61810-1) Approval No. 400003957

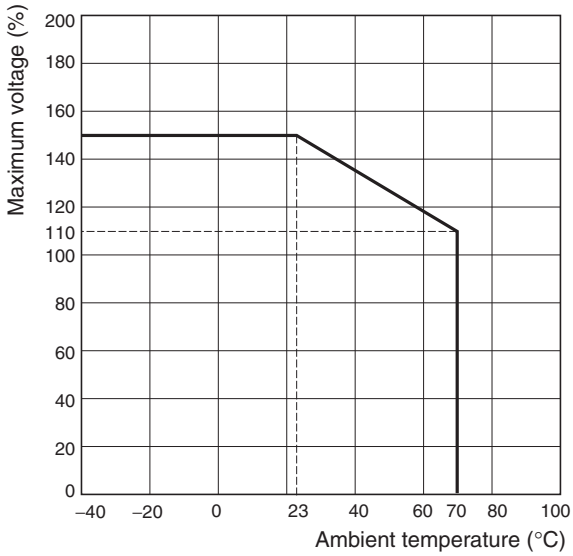
Model	Coil ratings	Contact ratings	Number of test operations
G5SB	5, 12, 24 VDC	5 A (NO) / 3A (NC), 250 VAC	10,000

Engineering Data

Max. Switching Capacity

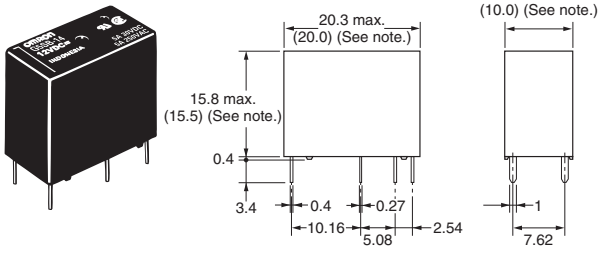


Ambient Temperature vs. Maximum Voltage



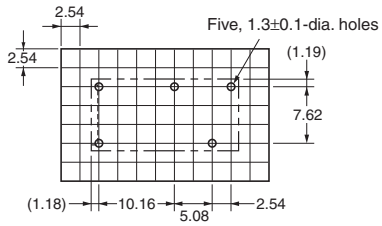
Dimensions

Unit: mm

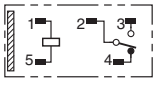


PCB Mounting Holes (Bottom View)

Tolerance: ±0.1 mm



Terminal Arrangement/ Internal Connections (Bottom View)



(No coil polarity)

Note: Values in parentheses are average values.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

OMRON ELECTRONIC COMPONENTS LLC
55 E. Commerce Drive, Suite B
Schaumburg, IL 60173
847-882-2288

OMRON ON-LINE
Global - http://www.omron.com
USA - http://www.components.omron.com

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