

A Cubic, Single-pole 10-A Power Relay

- Subminiature “sugar cube” relay with universal terminal footprint.
- Conforms to VDE0435, UL508, CSA22.2.
- High switching power: 10 A.
- Two types of seal available; flux protection and fully sealed.
- Withstands impulse of up to 4,500 V.
- Coil power consumption: 400 mW



Ordering Information

Enclosure ratings	Contact form	Model
Flux protection	SPDT	G5LC-1
	SPST-NO	G5LC-1A
Fully sealed	SPDT	G5LC-14
	SPST-NO	G5LC-1A4

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

Example: G5LC-1 12 VDC

Rated coil voltage

Model Number Legend

G5LC - VDC
 1 2 3 4

1. Number of Poles

1: 1 pole

2. Contact Form

None: SPDT

A: SPST-NO

3. Enclosure Ratings

None: Flux protection

4: Fully sealed

4. Rated Coil Voltage

5, 12, 24 VDC

Specifications

■ Coil Ratings

Rated voltage	5 VDC	12 VDC	24 VDC
Rated current	80.0 mA	33.3 mA	16.7 mA
Coil resistance	62.5 Ω	360 Ω	1,440 Ω
Must operate voltage	75% max. of rated voltage		
Must release voltage	10% min. of rated voltage		
Max. voltage	110% of rated voltage at 85°C		
Power consumption	Approx. 400 mW		

Note: The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of $\pm 10\%$.

■ Contact Ratings

Load	Resistive load ($\cos\phi = 1$)
Rated load	10 A at 240 VAC (NO), 5 A at 120 VAC (NO/NC) 10 A at 24 VDC (NO), 5 A at 24 VDC (NO/NC)
Rated carry current	12 A
Max. switching voltage	250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied)
Max. switching current	AC: 12 A; DC: 12 A
Max. switching power	2,400 VA, 240 W
Failure rate (reference value)	100 mA at 5 VDC

■ Characteristics

Contact resistance	100 m Ω max.
Operate time	10 ms max.
Release time	5 ms max.
Max. switching frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr at rated load
Insulation resistance	1,000 M Ω min. (at 500 VDC)
Dielectric strength	2,000 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	4,500 V (1.2 $\times$ 50 μ s) between coil and contacts
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)
Shock resistance	Destruction: 1,000 m/s ² Malfunction: 100 m/s ²
Endurance	Mechanical: 10,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr)
Ambient temperature	Operating: -25°C to 85°C (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 12 g

■ Approved Standards

UL508, UL873 (File No. E41643)/CSA C22.2 No. 14, No. 0 (File No. LR31928)

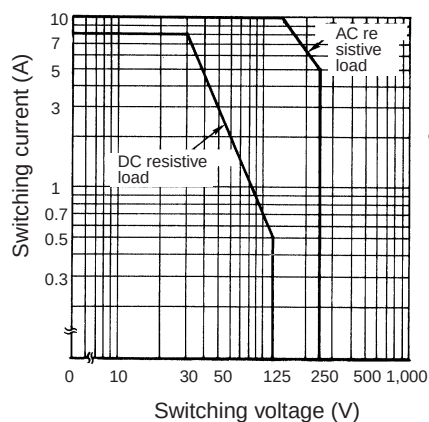
Model	Coil rating	Contact rating
G5LC	5 to 24 VDC	NO: 10 A, 250 VAC (general use) 10 A, 24 VDC (resistive load) 1/8 hp, 120 VAC (50,000 cycles) 12 A, 120 VAC (resistive load) NC: 1/8 hp, 120 VAC (50,000 cycles)

VDE DIN VDE 0435, DIN EN 60255 (File No. 6850ÜG)

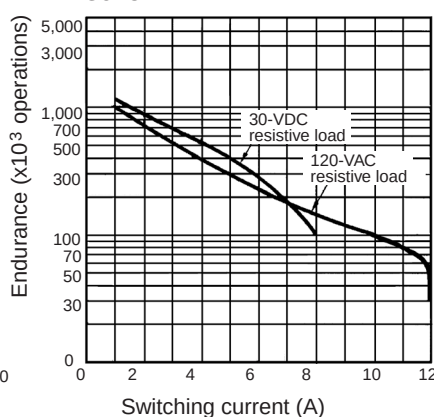
Model	Coil rating	Contact rating
G5LC	Approx. 400 mW 5, 12, 24 VDC	5 A, 250 VAC (resistive load, 50,000 cycles) at 85°C. 10 A, 250 VAC (resistive load 50,000 cycles) (NO) at 85°C

Engineering Data

**Maximum Switching Power
G5LC**

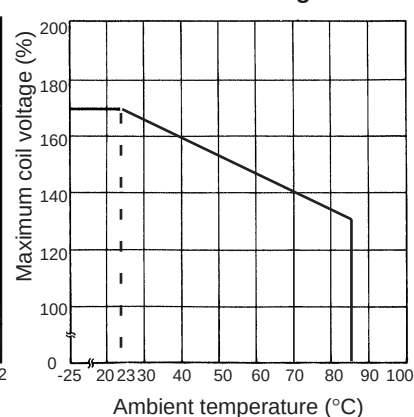


**Endurance
G5LC**



Note: Same curve as for 250-VAC resistive load

**Ambient Temperature vs.
Maximum Coil Voltage**



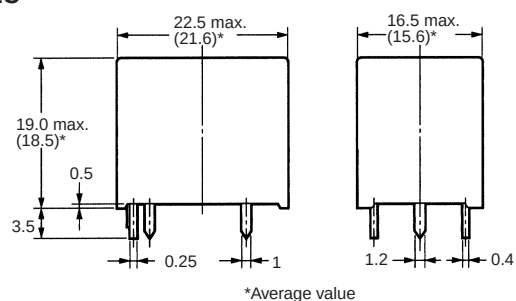
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Dimensions

Note: 1. All units are in millimeters unless otherwise indicated.

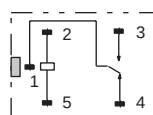
2. Orientation marks are indicated as follows:  

G5LC



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

SPDT

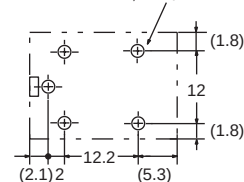


**Mounting Holes
(Bottom View)**

Tolerance: ± 0.1 mm
unless specified

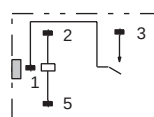
SPDT

Five, $1.3^{+0.2}_{-0}$ dia. holes



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

SPST-NO

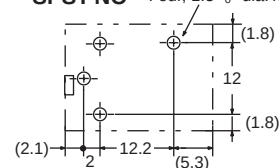


**Mounting Holes
(Bottom View)**

Tolerance: ± 0.1 mm
unless specified

SPST-NO

Four, $1.3^{+0.2}_{-0}$ dia. holes



Precautions

Basic Information

Before actually committing any component to a mass-production situation, OMRON strongly recommends situational testing, in as close to actual production situations as possible. One reason is to confirm that the product will still perform as expected after surviving the many handling and mounting processes involved in mass production. Also, even though OMRON relays are individually tested a number of times, and each meets strict requirements, a certain testing tolerance is permissible. When a high-precision product uses many components, each depends upon the rated performance thresholds of the other components. Thus, the overall performance tolerance may accumulate into undesirable levels. To avoid problems, always conduct tests under the actual application conditions.

General

To maintain the initial characteristics of a relay, exercise care that it is not dropped or mishandled. For the same reason, do not remove the case of the relay; otherwise, the characteristics may degrade. Avoid using the relay in an atmosphere containing sulfuric acid (SO₂), hydrogen sulfide (H₂S), or other corrosive gases. Do not continuously apply a voltage higher than the rated maximum voltage to the relay. Never try to operate the relay at a voltage and a current other than those rated. Do not use the relay at temperatures higher than that specified in the catalog or data sheet.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

Cat. No. K118-E1-01 **In the interest of product improvement, specifications are subject to change without notice.**

OMRON Corporation

Electronics Components Company

C&C Power Relay Division
Shiokoji Horikawa, Shimogyo-ku
Kyoto, 600-8530 Japan
Tel: (81)75-344-7097 Fax: (81)75-344-7049

Printed in Japan
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