

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.
- cULus, EN standards approved and conforms to Electrical Appliance and Material Safety Law (300 V max.).
- Conforms to IEC/EN60079-1, IEC/EN60079-15 (Except -CF Models).
(IEC/EN) 60079-1 clause 15.5 Enclosed-break devices (Group IIA) testing passed.
(IEC/EN) 60079-15 clause 11.2 Sealed devices testing passed.

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 (cULus 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		Flux protection		Fully sealed		Minimum packing unit
		Contact form		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	
			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	75% max.	10% min.	170% (at 23°C)	Approx. 400
	12	33.3				
	24	16.7				

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	Standard type		High capacity type
	Load	Resistive load	Inductive load (cosφ=0.4)	Resistive load
Contact type		Single		Single
Contact material		Ag-alloy (Cd free)		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 (N.O.) 12 A (N.C.) at 120 VAC
Rated carry current		10 A		16 A (N.O.) / 12 A (N.C.)
Max. switching voltage		250 VAC, 125 VDC (30 VDC when cULus/IEC/VDE standard is applied)		120 VAC
Max. switching current		10 A	5 A	16 A

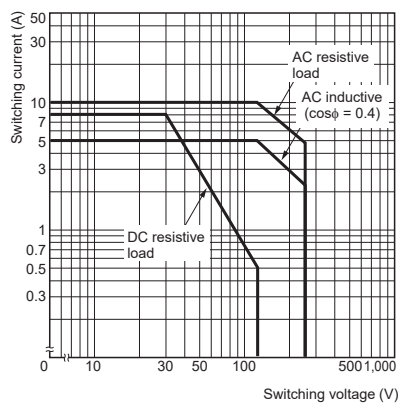
■Characteristics

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/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	

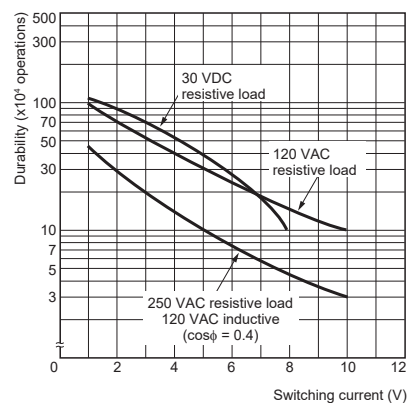
Note. The data given above are initial values
*1. Measurement conditions: 5 VDC, 1 A, voltage drop method.
*2. Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.
*3. This value was measured at a switching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

Engineering Data

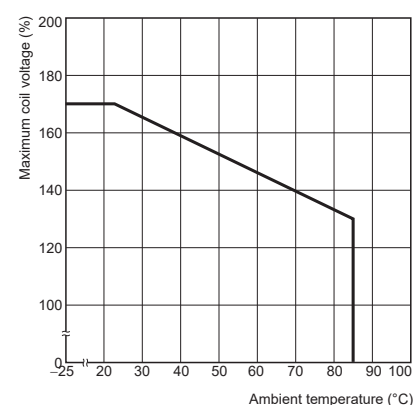
Maximum Switching Capacity



Durability

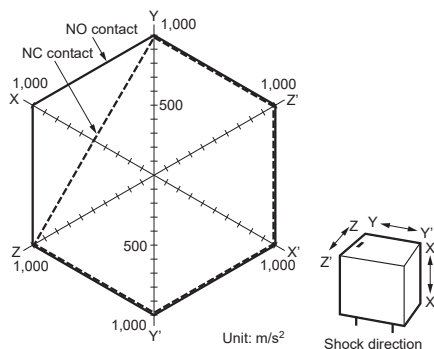


Ambient Temperature vs. Maximum Coil Voltage



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.

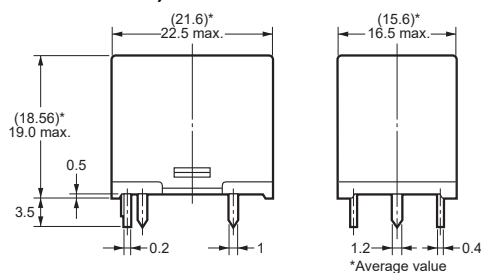
Rating: 100 m/s²

Dimensions

CAD Data marked products, 2D drawings and 3D CAD models are available. For CAD information, please visit our website, which is noted on the last page.

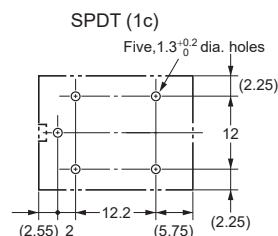
G5LE-1 (□) (SPDT contact)

G5LE-1A (□) (SPST-NO contact)

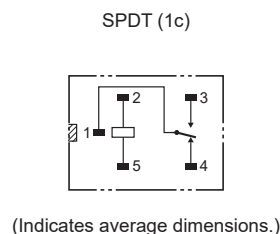


PCB Mounting Holes

(Bottom View)
Tolerance: ±0.1 mm unless specified

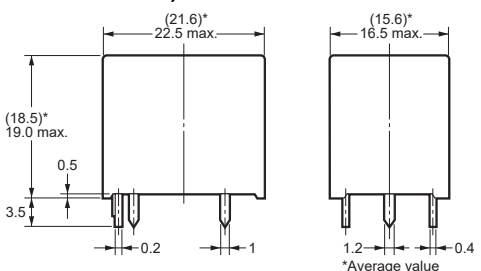


Terminal Arrangement/ Internal Connections (Bottom View)

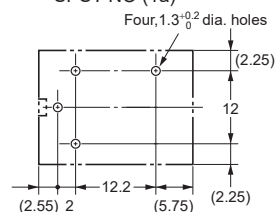


G5LE-14 (□) (SPDT contact)

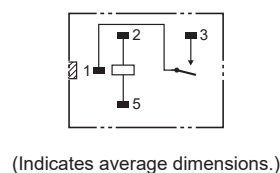
G5LE-1A4 (□) (SPST-NO contact)



SPST-NO (1a)



SPST-NO (1a)



Note. Orientation marks are indicated as follows: □

CAD Data

■Approved Standards

UL/C-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				

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

●Regarding IEC/EN60079-1, -15

Type of protection: Enclosed-break devices (Group IIA*) (IEC/EN) 60079-1 clause 15.5 testing passed.

Type of protection: Sealed devices (IEC/EN) 60079-15 clause 11.2 testing passed.

*Gas protection group definition:

- Group IIA: (55 ± 0.5) % hydrogen/air at atmospheric pressure;
- Group IIB: (37 ± 0.5) % hydrogen/air at atmospheric pressure;
- Group IIC: (40 ± 1) % hydrogen, (20 ± 1) % oxygen and the remainder nitrogen at atmospheric pressure or alternatively (27.5 ± 1.5) % hydrogen/air at an overpressure at a pressure equal to 1.5 times atmospheric pressure.

Please contact your local OMRON representative for more details on the standards.

■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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