

# PCB Relay

# G5LE

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

- Subminiature “sugar cube” relay
- Contact ratings of 10 A
- Withstands impulses of up to 4,500 V
- Two types of seal available: flux protection and plastic-sealed
- UL class-B insulation certified, UL class-F available
- Ideal for applications in security equipment, household electrical appliances, garage door openers, and audio equipment



## Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G5LE-1-DC12).

| Seal            | Contact form | Part number        |                     |                     |
|-----------------|--------------|--------------------|---------------------|---------------------|
|                 |              | Contact material   |                     |                     |
|                 |              | AgSnO <sub>2</sub> | AgCdO               | AgSnIn              |
| Flux protection | SPDT         | <b>G5LE-1</b>      | <b>G5LE-1-ACD</b>   | <b>G5LE-1-ASI</b>   |
|                 | SPST-NO      | <b>G5LE-1A</b>     | <b>G5LE-1A-ACD</b>  | <b>G5LE-1A-ASI</b>  |
| Plastic-sealed  | SPDT         | <b>G5LE-14</b>     | <b>G5LE-14-ACD</b>  | <b>G5LE-14-ASI</b>  |
|                 | SPST-NO      | <b>G5LE-1A4</b>    | <b>G5LE-1A4-ACD</b> | <b>G5LE-1A4-ASI</b> |

### MODEL NUMBER LEGEND

G5LE-   - -

1    2    3    4    5

**1. Number of Poles**

1: 1 pole

**2. Contact Form**

None: SPDT  
A: SPST-NO

**3. Sealing**

None: Flux-protection  
4: Plastic-sealed

**4. Contact Material**

None: AgSnO<sub>2</sub>  
ACD: AgCdO  
ASI: AgSnIn

**5. Insulation Class**

None: Class B insulation  
CF: Class F insulation

# Specifications

## ■ COIL DATA

|                      |   |         |         |       |         |         |         |
|----------------------|---|---------|---------|-------|---------|---------|---------|
| Rated voltage        | 3 VDC   | 5 VDC   | 6 VDC   | 9 VDC | 12 VDC  | 24 VDC  | 48 VDC  |
| Rated current        | 136.4 mA  | 79.4 mA | 66.7 mA | 45 mA | 33.3 mA | 16.7 mA | 8.33 mA |
| Coil resistance      | 22.5 Ω  | 63 Ω    | 90 Ω    | 200 Ω | 360 Ω   | 1,440 Ω | 5,760 Ω |
| Must operate voltage | 75% of rated voltage (max.)   |         |         |       |         |         |         |
| Must release voltage | 10% of rated voltage (min.)   |         |         |       |         |         |         |
| Max. voltage         | 130% of rated voltage at 70°C (158°F), 170% of rated voltage at 23°C (73°F) |         |         |       |         |         |         |
| Power consumption    | Approx. 400 mW  |         |         |       |         |         |         |

- Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of ±10%.  
 2. 360 mW coil is available. Contact Omron for details.  
 3. VDE approved model available. Contact Omron for details.

## ■ CONTACT DATA

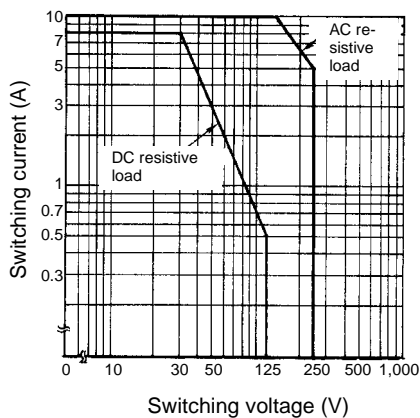
|                         |                                   |      |
|-------------------------|-----------------------------------|------|
| Load                    | Resistive load ( $\cos\phi = 1$ ) |      |
| Rated load              | 10 A at 120 VAC; 8 A at 30 VDC    |      |
| Rated carry current     | 10 A                              |      |
| Max. switching voltage  | 250 VAC, 125 VDC                  |      |
| Max. switching current  | AC                                | 10 A |
|                         | DC                                | 8 A  |
| Max. switching capacity | 1,200 VA, 240 W                   |      |
| Min. permissible load   | 100 mA at 5 VDC                   |      |

## ■ CHARACTERISTICS

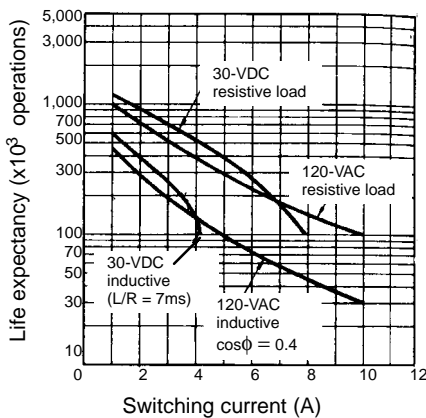
|                           |  |  |
|---------------------------|--|--|
| Contact resistance        | 100 mΩ max.  |  |
| Operate time              | 10 ms max.   |  |
| Release time              | 5 ms max.  |  |
| Bounce time               | Operate  | Approx. 0.6 ms                                       |
|                           | Release  | Approx. 7.2 ms                                       |
| Max. switching frequency  | Mechanical   | 18,000 operations/hr                                 |
|                           | Electrical   | 1,800 operations/hr (under rated load)               |
| Insulation resistance     | 100 MΩ min. (at 500 VDC)   |  |
| Dielectric strength       | 750 VAC, 50/60 Hz for 1 min between contacts of same polarity<br>2,000 VAC, 50/60 Hz for 1 min between coil and contacts |  |
| Impulse withstand voltage | 4,500 V between coil and contacts  |  |
| Vibration resistance      | Destruction  | 10 to 55 Hz, 1.5-mm double amplitude                 |
|                           | Malfunction  | 10 to 55 Hz, 1.5-mm double amplitude                 |
| Shock resistance          | Destruction  | 1,000 m/s <sup>2</sup> (approx. 100G)                |
|                           | Malfunction  | 100 m/s <sup>2</sup> (approx. 10G)                   |
| Life expectancy           | Mechanical   | 10,000,000 operations min. (at 18,000 operations/hr) |
|                           | Electrical   | 100,000 operations min. (at 1,800 operations/hr)     |
| Ambient temperature       | Operating  | -40°C to 85°C (-13°F to 185°F)                       |
| Ambient humidity          |  | 35% to 85%   |
| Weight                    | Approx. 12 g (0.42 oz)   |  |

CHARACTERISTIC DATA

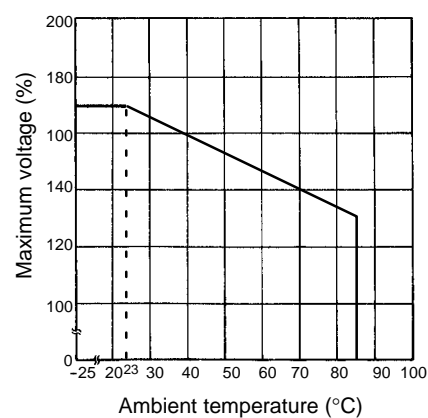
Max. Switching Capacity G5LE



Life Expectancy G5LE



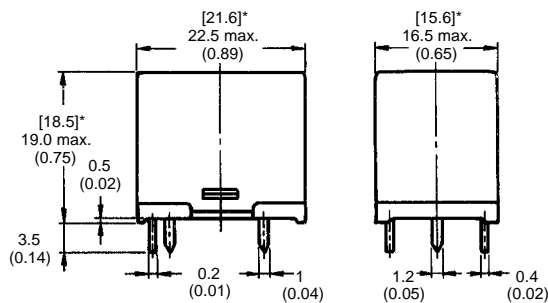
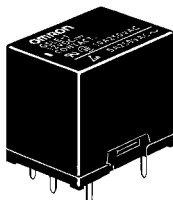
Ambient Temperature vs. Maximum Voltage



Dimensions

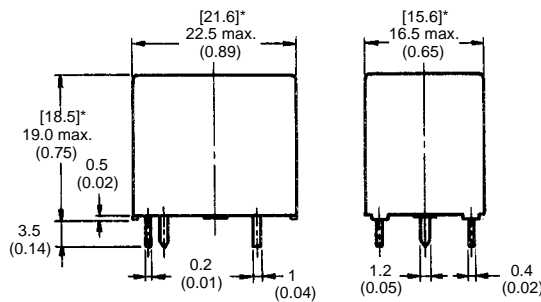
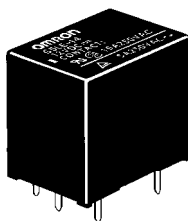
Unit: mm (inch)

G5LE-1(A)



\*Average value

G5LE-1(A)4

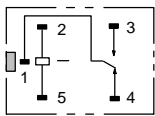


\*Average value

## STANDARD

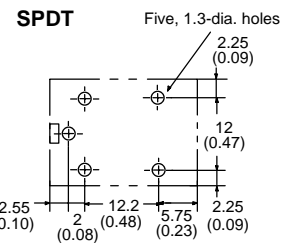
### Terminal Arrangement/ Internal Connections (Bottom View)

#### SPDT

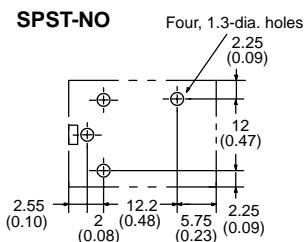
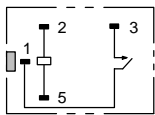




### Mounting Holes (Bottom View)

Tolerance:  $\pm 0.1$  mm



#### SPST-NO



Note: Orientation marks are indicated as follows:  

## APPROVALS

### UL325, UL508, UL1409, UL1950 (File No. E41643)

| Part number | Coil rating | Contact rating   |
|-------------|-------------|--|
| G5LE        | 3 to 48 VDC | 5 A, 250 VAC (general use)<br>5 A, 30 VDC (resistive load)<br>125 VA, 120 VAC (P.D 100,000 cycles)<br>5 A, 125 VAC (G.P), 30K, 70°C (158°F)<br>NO:<br>1/8 hp, 120 VAC (50,000 cycles)<br>4 FLA, 4 LRA, 120 VAC (100,000 cycles)<br>1/2 s, ON:OFF<br>Ambient temperature: 105°C (221°F)<br>5 FLA, 30 LRA, 120 VAC<br>Mechanical life: 100,000 cycles<br>TV-3, 120 VAC |
|             |             | NC:<br>1/10 hp, 120 VAC (50,000 cycles)<br>2 FLA, 4 LRA, 120 VAC (100,000 cycles)<br>1/2 s, ON:OFF<br>Ambient temperature: 105°C (221°F)   |
|             |             | 10 A, 250 VAC (general use)<br>8 A, 30 VDC (resistive load)<br>NO:<br>1/6 hp, 120 VAC (50,000 cycles)<br>1/3 hp, 125 VAC, 30K, 70°C (158°F)<br>NC:<br>1/8 hp, 120 VAC (50,000 cycles)  |

Note: Only part numbers with the suffix "ASI" are TV-5 approved.

**CSA C22.2 NO. 14 (File No. LR34815)**

| Part number | Coil rating | Contact rating   |
|-------------|-------------|--|
| G5LE        | 3 to 48 VDC | 5 A, 250 VAC (general use)<br>5 A, 30 VDC (resistive load)<br>125 VA, 120 VAC (P.D 100,000 cycles)<br>5 A, 125 VAC (G.P), 30K, 70°C (158°F)<br>NO:<br>1/8 hp, 120 VAC (50,000 cycles)<br>TV-3<br>NC:<br>1/10 hp, 120 VAC (50,000 cycles) |
|             |             | 10 A, 250 VAC (general use)<br>8 A, 30 VDC (resistive load)<br>6 A, 277 VAC (general use), 100K<br>NO:<br>1/6 hp, 120 VAC (50,000 cycles)<br>1/3 hp, 125 VAC, 70°C (158°F) 30K<br>NC:<br>1/10 hp, 120 VAC (50,000 cycles)                |

Note: Only part numbers with the suffix "ASI" are TV-5 approved.

**TÜV (VDE File No. R9151267)**

| Part number | Coil rating            | Contact rating   |
|-------------|------------------------|--|
| G5LE        | 3, 5, 6, 9, 12, 24 VDC | 1.2 A, 250 VAC ( $\cos\phi = 0.4$ )<br>2.5 A, 250 VAC (resistive load)<br>5 A, 30 VDC (resistive load) |
|             |                        | 2.5 A, 250 VAC ( $\cos\phi = 0.4$ )<br>5 A, 250 VAC (resistive load)<br>8 A, 30 VDC (resistive load)   |

**NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.**

**OMRON**<sup>®</sup>  
**OMRON ELECTRONICS, INC.**  
 One East Commerce Drive  
 Schaumburg, IL 60173  
**1-800-55-OMRON**

**OMRON CANADA, INC.**  
 885 Milner Avenue  
 Scarborough, Ontario M1B 5V8  
**416-286-6465**