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.).



■Model Number Legend

G5LE-□□□

1 2 3

1. Number of Poles

1: 1-pole

2. Contact Form

None: SPDT (1c) SPST-NO (1a)

3. Enclosure rating

None: Flux protection Fully sealed











■Application Examples

- Home appliances
- OA equipments
- Vending machines

■Ordering Information

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

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

Example: G5LE-1 5 VDC

Rated coil voltage

■Ratings

●Coil

Rated voltage	Rated current (mA)	Coil resistance (Ω)	Must operate voltage (V) Must release voltage (V) (V)		Max. voltage (V)	Power consumption (mW)
5 VDC	79.4	63			170%	
12 VDC	33.3	360	75% max.	10% min.	at 23°C	Approx. 400
24 VDC	16.7	1 440	1		ai 23 C	

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance

- 2. The operating characteristics are measured at a coil temperature of 23°C.
- 3. The "Max. voltage" is the maximum voltage that can be applied to the relay coil.

●Contacts

Item	Load	Resistive load	Inductive lead (cos		
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			
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

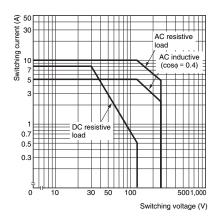
Dielectric strength Between coil and contacts of the same polarity	Contact res	istance *1	100 mΩ max.		
Insulation resistance *2 100 MΩ min.	Operate tim	е	10 ms max.		
Between coil and contacts Between contacts of the same polarity	Release tim	e	5 ms max.		
Dielectric strength	Insulation re	esistance *2	100 MΩ min.		
Strength Between contacts of the same polarity Impulse withstand voltage Vibration resistance Shock resistance Durability Destruction Tailure rate (P level) (reference value) *3 Ambient operating temperature Strength Between contacts 750 VAC, 50/60 Hz for 1 min polarity 4,500 V (1.2×50 μs) 4,500 V (1.2×50 μs) 4,500 V (1.2×50 μs) 4,500 V (1.2×50 μs) 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) 10.000 m/s² 10.000,000 operations min. (at 18,000 operations/hr) 100 mA at 5 VDC -25°C to 85°C (with no icing or condensation) Ambient operating humidity 35% to 85%	Dialoctria	coil and			
withstand voltage 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) Shock resistance Destruction purability 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) Malfunction resistance Destruction purability 1,000 m/s² Mechanical flectrical 10,000,000 operations min. (at 18,000 operations/hr) Electrical 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%		contacts of the same			
Vibration resistance Malfunction Shock Destruction Tesistance Malfunction Shock Tesistance Malfunction Durability Mechanical Electrical Failure rate (P level) (reference value) *3 Ambient operating temperature Destruction 10.75 mm single amplitude (1.5 mm double amplitude) 10.00 m/s² 10.000,000 operations min. (at 18,000 operations min. (at 18,000 operations/hr) 100,000 operations min. (at 1,800 operations/hr) 25°C to 85°C (with no icing or condensation) Ambient operating humidity 35% to 85%	withstand	coil and	4,500 V (1.2×50 μs)		
Malfunction 0.75 mm single amplitude (1.5 mm double amplitude) Shock resistance Malfunction 1,000 m/s² Mechanical 100 m/s² Mechanical 100,000,000 operations min. (at 18,000 operations/hr) Electrical 100,000 operations min. (at 1,800 operations/hr) Failure rate (P level) (reference value) *3 Ambient operating temperature - 25°C to 85°C (with no icing or condensation) Ambient operating humidity 35% to 85%	Vibration	Destruction	0.75 mm single amplitude		
Tesistance Malfunction 100 m/s² Mechanical 10,000,000 operations min. (at 18,000 operations min. (at 1,800 operations min. (at 1,800 operations) min. (at 1	resistance	Malfunction	0.75 mm single amplitude		
Durability Mechanical 10,000,000 operations min. (at 18,000 operations/hr)	Shock	Destruction	1,000 m/s ²		
Durability Mechanical (at 18,000 operations/hr)	resistance	Malfunction	100 m/s ²		
Failure rate (P level) (reference value) *3 Ambient operating temperature Failure rate (P level) (reference value) *3 Ambient operating temperature -25°C to 85°C (with no icing or condensation) Ambient operating humidity 35% to 85%	Durahility	Mechanical	(at 18,000 operations/hr)		
(reference value) *3 Ambient operating temperature -25°C to 85°C (with no icing or condensation) Ambient operating humidity 35% to 85%					
Ambient operating temperature (with no icing or condensation) Ambient operating humidity 35% to 85%		'	100 mA at 5 VDC		
humidity 35% to 85%			(with no icing or		
Weight Approx. 12 g	humidity	erating			
<u> </u>	Weight		Approx. 12 g		

Note. The data given above are initial values

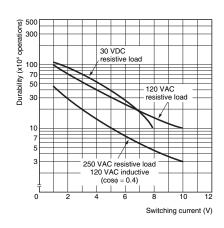
- Measurement conditions: 5 VDC, 1 A, voltage drop method.
- Measurement conditions: The insulation resistance was measured with a 500 VDC megohmmeter at the same locations as the dielectric strength was measured.
- This value was measured at a switching frequency of 120 operations/min.

■Engineering Data

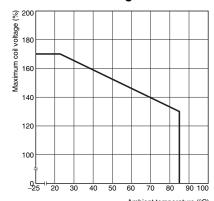
Maximum Switching Capacity



Durability

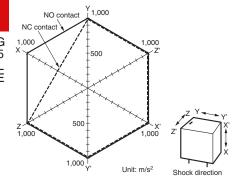


Ambient Temperature vs. **Maximum Coil Voltage**



Ambient temperature (°C) 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

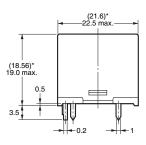
was measured. 100 m/s²

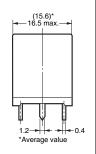
Rating:

■Dimensions

G5LE-1 G5LE-1A

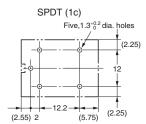






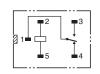
PCB Mounting Holes (Bottom View) Tolerance: ±0.1 mm unless

specified



Terminal Arrangement/ Internal Connections (Bottom View)

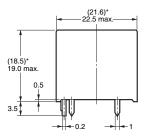
SPDT (1c)

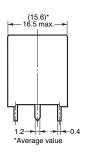


(Indicates average dimensions.)

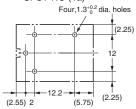
G5LE-14 G5LE-1A4







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)	3 to 48 VDC	10 A, 250 VAC (general use) at 40°C 8 A, 30 VDC (resistive load) at 40°C TV-3 (N.O only) 40°C	6,000

CSA Certified: (File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
G5LE	SPDT-NO (1a) SPDT (1c)	3 to 48 VDC	10 A, 250 VAC (general use) at 40°C 8 A, 30 VDC (resistive load) at 40°C TV-3 (N.O only) 40°C	6,000

VDE EN/IEC Certified: ____ (File 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) 70°C	20,000

TÜV EN/IEC Certified: △ (File No. R50158258)

Model	Contact form	Coil ratings	Contact ratings	Number of test operations
			2.5 A, 250 VAC (cosφ = 0.4) 40°C	100,000
G5LE	SPDT-NO (1a) SPDT (1c)	5, 12, 24 VDC	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.

• Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product. • Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Contact: www.omron.com/ecb

Note: Do not use this document to operate the Unit.

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Electronic and Mechanical Components Company

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