

## 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
- Reverse terminal configuration with NO and NC contact forms are available
- UL class-B insulation certified
- 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   |              |              |
|                 |              | AgSrC <sub>2</sub> | AgCoC        | AgSrIr       |
| Flux protection | SPDT         | G5LE-1             | G5LE-1-ACD   | G5LE-1-ASI   |
|                 | SPST-NC      | G5LE-1A            | G5LE-1A-ACD  | G5LE-1A-ASI  |
| Plastic-sealed  | SPDT         | G5LE-14            | G5LE-14-ACD  | G5LE-14-ASI  |
|                 | SPST-NC      | G5LE-1A4           | G5LE-1A4-ACD | G5LE-1A4-ASI |

#### MODEL NUMBER LEGEND

G5LE-□ □ □ - □ - □ - □  
 1 2 3 4 5 6

**1. Number of Poles**

1: 1 pole

**2. Contact Form**

None: SPDT  
 A: SPST-NC

**3. Sealing**

None: Flux protection  
 4: Plastic-sealed

**4. Pre-soldered Terminal Configuration**

None: Standard PCB terminal  
 R: Reverse PCB terminal

**5. Contact Material**

None: AgSrC<sub>2</sub>  
 ACD: AgCoC  
 ASI: AgSrIr

**6. Approved Standards**

None: UL, CSA, TUV  
 UL Class B 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. 360mW coil is available. Contact OMRON for details.

## ■ CONTACT DATA

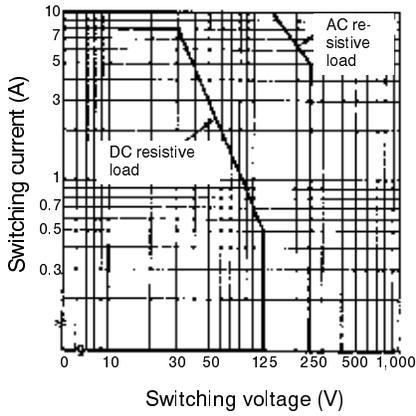
|                         |                                   |      |
|-------------------------|-----------------------------------|------|
| Load                    | Resistive load ( $\cos\phi = 1$ ) |      |
| Rated load              | 10 A at 120 VAC; 8 A at 30 VDC    |      |
| Rated carry current     | 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

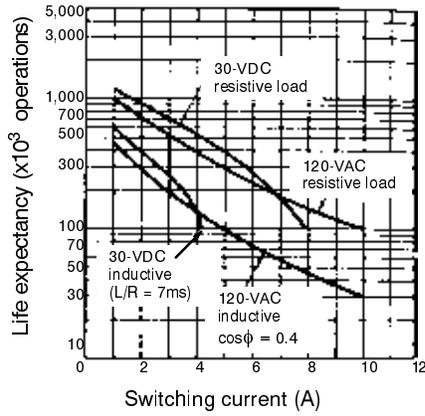
|                           |  |  |
|---------------------------|--|--|
| Contact resistance        | 100 mΩ max.  |  |
| Operate time              | 10 ms max.   |  |
| Release time              | 5 ms max.  |  |
| Bounce time               | Operate  | Approx. 0.6 ms                                       |
|                           | 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  | -25°C to 85°C (-13°F to 185°F)                       |
| Ambient humidity          |  | 35% to 85%   |
| Weight                    | Approx. 12 g (0.42 oz)   |  |

■ CHARACTERISTIC DATA

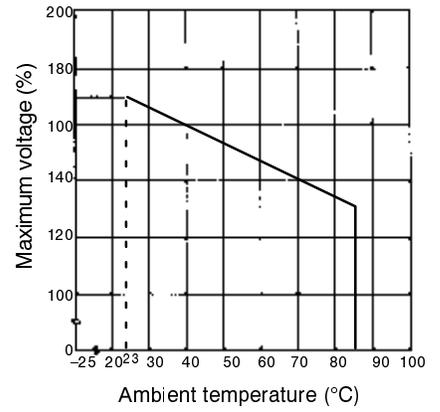
Max. Switching Capacity G5LE



Life Expectancy G5LE



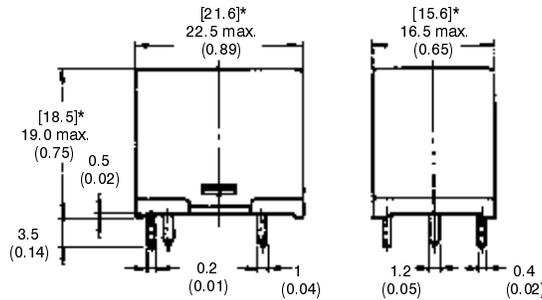
Ambient Temperature vs. Maximum Voltage



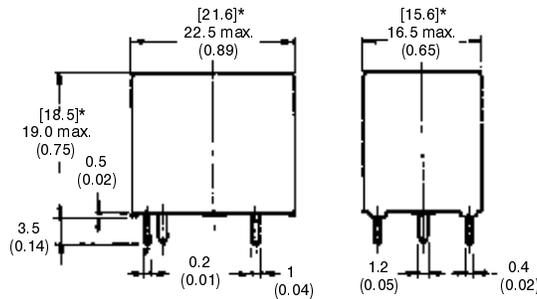
Dimensions

Unit: mm (inch)

■ G5LE-1



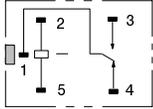
■ G5LE-14



■ STANDARD

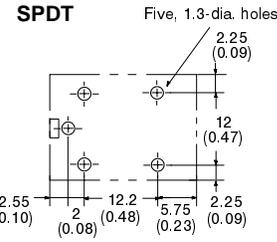
Terminal Arrangement/  
Internal Connections  
(Bottom View)

SPDT



Mounting Holes  
(Bottom View)

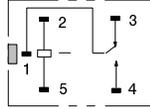
Tolerance: ±0.1 mm



■ REVERSE

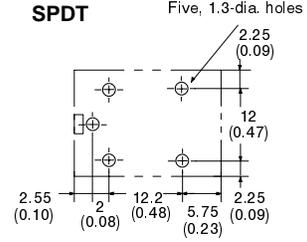
Terminal Arrangement/  
Internal Connections  
(Bottom View)

SPDT

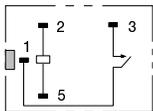


Mounting Holes  
(Bottom View)

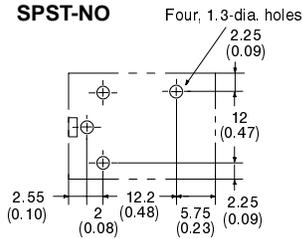
Tolerance: ±0.1 mm



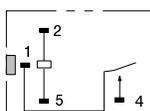
SPST-NO



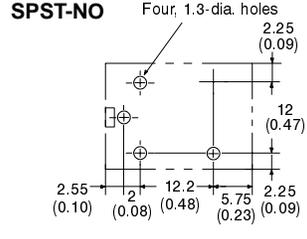
SPST-NO



SPST-NO



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<br>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 "AS1" 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>NC:<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>8 A, 277 VAC (general Use), 100K<br>NC:<br>1/8 hp, 120 VAC (50,000 cycles)<br>1/2 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-3 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 (cosφ = 0.4)<br>2.5 A, 250 VAC (resistive load)<br>5 A, 30 VDC (resistive load) |
|             |                        | 2.5 A, 250 VAC (cosφ = 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.

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