

# G5LE

PCB Power Relay

## Cubic, Single-pole 10A Power Relay



- Ideal for a wide variety of applications such as home appliances, OA equipments, vending machines, etc.
- Ambient Operating Temperature 85°C
- UL class-B coil insulation for standard model.
- UL, CSA, EN standards approved and conforms to Electrical Appliance and Material Safety Law (300 V max.).



RoHS Compliant

### Model Number Legend

G5LE-□□□

1 2 3

- Number of Poles**  
1: 1-pole
- Contact Form**  
None: SPDT (1c)  
A: SPST-NO (1a)
- Enclosure rating**  
None: Flux protection  
4: Fully sealed

### Application Examples

- Home appliances
- OA equipments
- Vending machines

### Ordering Information

| Terminal Shape | Enclosure rating |              | Flux protection |                    | Fully sealed |                    | Minimum packing unit |
|----------------|------------------|--------------|-----------------|--------------------|--------------|--------------------|----------------------|
|                | Classification   | Contact form | Model           | Rated coil voltage | Model        | Rated coil voltage |                      |
| PCB terminals  | Standard         | SPDT (1c)    | G5LE-1          | 5 VDC              | G5LE-14      | 5 VDC              | 100 pcs/tray         |
|                |                  |              |                 | 12 VDC             |              | 12 VDC             |                      |
|                |                  |              |                 | 24 VDC             |              | 24 VDC             |                      |
|                |                  | SPST-NO (1a) | G5LE-1A         | G5LE-1A4           | 5 VDC        | 5 VDC              |                      |
| 12 VDC         | 12 VDC           |              |                 |                    |              |                    |                      |
|                |                  |              |                 | 24 VDC             |              | 24 VDC             |                      |

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

Example: G5LE-1 DC5 — Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as □□ VDC.

### Ratings

#### Coil

| Rated voltage | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) | Must release voltage (V) | Max. voltage (V) | Power consumption (mW) |
|---------------|--------------------|---------------------|--------------------------|--------------------------|------------------|------------------------|
|               |                    |                     | % of rated voltage       |                          |                  |                        |
| 5 VDC         | 79.4               | 63                  | 75% max.                 | 10% min.                 | 170% at 23°C     | Approx. 400            |
| 12 VDC        | 33.3               | 360                 |                          |                          |                  |                        |
| 24 VDC        | 16.7               | 1,440               |                          |                          |                  |                        |

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. The operating characteristics are measured at a coil temperature of 23°C.

3. The "Max. voltage" is the maximum voltage that can be applied to the relay coil.

#### Contacts

| Item                   | Load | Resistive load  | Inductive load (cosφ = 0.4)   |
|------------------------|------|---|-------------------------------|
| Contact type           |      | Single  |                               |
| Contact material       |      | Ag-alloy (Cd free)  |                               |
| Rated load             |      | 10 A at 120 VAC; 8 A at 30 VDC                            | 5 A at 120 VAC; 4 A at 30 VDC |
| Rated carry current    |      | 10 A  |                               |
| Max. switching voltage |      | 250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied) |                               |
| Max. switching current |      | 10 A  | 5 A                           |

### Characteristics

|   |                                       |   |
|---|---------------------------------------|---|
| Contact resistance *1                       | 100 mΩ max.                           |   |
| Operate time                                | 10 ms max.                            |   |
| Release time                                | 5 ms max.                             |   |
| Insulation resistance *2                    | 100 MΩ min.                           |   |
| Dielectric strength                         | Between coil and contacts             | 2,000 VAC, 50/60 Hz for 1 min   |
|   | Between contacts of the same polarity | 750 VAC, 50/60 Hz for 1 min   |
| Impulse withstand voltage                   | between coil and contacts             | 4,500 V (1.2×50 μs)   |
| 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 <sup>2</sup>  |
|   | Malfunction                           | 100 m/s <sup>2</sup>  |
| Durability                                  | Mechanical                            | 10,000,000 operations min. (at 18,000 operations/hr)                  |
|   | Electrical                            | 100,000 operations min. (at 1,800 operations/hr)                      |
| Failure rate (P level) (reference value) *3 |                                       | 100 mA at 5 VDC   |
| Ambient operating temperature               |                                       | -25°C to 85°C (with no icing or condensation)                         |
| Ambient operating humidity                  |                                       | 35% to 85%  |
| Weight                                      |                                       | Approx. 12 g  |

Note. The data given above are initial values

\*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.

\*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.

\*3. This value was measured at a switching frequency of 120 operations/min.

## Engineering Data

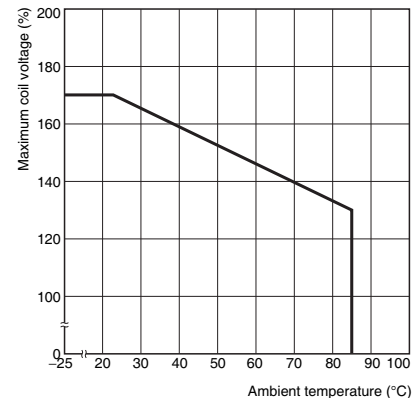
### Maximum Switching Capacity



### Durability

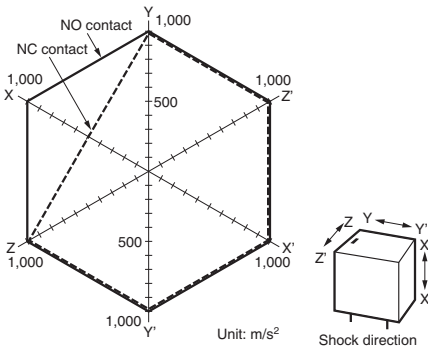


### Ambient Temperature vs. Maximum Coil Voltage



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

### Shock Malfunction



Number of Relays: 5 pcs

Test Conditions: Shock was applied 3 times in each direction with and without excitation and the level at which the shock caused malfunction was measured.

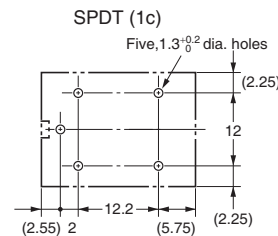
Rating: 100 m/s<sup>2</sup>

## Dimensions

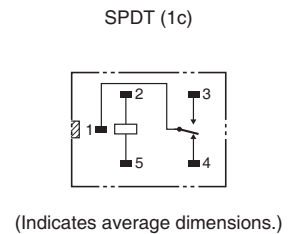
### G5LE-1 (SPDT contact) G5LE-1A (SPST-NO contact)



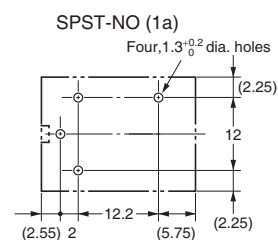
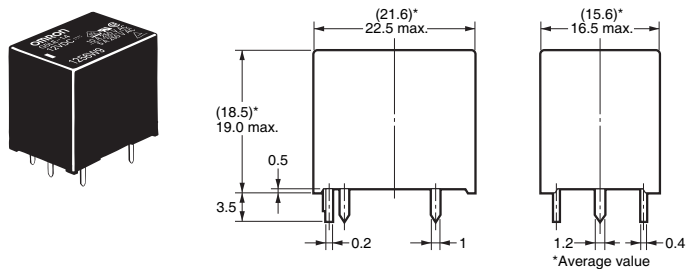
PCB Mounting Holes  
(Bottom View)  
Tolerance: ±0.1 mm unless specified



Terminal Arrangement/  
Internal Connections  
(Bottom View)



### G5LE-14 (SPDT contact) G5LE-1A4 (SPST-NO contact)



Note. Orientation marks are indicated as follows: [ ] [ ]

## ■Approved Standards

**UL Recognized:**  (File No. E41643)

| Model | Contact form              | Coil ratings   | Contact ratings   | Number of test operations |
|-------|---------------------------|----------------|---|---------------------------|
| G5LE  | SPDT-NO (1a)<br>SPDT (1c) | 5 to<br>24 VDC | 10 A, 250 VAC<br>(general use) at 40°C<br>8 A, 30 VDC<br>(resistive load) at 40°C | 6,000                     |
|       |                           |                | TV-3 (N.O only) 40°C  | 25,000                    |

**CSA Certified:**  (File No. LR31928)

| Model | Contact form              | Coil ratings   | Contact ratings  | Number of test operations |
|-------|---------------------------|----------------|--|---------------------------|
| G5LE  | SPDT-NO (1a)<br>SPDT (1c) | 5 to<br>24 VDC | 10 A, 250 VAC<br>(general use) at 40°C<br>8 A, 30 VDC<br>(resistive load) at<br>40°C | 6,000                     |
|       |                           |                | TV-3 (N.O only) 40°C   | 25,000                    |

**VDE EN/IEC Certified:**  (Certificate No. 6850)

| Model | Contact form              | Coil ratings     | Contact ratings                  | Number of test operations |
|-------|---------------------------|------------------|----------------------------------|---------------------------|
| G5LE  | SPDT-NO (1a)<br>SPDT (1c) | 5, 12, 24<br>VDC | 10 A, 250 VAC<br>(cosφ = 1) 85°C | 50,000                    |

**TÜV EN/IEC Certified:**  (Certificate No. R50158258)

| Model | Contact form              | Coil ratings     | Contact ratings                           | Number of test operations |
|-------|---------------------------|------------------|---|---------------------------|
| G5LE  | SPDT-NO (1a)<br>SPDT (1c) | 5, 12, 24<br>VDC | 2.5 A, 250 VAC<br>(cosφ = 0.4) 85°C       | 100,000                   |
|       |                           |                  | 10 A, 250 VAC<br>(resistive load) at 85°C | 50,000                    |
|       |                           |                  | 8 A, 30 VAC<br>(resistive load) at 40°C   | 100,000                   |

## ■Precautions

- Please refer to “PCB Relays Common Precautions” for correct use.

- 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. K100-E1-07  
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