

# 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

G5LE

### 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 <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)	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

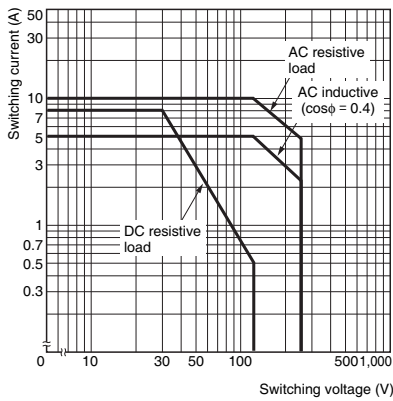
\*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.

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

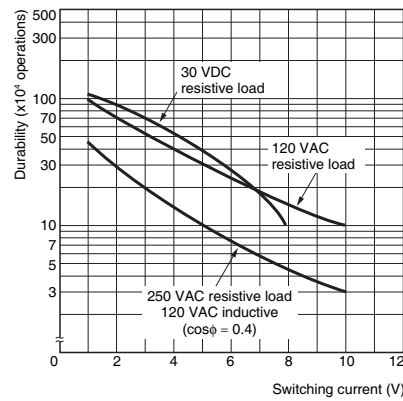
\*3. This value was measured at a switching frequency of 120 operations/min.

## Engineering Data

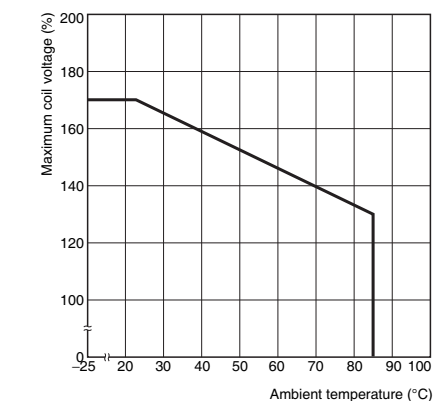
### Maximum Switching Capacity



### Durability

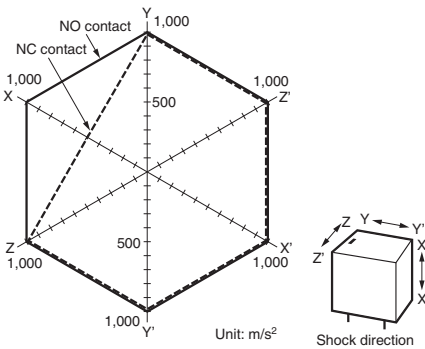


### Ambient Temperature vs. Maximum Coil Voltage



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

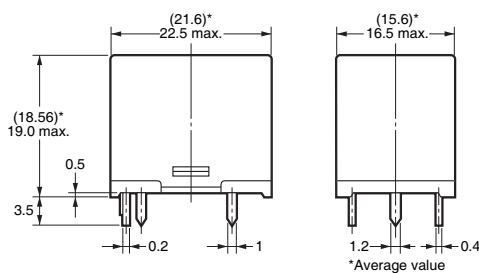
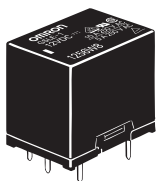
Test Conditions: Shock was applied 3 times in each direction with and without excitation and the level at which the shock caused malfunction was measured.

Rating: 100  $\text{m/s}^2$

## Dimensions

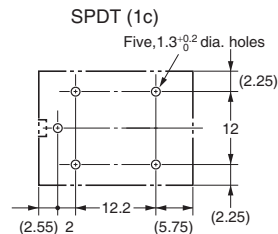
### G5LE-1 (-□) (SPDT contact)

### G5LE-1A (-□) (SPST-NO contact)



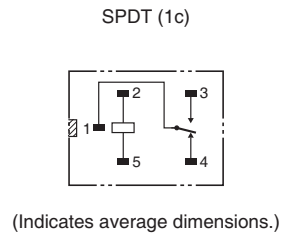
### PCB Mounting Holes

(Bottom View)  
Tolerance:  $\pm 0.1$  mm unless specified



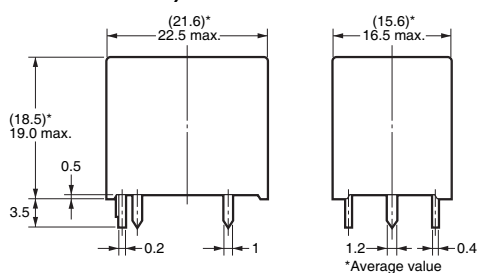
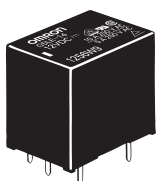
### Terminal Arrangement/ Internal Connections

(Bottom View)

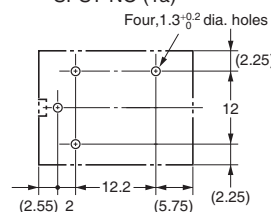


### G5LE-14 (-□) (SPDT contact)

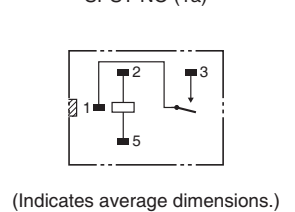
### G5LE-1A4 (-□) (SPST-NO contact)



### 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.

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