

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 4 5

- Number of Poles**
1: 1-pole
- Contact Form**
None: SPDT (1c)
A: SPST-NO (1a)
- Enclosure rating**
None: Flux protection
4: Fully sealed
- Insulation System**
None: Class B (Class F for -E versions)
CF: Class F (UL and CSA only)
- Approved Standards**
None: Standard
E: High capacity type

Application Examples

- Home appliances
- OA equipments
- Vending machines

G
5
L
E

Ordering Information

| Terminal Shape | Classification | Enclosure rating Contact form | Flux protection | | Fully sealed | | Minimum packing unit |
|----------------|----------------|----------------------------------|-----------------|--------------------|--------------|--------------------|----------------------|
| | | | 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-1-CF | 5 VDC | G5LE-14-CF | 5 VDC | |
| | | | | 12 VDC | | 12 VDC | |
| | | | | 24 VDC | | 24 VDC | |
| | High capacity | SPST-NO (1a) | G5LE-1A | 5 VDC | G5LE-1A4 | 5 VDC | |
| | | | | 12 VDC | | 12 VDC | |
| | | | | 24 VDC | | 24 VDC | |
| | | SPDT (1c) | G5LE-1A-CF | 5 VDC | G5LE-1A4-CF | 5 VDC | |
| | | | | 12 VDC | | 12 VDC | |
| | | | | 24 VDC | | 24 VDC | |
| SPDT (1c) | G5LE-1-E | 5 VDC | --- | | | | |
| | | 12 VDC | | | | | |
| | | 24 VDC | | | | | |
| SPST-NO (1a) | G5LE-1A-E | 5 VDC | --- | | | | |
| | | 12 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

| Item | Classification Load | Standard type | | High capacity type |
|------------------------|------------------------|---|-------------------------------|--|
| | | Resistive load | Inductive load (cosφ=0.4) | Resistive load |
| 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 | 16 A at 250 VAC (NO) 12 A at 250 VAC (NC) |
| Rated carry current | | 10 A | | 16A (NO)/12A (NC) |
| Max. switching voltage | | 250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied) | | 250 VAC |
| Max. switching current | | 10 A | 5 A | 16A (NO)/12A (NC) |

■ Characteristics

| Item | Classification | Standard type | High capacity type |
|---|---------------------------------------|---|--|
| 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 ² | |
| | Malfunction | 100 m/s ² | |
| Durability | Mechanical | 10,000,000 operations min. (at 18,000 operations/hr) | |
| | Electrical | 100,000 operations min. (at 1,800 operations/hr) | 50,000 operations min. (NO) 30,000 operations min. (NC) (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

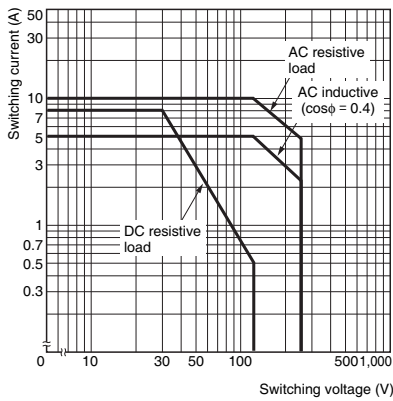
*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.

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

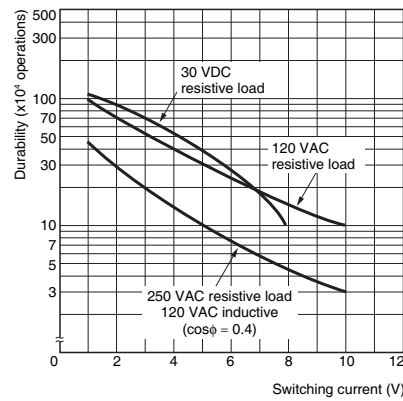
*3. This value was measured at a switching frequency of 120 operations/min.

Engineering Data

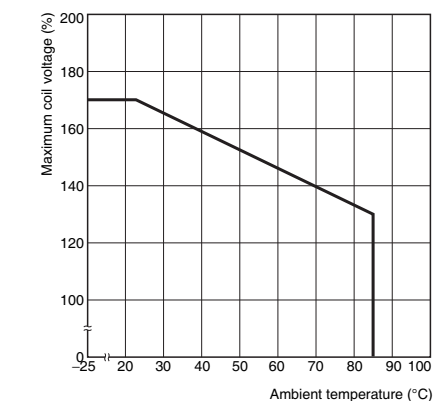
Maximum Switching Capacity



Durability

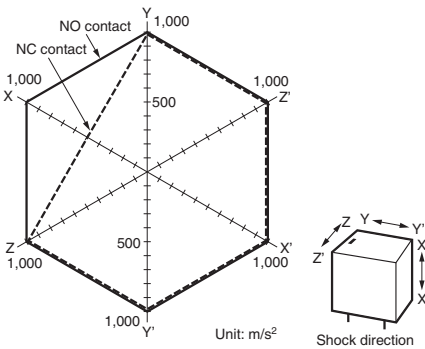


Ambient Temperature vs. Maximum Coil Voltage



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

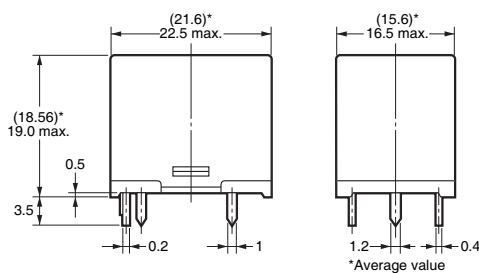
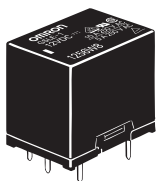
Test Conditions: Shock was applied 3 times in each direction with and without excitation and the level at which the shock caused malfunction was measured.

Rating: 100 m/s²

Dimensions

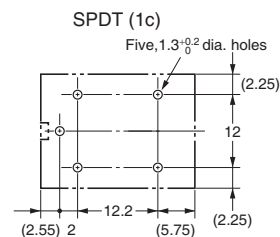
G5LE-1 (-□) (SPDT contact)

G5LE-1A (-□) (SPST-NO contact)



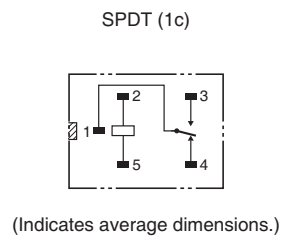
PCB Mounting Holes

(Bottom View)
Tolerance: ±0.1 mm unless specified



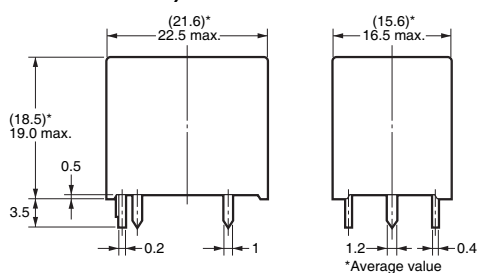
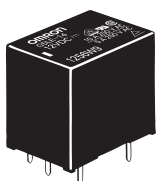
Terminal Arrangement/ Internal Connections

(Bottom View)

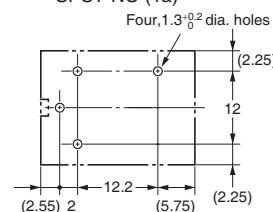


G5LE-14 (-□) (SPDT contact)

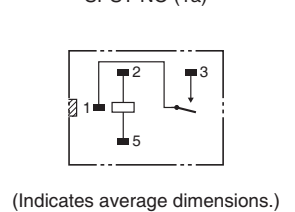
G5LE-1A4 (-□) (SPST-NO contact)



SPST-NO (1a)



SPST-NO (1a)



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 | | 5 to 24 VDC | 10 A, 250 VAC (general use) at 40°C | 6,000 |
| | | | 8 A, 30 VDC (resistive load) at 40°C | |
| | | | TV-3 (N.O only) at 40°C | |
| G5LE-E | SPDT-NO (1a) SPDT (1c) | 5 to 24 VDC | 13 A, 120 VAC, (resistive load) (NO only) at 85°C | 30,000 |
| | | | 10 A, 250 VAC, (general use) at 40°C | |
| | | | TV-8 (NO only) at 40°C | 25,000 |
| | | | 16 A, 250 VAC, (general use) (NO only) at 40°C | |
| | | | 12 A, 250 VAC, (general use) (NC only) at 40°C | 30,000 |

CSA Certified: (File No. LR31928)

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|--------|---------------------------|--------------|---|---------------------------|
| G5LE | | 5 to 24 VDC | 10 A, 250 VAC (general use) at 40°C | 6,000 |
| | | | 8 A, 30 VDC (resistive load) at 40°C | |
| | | | TV-3 (N.O only) at 40°C | |
| G5LE-E | SPDT-NO (1a) SPDT (1c) | 5 to 24 VDC | 13 A, 120 VAC, (resistive load) (NO only) at 85°C | 30,000 |
| | | | 10 A, 250 VAC, (general use) at 40°C | |
| | | | TV-8 (NO only) at 40°C | 25,000 |
| | | | 16 A, 250 VAC, (general use) (NO only) at 40°C | |
| | | | 12 A, 250 VAC, (general use) (NC only) at 40°C | 30,000 |

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

| Model | Contact form | Coil ratings | Contact ratings | Number of test operations |
|--------|---------------------------|---------------|--|---------------------------|
| G5LE | SPDT-NO (1a) SPDT (1c) | 5, 12, 24 VDC | 10 A, 250 VAC (cosφ = 1) 85°C | 50,000 |
| G5LE-E | | | 16 A, 250 VAC (cosφ = 1) (NO only), 1s ON/5s OFF, 85°C | |

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

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

Precautions

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

Please check each region's Terms & Conditions by region website.

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Electronic and Mechanical Components Company

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