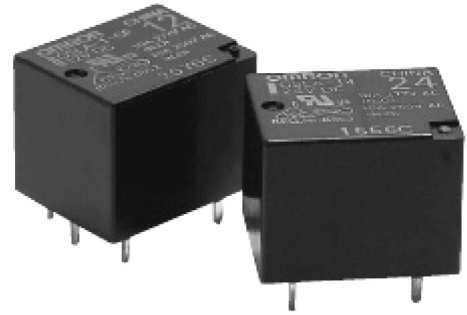


# G5LA

PCB Power Relay

## A Cubic, Single-pole 10A Power Relay

- Economical cube relay with universal terminal footprint
- Conforms to VDE0435
- UL recognized/CSA certified.
- High switching power: 10A @ 250VAC
- Withstands impulse of up to 4,500V
- Coil power consumption: 360mW
- UL Class F coil insulation type also available
- Tracking resistance: CTI>250



**RoHS Compliant**

### Model Number Legend

G5LA--  
1 2 3 4 5

- |                            |                                |
|----------------------------|--------------------------------|
| <b>1. Number of poles</b>  | <b>4. Classification</b>       |
| 1: 1-pole                  | None: Standard                 |
|                            | E: High capacity (NC side)     |
| <b>2. Contact Form</b>     | <b>5. UL Insulation System</b> |
| None: SPDT (1c)            | None: Standard                 |
| A: SPST-NO (1a)            | CF: Class F                    |
| <b>3. Enclosure rating</b> |                                |
| None: Flux protection      |                                |
| 4: Fully sealed            |                                |

### Application Examples

- Home appliance
- OA equipments
- Vending machines, etc.

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### Ordering Information

| Classification | Terminal Shape | Contact form | Enclosure rating | Model          | Rated coil voltage                      | Minimum packing unit |
|----------------|----------------|--------------|------------------|----------------|---|----------------------|
| Standard       | PCB terminals  | SPST-NO (1a) | Flux protection  | G5LA-1A(-CF)   | 5VDC<br>9VDC<br>12VDC<br>24VDC<br>48VDC | 100 pcs/tray         |
|                |                |              | Fully-sealed     | G5LA-1A4(-CF)  |   |                      |
|                |                | SPDT (1c)    | Flux protection  | G5LA-1(-CF)    |   |                      |
|                |                |              | Fully-sealed     | G5LA-14(-CF)   |   |                      |
| High-capacity  | PCB terminals  | SPDT (1c)    | Flux protection  | G5LA-1-E(-CF)  | 5VDC<br>9VDC<br>12VDC<br>24VDC<br>48VDC | 100 pcs/tray         |
|                |                |              | Fully-sealed     | G5LA-14-E(-CF) |   |                      |

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

Example: G5LA-1 DC 12  Rated coil voltage

### Ratings

#### Coil

| Rated voltage (VDC) | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) | Must release voltage (V) | Max. voltage (V)                 | Power consumption (mW) |
|---------------------|--------------------|---------------------|--------------------------|--------------------------|----------------------------------|------------------------|
|                     |                    |                     |                          |                          |                                  |                        |
| 5                   | 72                 | 69.4                | 75% max.                 | 10% min.                 | 130% (at 85°C)<br>170% (at 23°C) | Approx. 360            |
| 9                   | 40                 | 225                 |                          |                          |                                  |                        |
| 12                  | 30                 | 400                 |                          |                          |                                  |                        |
| 24                  | 15                 | 1600                |                          |                          |                                  |                        |
| 48                  | 10                 | 4800                |                          |                          |                                  | Approx. 480            |

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of ±10%.  
2. Please avoid ultrasonic cleaning this relay.

## ●Contacts

| Item                           |       | Standard model                    | High-capacity (-E) model          |
|--------------------------------|-------|-----------------------------------|-----------------------------------|
| Contact material               |       | Ag-alloy (Cd free)                |                                   |
| Load                           |       | Resistive load (cosφ=1)           |                                   |
| Rated load                     | NO    | 10A at 250VAC<br>10A at 24VDC     |                                   |
|                                | NO/NC | 5A/5A at 125VAC<br>5A/5A at 24VDC | 5A/5A at 250VAC<br>5A/5A at 24VDC |
| Rate carry current             |       | 10A (NO), 5A (NC)                 | 10A                               |
| Max. switching voltage         |       | 250VAC, 24VDC                     |                                   |
| Max. switching current         |       | 10A (NO), 5A (NC)                 | 10A                               |
| Max. switching power           | NO    | AC2,500VA, DC240W                 |                                   |
|                                | NO/NC | AC625VA, DC120W                   | AC1,250VAC, DC120W                |
| Failure rate (reference value) |       | 100mA at 5VDC                     |                                   |

Note. P level:  $\lambda_{60} = 0.1 \times 10^{-5}/\text{operation}$

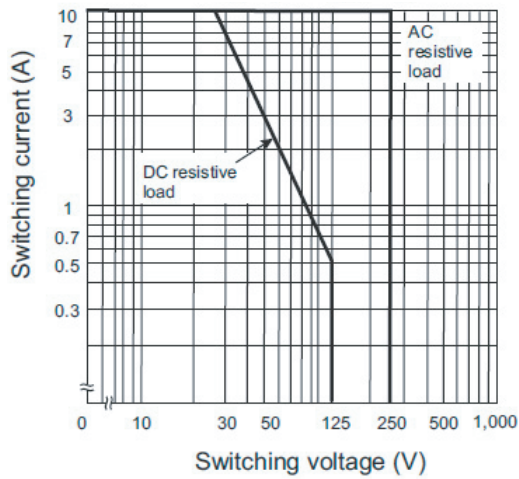
## ■Characteristics

|                               |   |
|-------------------------------|---|
| Contact resistance            | 100 mΩ max.   |
| Operate time                  | 10 ms max.  |
| Release time                  | 5 ms max.   |
| Max. switching frequency      | Mechanical: 18,000 operations/hr<br>Electrical: 1,800 operations/hr (under rated load)  |
| Insulation resistance         | 1,000 mΩ min. (at 500 VDC)  |
| Dielectric strength           | 2,000 VAC, 1mA 50/60Hz for 1 min between coil and contacts<br>750 VAC 1mA 50/60Hz for 1 min between contacts of same polarity |
| Vibration resistance          | Destruction: 10 to 55Hz, 1.5mm double amplitude<br>Malfunction: 10 to 55Hz, 1.5mm double amplitude                            |
| Shock resistance              | Destruction: 1,000m/s <sup>2</sup> (approx. 100G)<br>Malfunction: 100 m/s <sup>2</sup> (approx. 10G)                          |
| Endurance                     | Mechanical: 10,000,000 operations min.<br>Electrical: Approx. 100,000 operations  |
| Ambient operating temperature | -40° to 85° (with no icing or condensation)   |
| Ambient operating humidity    | 5% to 85%   |
| Weight                        | Approx. 7.5g  |

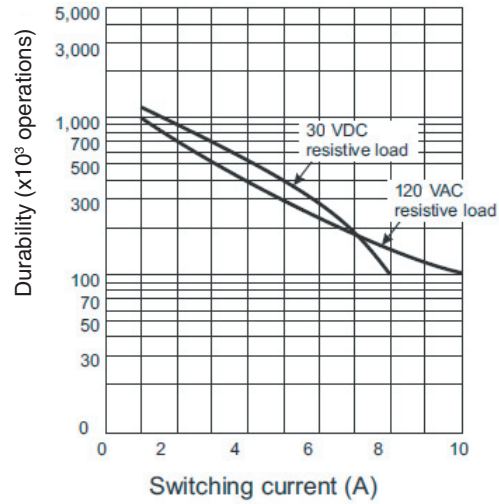
Note. Values in the above table are the initial values.

## Engineering Data

### Maximum switching capacity (NO)

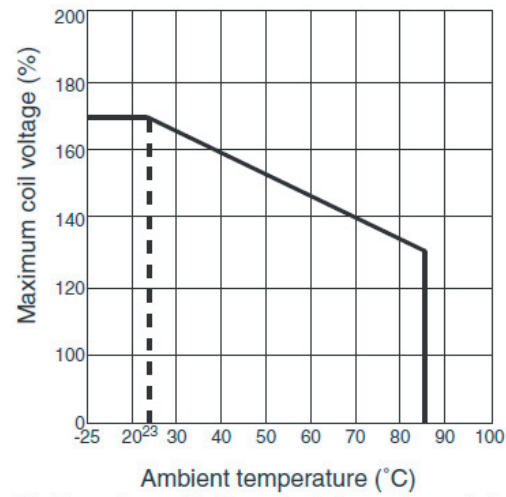


### Durability (NO) (Average value)



Note. The 120 VAC resistive load service life curve also applies 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.

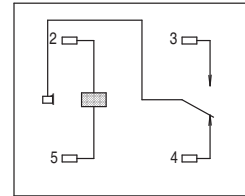
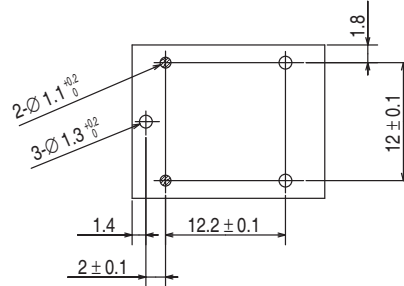
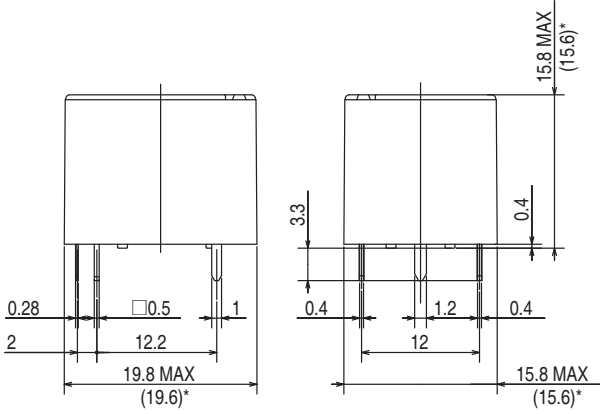
## ■Dimensions

Note. All units are in millimeters unless otherwise indicated.

G5LA-1(-CF)  
 G5LA-14(-CF)  
 G5LA-1-E(-CF)  
 G5LA-14-E(-CF)

PCB Mounting Holes  
 (Bottom View)  
 Tolerance:  $\pm 0.1$  mm  
 Unless specified

Terminal  
 Arrangement/Internal  
 Connections (Bottom View)

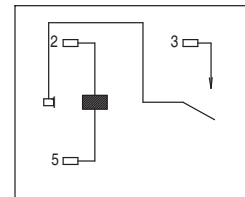
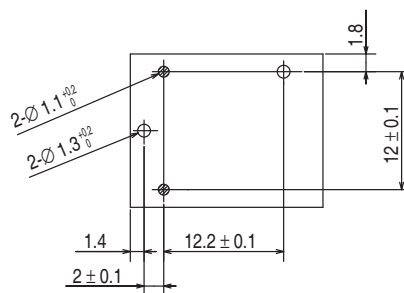
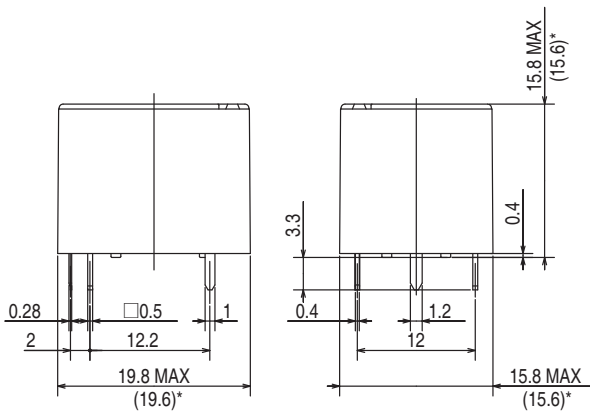


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G5LA-1A(-CF)  
 G5LA-1A4(-CF)

PCB Mounting Holes  
 (Bottom View)  
 Tolerance:  $\pm 0.1$  mm  
 Unless specified

Terminal  
 Arrangement/Internal  
 Connections (Bottom View)



## ■Approved Standards

### ●UL Recognized (File No. E41643)

| Model | Contact form                 | Coil ratings | Contact ratings                                  | Number of test operations |
|-------|------------------------------|--------------|--|---------------------------|
| G5LA  | SPDT-NO (1a)<br>SPST-NO (1a) | 5 to 48 VDC  | 10 A, 277 VAC, general use, 40°C                 | 100,000                   |
|       |                              |              | 10 A, 30 VDC, resistive, 40°C                    | 50,000                    |
|       |                              |              | 1/2 HP, 125-250VAC, 40°C                         | 1,000                     |
|       |                              |              | 10 A, 277 VAC, general use, 85°C (-CF type only) | 50,000                    |
|       |                              |              | 200 W Tungsten, 125 VAC, 40°C                    | 100,000                   |
|       | SPDT-NC (1b)                 |              | 10 A, 125 VAC, resistive, 40°C                   | 6,000                     |
|       |                              |              | 10 A, 277 VAC, general use, 40°C (-E type only)  | 100,000                   |
|       |                              |              | 10A, 24 VDC, resistive, 40°C (-E type only)      |                           |

### ●CSA Certified (File No. LR31928)

| Model | Contact form                 | Coil ratings | Contact ratings                                  | Number of test operations |
|-------|------------------------------|--------------|--|---------------------------|
| G5LA  | SPDT-NO (1a)<br>SPST-NO (1a) | 5 to 48 VDC  | 10 A, 277 VAC, general use, 40°C                 | 6,000                     |
|       |                              |              | 10 A, 24 VDC, resistive, 40°C                    |                           |
|       |                              |              | 1/2 HP, 125-250VAC, 40°C                         | 1,000                     |
|       |                              |              | 10 A, 277 VAC, general use, 85°C (-CF type only) | 6,000                     |
|       | SPDT-NC (1b)                 |              | 10 A, 125 VAC, resistive, 40°C                   |                           |

### ●VDE Certified (Approval No. 40017051)

| Model | Contact form                 | Coil ratings            | Contact ratings                                  | Number of test operations |
|-------|------------------------------|-------------------------|--|---------------------------|
| G5LA  | SPDT-NO (1a)<br>SPST-NO (1a) | 5, 9, 12, 24,<br>48 VDC | 10 A, 250 VAC, resistive, 85°C (flux protection) | 50,000                    |
|       |                              |                         | 10 A, 250 VAC, resistive, 85°C (fully sealed)    | 10,000                    |
|       |                              |                         | 12 A, 250 VAC, resistive, 85°C                   |                           |
|       | SPDT (1c)                    |                         | 5 A, 250 VAC, resistive, 85°C (flux protection)  | 50,000                    |
|       |                              |                         | 5 A, 250 VAC, resistive, 85°C (fully sealed)     | 10,000                    |

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• Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.  
 • Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

**Note: Do not use this document to operate the Unit.**

**OMRON Corporation**

ELECTRONIC AND MECHANICAL COMPONENTS COMPANY

Contact: [www.omron.com/ecb](http://www.omron.com/ecb)

Cat. No. J184-E1-02  
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