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

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

■Application Examples

- Home appliances
- OA equipments
- Vending machines

■Ordering Information

Terminal Shape	Classification	Enclosure rating / Contact form	Flux protection Model	Flux protection Rated coil voltage	Fully sealed Model	Fully sealed Rated coil voltage	Minimun packing unit
PCB terminals	Standard	SPDT (1c)	**G5LE-1**	5 VDC	**G5LE-14**	5 VDC	100 pcs/tray
				12 VDC		12 VDC	
				24 VDC		24 VDC	
			G5LE-1-CF	5 VDC	**G5LE-14-CF**	5 VDC	
				12 VDC		12 VDC	
				24 VDC		24 VDC	
		SPST-NO (1a)	**G5LE-1A**	5 VDC	**G5LE-1A4**	5 VDC	
				12 VDC		12 VDC	
				24 VDC		24 VDC	
			G5LE-1A-CF	5 VDC	**G5LE-1A4-CF**	5 VDC	
				12 VDC		12 VDC	
				24 VDC		24 VDC	
	High capacity	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

Operating coil

Rated voltage (V)		Rated current (mA)	Coil resistance (Ω)	Operating voltage (V)	Release voltage (V)	Max. allowable voltage (V)	Power consumption (mW)
DC	5	79.4	63	75% max.	10% min.	170% (at 23°C)	Approx. 400
	12	33.3	360				
	24	16.7	1,440				

Note 1. The rated current and coil resistance are the values when the coil temperature is 23°C and the tolerance is ±10%.
2. The operating characteristics are the values when the coil temperature is 23°C.
3. The maximum allowable voltage is the maximum voltage value that can be applied to the relay coil.

Opening/Closing part (Contact part)

Item \ Classification / Load	Standard type	
	Resistive load	Inductive load (cosϕ=0.4)
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
Rated carry current	10 A	
Max. switching voltage	250 VAC, 125 VDC (30 VDC when UL/CSA standard is applied)	
Max. switching current	10 A	5 A

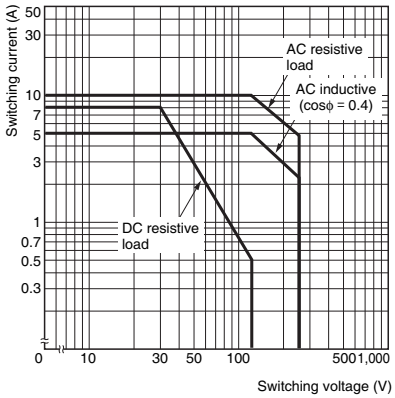
■Characteristics

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/s²	
	Malfunction	100 m/s²	
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	

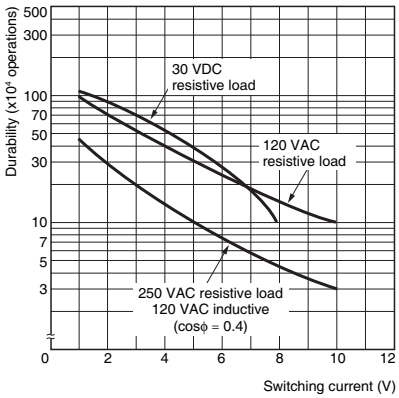
Note. The data given above are initial values
*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.
*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.
*3. This value was measured at a switching frequency of 120 operations/min.

■Engineering Data

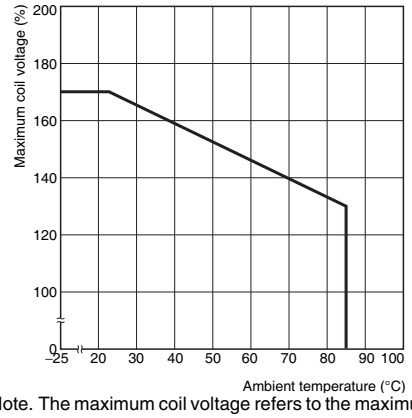
●Maximum Switching Capacity



●Durability

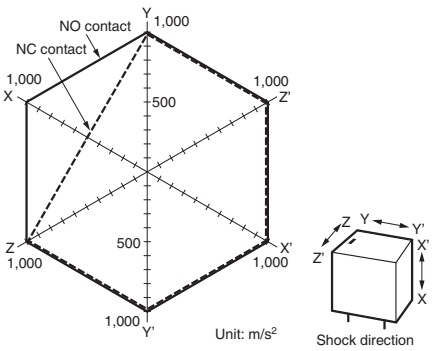


●Ambient Temperature vs. Maximum Coil Voltage



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

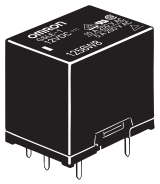
●Shock Malfunction

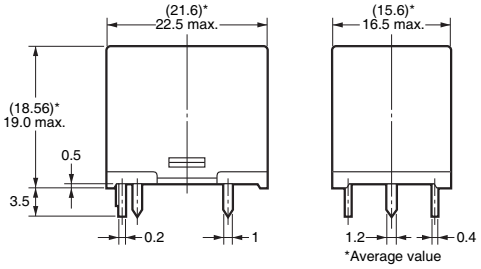


Number of Relays:5 pcs
Test Conditions: Shock was applied 3 times in each direction with and without excitation and the level at which the shock caused malfunction was measured.
Rating: 100 m/s²

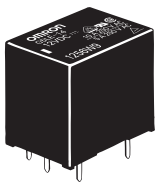
■Dimensions

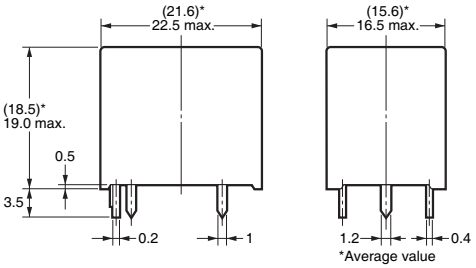
G5LE-1 (-□) (SPDT contact)
G5LE-1A (-□) (SPST-NO contact)





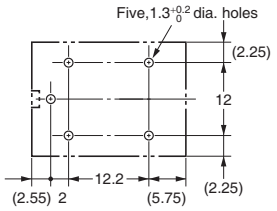
G5LE-14 (-□) (SPDT contact)
G5LE-1A4 (-□) (SPST-NO contact)





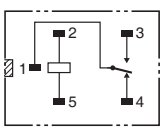
PCB Mounting Holes
(Bottom View)
Tolerance: ±0.1 mm unless specified

SPDT (1c)



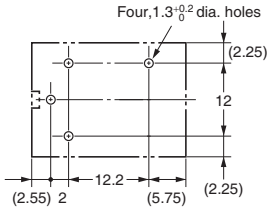
Terminal Arrangement/ Internal Connections
(Bottom View)

SPDT (1c)

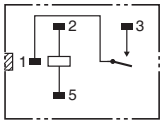


(Indicates average dimensions.)

SPST-NO (1a)



SPST-NO (1a)



(Indicates average dimensions.)

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	SPDT-NO (1a) SPDT (1c)	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	25,000
G5LE-E			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	30,000
			12 A, 250 VAC, (general use) (NC only) at 40°C	

CSA Certified: (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G5LE	SPDT-NO (1a) SPDT (1c)	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	25,000
G5LE-E			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	30,000
			12 A, 250 VAC, (general use) (NC only) at 40°C	

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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Cat. No. K100-E1-09
0622 (0207)