

**A Cubic, Single-pole 10-A
Power Relay**
**Single-pole 10A 35VDC, 0.8mm
contact gap: G5LE-G**
Single-pole 16A 250VAC: G5LE-E

- ROHS compliant.
- Sub-miniature ‘sugar cube’ relay with universal terminal footprint.
- Conforms to EN 61810-1, UL508, CSA22.2.
- Tracking resistance: CTI>250 (-VD, -E and -G types).
- UL class-F coil insulation model available (UL class-B coil insulation for standard model).
- Withstands impulse of up to 4,500 V.
- 400-mW and 360-mW coil power consumption types available.
- Pre-soldered terminals.



Ordering Information

| Enclosure Rating | Contact Form | Contact Material | |
|------------------|--------------|--|--|
| | | AgSnO ₂ | AgSnIn |
| Flux protection | SPDT | G5LE-1 G5LE-1-VD G5LE-1-CF | G5LE-1-ASI G5LE-1-ASI-VD G5LE-1-ASI-CF |
| | SPST-NO | G5LE-1A G5LE-1A-VD G5LE-1A-CF | G5LE-1A-ASI G5LE-1A-ASI-VD G5LE-1A-ASI-CF |
| Fully sealed | SPDT | G5LE-14 G5LE-14-VD G5LE-14-CF | G5LE-14-ASI G5LE-14-ASI-VD G5LE-14-ASI-CF |
| | SPST-NO | G5LE-1A4 G5LE-1A4-VD G5LE-1A4-CF | G5LE-1A4-ASI G5LE-1A4-ASI-VD G5LE-1A4-ASI-CF |

PCB Power Relay – G5LE

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

Example: G5LE-1 12 VDC

_____ Rated coil voltage

Model Number Legend

G5LE - - - - - - - - **VDC**
 1 2 3 4 5 6 7 8 9 10

1. Number of Poles

1: 1 pole

2. Contact Form

None: SPDT

A: SPST-NO

3. Enclosure ratings

None: Flux protection

4: Fully sealed

(not applicable with -E and -G versions)

4. Contact Material

None: AgSnO₂

(AgSnIn for -E and -G versions)

ASI: AgSnIn

5. Insulation System

None: Class B

(Class F for -E and -G versions)

CF: Class F (UL and CSA only)

6. Coil Power Consumption/Coil Characteristic

None: Approx. 400 mW

(Approx 700mW applicable with -G versions)

36: Approx. 360 mW

(not applicable for -G version)

7. Classification

G: 0.8mm contact gap type

E: High capacity type

8. Approved Standards

None: UL, CSA, TÜV

VD: UL, CSA, TÜV and VDE

(Not applicable with "-CF.", -E and -G version)

9. Packaging

None: Standard polystyrene tray

SP: Anti-static tube packaging

10. Rated Coil Voltage

5, 9, 12, 24, 48 VDC

Specifications

■ Coil Ratings

700-mW Type (G5LE-G)

| Rated voltage | 9VDC | 12VDC | 20VDC | 24VDC |
|----------------------|--|---------|---------|---------|
| Rated current | 77.8mA | 58.3mA | 35.0mA | 29.2mA |
| Coil resistance | 115.7 Ω | 205.7 Ω | 571.4 Ω | 822.9 Ω |
| Must operate voltage | 75% of rated voltage (max) | | | |
| Must release voltage | 10% of rated voltage (min) | | | |
| Max. voltage | 120% of rated voltage at 85°C, 150% of rated voltage at 23°C | | | |
| Power consumption | Approx 700mW | | | |

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

400-mW Type

| Rated voltage | 5 VDC | 9 VDC | 12 VDC | 24 VDC | 48 VDC |
|----------------------|--|-------|---------|---------|---------|
| Rated current | 79.4 mA | 45 mA | 33.3 mA | 16.7 mA | 8.33 mA |
| Coil resistance | 63 Ω | 200 Ω | 360 Ω | 1,440 Ω | 5,760 Ω |
| Must operate voltage | 75% max. of rated voltage | | | | |
| Must release voltage | 10% min. of rated voltage | | | | |
| Max. voltage | 130% of rated voltage at 85°C, 170% of rated voltage at 23°C | | | | |
| Power consumption | Approx. 400 mW | | | | |

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

PCB Power Relay – G5LE

360-mW Type

| Rated voltage | 5 VDC | 9 VDC | 12 VDC | 24 VDC | 48 VDC |
|----------------------|--|-------|--------|---------|---------|
| Rated current | 72 mA | 40 mA | 30 mA | 15 mA | 7.5 mA |
| Coil resistance | 70 Ω | 225 Ω | 400 Ω | 1,600 Ω | 6,400 Ω |
| Must operate voltage | 75% max. of rated voltage | | | | |
| Must release voltage | 10% min. of rated voltage | | | | |
| Max. voltage | 130% of rated voltage (at 85°C), 170% of rated voltage (at 23°C) | | | | |
| Power consumption | 360 - 400mW | | | | |

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

■ Contact Ratings

| | Standard | G5LE-G | G5LE-E/-E-36 |
|--------------------------------|--|-----------------------------------|-----------------------------------|
| Load | Resistive load ($\cos\phi = 1$) | Resistive load ($\cos\phi = 1$) | Resistive load ($\cos\phi = 1$) |
| Rated Load | 10A at 120VAC; 8A at 30VDC; 10A at 250VAC (12+24VDC) | 10A at 35VDC | 16A at 250VAC |
| Contact material | AgSnO ₂ (AgSnIn optional) | AgSnO ₂ | AgSnIn |
| Rated Carry Current | 10 A | 10A | 16A |
| Max. switching voltage | 250VAC; 125VDC (30VDC when UL/USA standard is applied) | 35VDC | 250VAC |
| Max. switching current | AC: 10 A; DC: 8 A | DC: 10A | AC: 16A |
| Max. switching power | 1,200 VA, 240 W | 350W | 4000VA |
| Failure rate (reference value) | 100 mA at 5 VDC | 100mA at 5VDC | 100mA at 5VDC |

■ 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 at rated load |
| Insulation resistance | 100 MΩ min. (at 500 VDC) |
| Dielectric strength | 2,000 VAC, 50/60 Hz for 1 min between coil and contacts 750 VAC, 50/60 Hz for 1 min between contacts of same polarity 1,500VAC (for suffix -G) 50/60Hz for 1 min between contacts of same polarity |
| Impulse withstand voltage | 4,500 V (1.2 50 μs) between coil and contacts |
| Insulation Distance | Creepage (Typ) 3.3 mm |
| | Clearance (Typ) 2.7 mm |
| Tracking Resistance (CTI) | 250 V |
| 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 |
| Endurance | Mechanical: 10,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr) (for standard type) 36,000 operations min. (10 A at 250 VAC) 100,000 operations min (at 1,800 operations/hr, 12A 250VAC) - applicable for G5LE-1-E normally open contact only) |
| Ambient temperature | Operating: -40°C to 85°C (with no icing) |
| Ambient humidity | Operating: 5% to 85% |
| Weight | Approx. 12 g |

■ Approved Standards

UL508, UL114, UL478, UL325, UL873, UL1409, UL1950 (File No. E41643)/CSA C22.2 No. 14, No. 1 (File No. LR34815)

| Model | Coil ratings | Contact ratings |
|-------|--------------|--|
| G5LE | 3 to 48 VDC | 12 A, 120 VAC (resistive load 30,000 cycles) 10 A, 250 VAC (general use) 10 A, 125 VAC (general use 100,000 cycles) 8 A, 30 VDC (resistive load) 6 A, 277 VAC (general use) NO: 1/6 hp, 120 VAC (50,000 cycles) 1/3 hp, 125 VAC, 70°C 30K with Class 130B system 65°C 30K with Class 105 Coil insulation system TV-3, 120 VAC TV-5, 120 VAC (For ASI only) NC: 1/8 hp, 120 VAC (50,000 cycles) 1/10 hp, 120 VAC (50,000 cycles) |

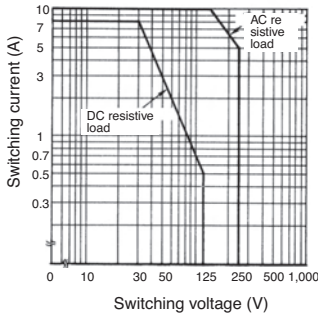
EN 61810-1, EN 60255, IEC (VDE TUV Reg No. R9151267, VDE Reg No. 6850UG)

| Model | Coil ratings | Contact ratings |
|-------|--|---|
| G5LE | Approx. 400 mW 3, 5, 6, 9, 12, 24, 48 VDC Approx. 360 mW 5, 6, 12, 24, 48 VDC | 10A, 250 VAC (resistive load 50,000 cycles at 85°C) 5A, 30VDC 2.5A, 250VAC (cosφ = 0.4) |

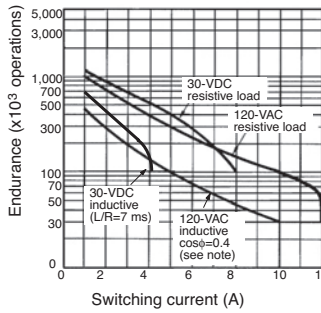
Engineering Data

For standard type

Maximum Switching Power
G5LE

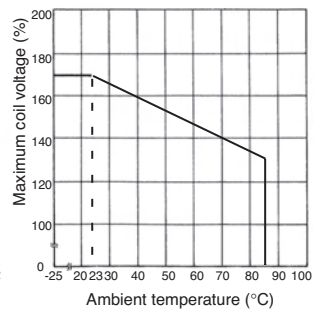


Endurance
G5LE



Note: Same curve as for 250-VAC resistive load

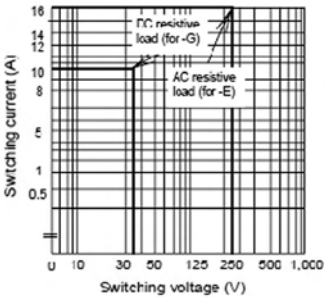
Ambient Temperature vs. Maximum Coil Voltage



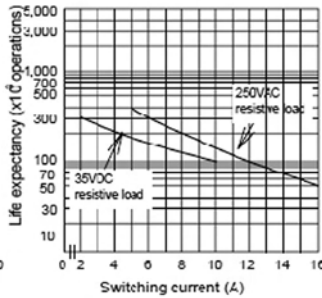
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

For suffix -E and -G

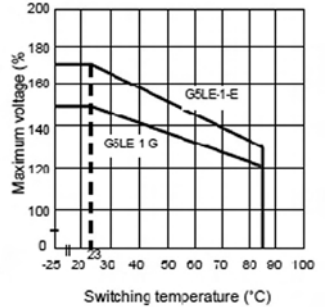
Max. Switching Capacity



Life Expectancy




Ambient Temp. Vs Max. Voltage



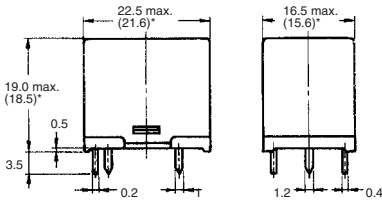
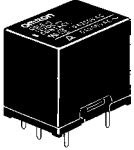
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage not a continuous voltage

Dimensions

Note: 1. All units are in millimetres unless otherwise indicated.

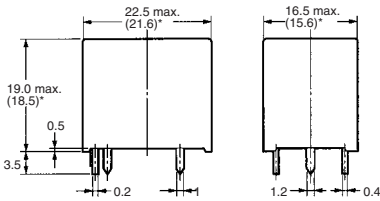
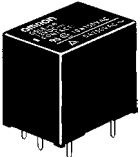
2. Orientation marks are indicated as follows:  

G5LE-1
G5LE-14
G5LE-1-E
G5LE-1-G



*Average value

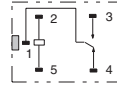
G5LE-1A
G5LE-1A4
G5LE-1A-E
G5LE-1A-G



*Average value

Terminal Arrangement/Internal Connections (Bottom View)

SPDT

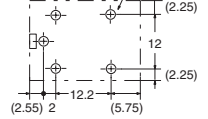


Mounting Holes (Bottom View)

Tolerance: ± 0.1 mm unless specified

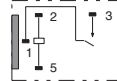
SPDT

Five, $1.3^{+0.2}$ dia. holes



Terminal Arrangement/Internal Connections (Bottom View)

SPST-NO

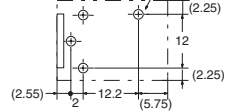


Mounting Holes (Bottom View)

Tolerance: ± 0.1 mm unless specified

SPST-NO

Four, $1.3^{+0.2}$ dia. holes



ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.

To convert millimetres into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.