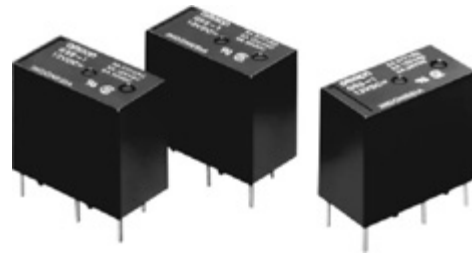


PCB Relay G5S

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

- Compact relay with high insulation between coil and contacts.
- Up to 5A switching on the NO contacts.
- Ensures a withstand impulse voltage of 8,000 V between the coil and contacts.
- Class F coil insulation available.
- Conforms to UL, CSA, and IEC (TÜV).



Ordering Information

| Classification | | Enclosure rating | Model |
|----------------|---------|------------------|--------|
| Single contact | SPDT | Plastic-sealed | G5S-1 |
| | SPST-NO | Plastic-sealed | G5S-1A |

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

Example: G5S-1 DC12
└─── Rated coil voltage

MODEL NUMBER LEGEND

G5S- - - - -DC
1 2 3 4 5

- | | | | | |
|--|--|--|---|--|
| 1. Contact Pole 1: Single pole | 2. Contact Form nil = 1 form C A = 1 form A | 3. Insulation class nil = standard CB = Class B CF = Class F | 4. Enclosure nil = plastic sealed v = vented | 5. Rated Coil Voltage 5, 9, 12, 18, 24, 48 VDC |
|--|--|--|---|--|

Specifications

■ COIL RATINGS

| | | | | | | |
|----------------------|--|---------|---------|---------|---------|---------|
| Rated voltage | 5 VDC | 9 VDC | 12 VDC | 18 VDC | 24 VDC | 48 VDC |
| Rated current | 80 mA | 44.4 mA | 33.3 mA | 22.2 mA | 16.7 mA | 8.3 mA |
| Coil resistance | 62.5 Ω | 202.5 Ω | 360 Ω | 810 Ω | 1,440 Ω | 5,760 Ω |
| Must operate voltage | 75% max. of rated voltage | | | | | |
| Must release voltage | 5% min. of rated voltage | | | | | |
| Max. voltage | 150% of rated voltage at 23°C, 110% of rated voltage at 70°C | | | | | |
| Power consumption | Approx. 400 mW | | | | | |

Note: Rated current and coil resistance are measured at 23°C with a tolerance of ±10%.

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■ CONTACT RATINGS

| Load | Resistive load | Inductive load |
|-------------------------|---|--|
| Rated load | 2 A (NO)/2 A (NC) at 277 VAC 5 A (NO)/3 A (NC) at 125 VAC 5 A (NO)/3 A (NC) at 30 VDC | 0.5 A at 250 VAC, $\cos\phi=0.4$ 1 A at 250 VAC, $\cos\phi=0.8$ 0.8 A at 250 VAC, $\cos\phi=0.9$ |
| Contact material | Ag | |
| Rated carry current | 5 A (NO)/3 A (NC) | |
| Max. switching voltage | 277 VAC, 30 VDC | |
| Max. switching current | 5 A (NO)/3 A (NC) | 1 A |
| Max. switching capacity | 625 VA, 150 W (NO) 375 VA, 90 W (NC) | 250 VA |
| 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 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 750 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, 1.5-mm double amplitude for 2 hours Malfunction: 10 to 55 Hz, 1.5-mm double amplitude for 5 minutes |
| Shock resistance | Destruction: 1,000 m/s ² (approx. 100G) Malfunction: Energized: 100 m/s ² (approximately 10G) Non-energized: 50 m/s ² (approximately 5G) |

(This table continues on the next page.)

Characteristics Table - continued from previous page

| | | |
|-------------------------------|---------------------|---|
| Life expectancy (See Note 5.) | Mechanical | 5,000,000 operations (18,000 operations per hour) |
| | Electrical | 200,000 operations: 1 A (NO)/1 A (NC) at 277-VAC resistive load 3 A (NO)/3 A (NC) at 125-VAC resistive load 100,000 operations: 0.8 A (NO)/0.8 A (NC) at 250 VAC, $\cos\phi=0.9$ 5 A (NO)/3 A (NC) at 30-VDC resistive load 50,000 operations: 2 A (NO)/2 A (NC) at 277-VAC resistive load 5 A (NO)/3 A (NC) at 125-VAC resistive load |
| | Switching frequency | 1,800 operations per hour |
| Ambient temperature | Operating & storage | -40°C to 70°C (-40°F to 158°F) with no icing or condensation -40°C to 85°C (class B) (-40°F to 185°F) |
| Ambient humidity | Operating & storage | 35% to 85% |
| Weight | | Approx. 8.0 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 rated 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 |
|-----------------------------|--------------|---|---------------------------|
| G5S-1 (-CB) G5S-1A (-CB) | 5-48 VDC | 0.5 A, 250 VAC (resistive) 2 A, 120 VAC (resistive) 2 A, 30 VDC (resistive) 5 A, 125 VAC (resistive) 1/10 HP, 125 VAC 5 A, 277 VAC (resistive) 1/6 HP, 277 VAC 0.3 A, 110 VDC (resistive) 5 A, 30 VDC (resistive) | 6,000 |

TÜV (IEC 255, VDE0435 File No. R9650783)

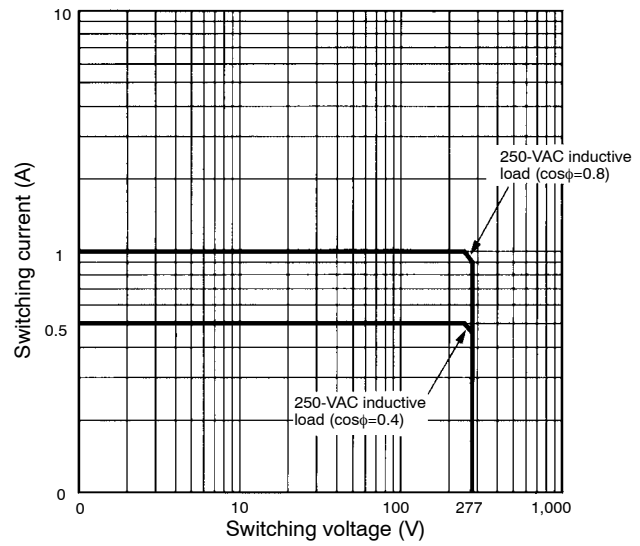
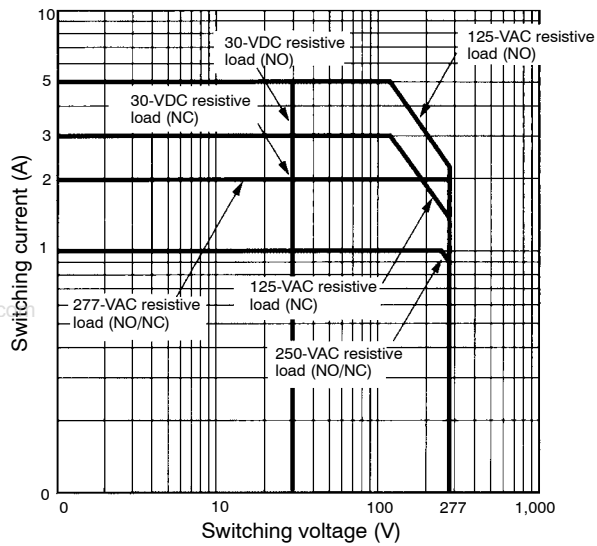
Electrical life tests are performed at 70°C.

| Model | Coil ratings | Contact ratings | Number of test operations |
|-----------------------------|----------------------|--|---------------------------|
| G5S-1 (-CB) G5S-1A (-CB) | 5,6,9,12,18,20,24,48 | 1.5 A, 277 VAC (resistive) | 30,000 |
| | | 1 A, 250 VAC (resistive) | 100,000 |
| | | 2 A, 30 VDC (resistive) | 30,000 |
| | | 1 A, 250 VAC, $\cos\phi=0.8$ | 100,000 |
| | | 0.5 A, 250 VAC, $\cos\phi=0.4$ | 30,000 |
| | | 1 A, 250 VAC, $\cos\phi=0.8$ (NO only) | 200,000 |
| | | 1 A, 250 VAC, $\cos\phi=0.8$ (NC only) | 200,000 |

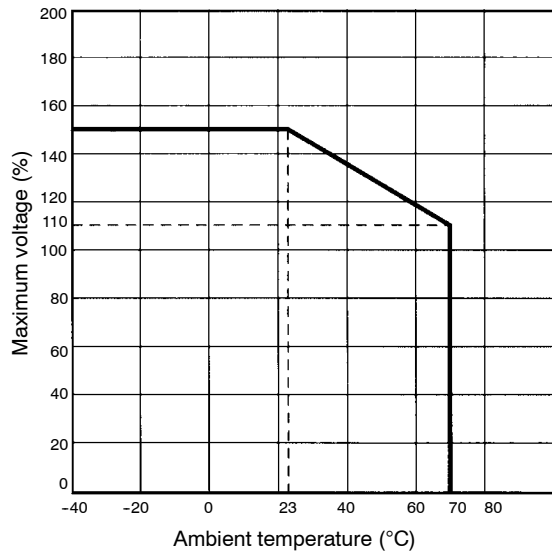
Note: Pollution Degree 2, Overvoltage Category II, Material Group III

Engineering Data

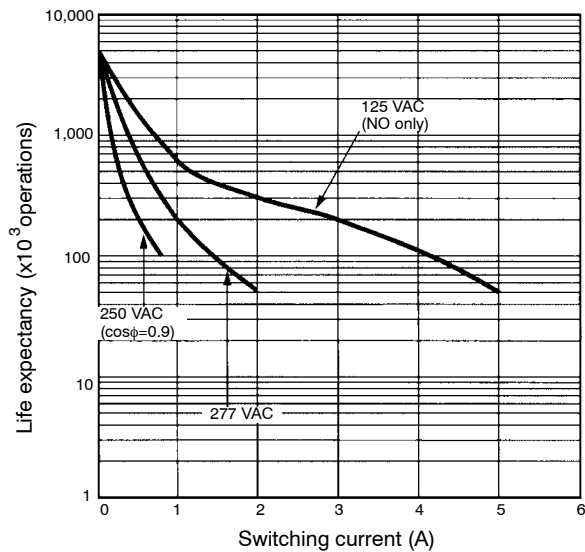
MAX. SWITCHING CAPACITY



AMBIENT TEMPERATURE VS. MAXIMUM VOLTAGE



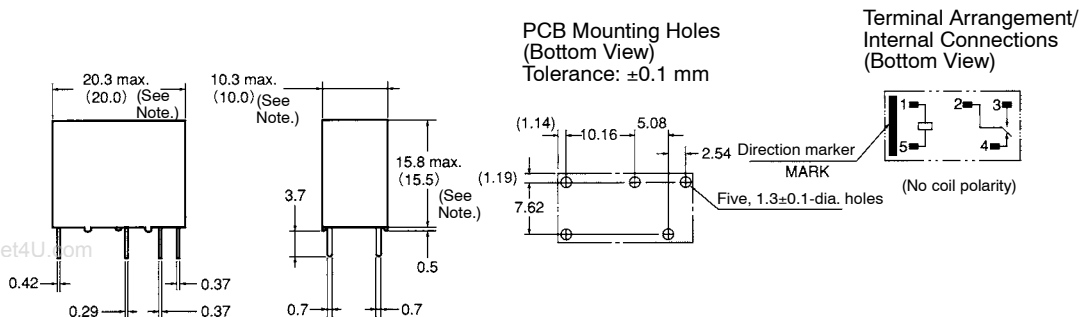
LIFE EXPECTANCY



Dimensions

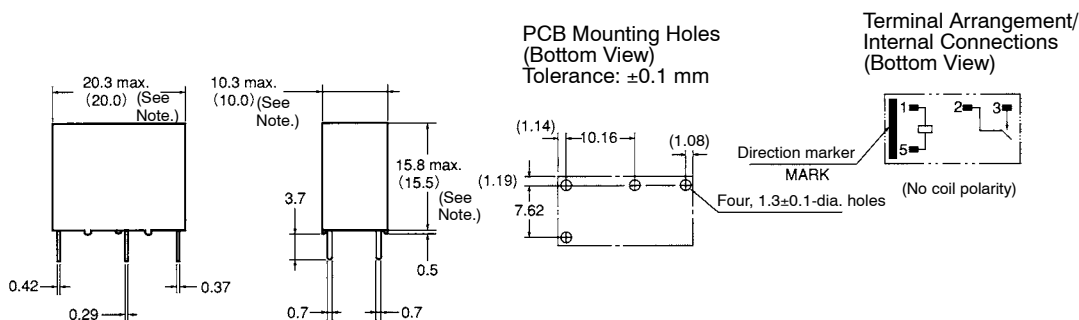
Unit: mm (inch)

■ G5S SPDT



Note: Values in parentheses are average values.

■ SPST-NO



Note: Values in parentheses are average values.

Precautions

For general precautions on PCB Relays, refer to the precautions provided in *General Information* of the *Relay Product Data Book*.



Caution

Do not touch the terminals of the Relay or the charted part of the socket when power is supplied to the Relay. Otherwise, an electric shock may occur.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4



OMRON ELECTRONICS LLC

One Commerce Drive
Schaumburg, IL 60173

847-882-2288

OMRON CANADA, INC.

885 Milner Avenue
Toronto, Ontario M1B 5V8

416-286-6465

OMRON ON-LINE

Global - <http://www.omron.com>
USA - <http://www.omron.com/oei>
Canada - <http://www.omron.ca>