## OMRON

# PCB Relay

#### A Cubic, Single-pole 10A Power Relay

- Economical cube relay with universal terminal footprint
- Conforms to VDE0435, CQC
- UL recognized/ CSA certified.
- High switching power: 10A @ 250VAC
- Withstands impulse of up to 4,500V
- Coil power consumption: 360mW
- UL Class F coil insulation type also available
- Tracking resistance: CTI>250
- RoHS Compliant

# **Ordering Information**



Туре	Contact form	Enclosure ratings	Model	
Standard	SPST-NO (Class A)	Flux protection	G5LA-1A	
		Sealed	G5LA-1A4	
	SPST-NO (Class F)	Flux protection	G5LA-1A-CF	
		Sealed	G5LA-1A4-CF	
	SPDT (Class A)	Flux protection	G5LA-1	
		Sealed	G5LA-14	
	SPDT (Class F)	Flux protection	G5LA-1-CF	
		Sealed	G5LA-14-CF	
High-capacity	SPDT (Class A)	Flux protection	G5LA-1-E	
		Sealed	G5LA-14-E	
	SPDT (Class F)	Flux protection	G5LA-1-E-CF	
		Sealed	G5LA-14-E-CF	

Note: When ordering, add the rated coil voltage to the model number. Example: G5LA-1  $\underline{\text{DC12}}$ 

Rated coil voltage

# Model Number Legend

 $\mathbf{G5LA} - \underbrace{\square}_{1} \underbrace{\square}_{2} \underbrace{\square}_{3} - \underbrace{\square}_{4} - \underbrace{\square}_{5} \mathbf{DC} \underbrace{\square}_{6}$ 

- 1. Number of Poles
  - 1: 1 pole
- 2. Contact Form None: SPDT
- A: SPST-NO
- 3. Enclosure Ratings
- None: flux protection 4: fully sealed

4. Туре

None: Standard E: High Capacity (SPDT only)

- 5. Insulation Class None: Class A CF: Class F
- 6. Rated Coil Voltage 5, 9, 12, 24, or 48

## ■ Coil Ratings

Rated Voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Must operate voltage	Must release voltage	Rated power consumption (W)	Max voltage
5	72	69.4	75% max.	10% min.	Approx. 0.36	130% of rated voltage
9	40	225				at 85°C
12	30	400				170% of rated voltage at 23°C
24	15	1600				ai 20 0
48	10	4800	1		Approx. 0.48	]

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of ±10%.
2. Please avoid ultrasonic cleaning this relay.

# ■ Contact Ratings

Rated load SPST-NO		10 A @ 250 VAC (NO) 10 A @ 24 VDC (NO)		
(resistive)	SPDT	5 A @ 125 VAC (NO/NC) 5 A @ 24 VDC (NO/NC)		
	High-capacity	5 A @ 250 VAC (NO/NC) 5 A @ 24 VDC (NO/NC)		
Rated carry curre	ent	10 A (SPST-NO) 10 A (High-capacity) 5 A (SPDT)		
Max. switching v	oltage	250 VAC 24 VDC		
Max. switching current 10 A SPST-NO				
		5 A SPDT, High-capacity		
Max. switching c	Max. switching capacity         2500 VA, 240 W (NO)         625 VA, 120 W (NC)         1250 VA, 120 W (NO/NC High-capacity)		High-capacity)	
Min. permissible	load	100 mA at DC5V (P level: $\lambda_{60} = 0.1 \times 10^{-6} / \text{ ops})$		
Contact Material		AgSnO <sub>2</sub>		

Note: SPDT type can switch up to 10 A @ 250 VAC/24 VDC Resistive Load on NO contact if there is no load on the NC contact.

## ■ Characteristics

Contact resistance	100 mΩ max.		
Operate time	10 ms max.		
Release time	5 ms max.		
Max. operating frequency	Mechanical: 18,000 operations/hr		
	Electrical: 1,800 operations/hr (under rated load)		
Insulation resistance	1,000 MΩ min. (at 500 VDC)		
Dielectric strength	2,000 VAC, 50/60 Hz for 1 minute between coil and contacts 750 VAC, 50/60 Hz for 1 minute between contacts of same polarity		
Vibration resistance	Destruction: 10 to 55 Hz, 1.5-mm double amplitude		
	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude		
Shock resistance	Destruction: 1,000 m/s <sup>2</sup> (approx. 100G)		
	Malfunction: 100 m/s <sup>2</sup> (approx. 10G)		
Life expectancy	Mechanical: 10,000,000 operations min. (at 18,000 operations/hr under no load)		
	Electrical: 100,000 operations average. (at 1,800 operations/hr under rated load)		
Ambient temperature	Operating:- 40°C to 85°C (with no icing or condensation)		
	Storage: -40°C to 85°C (with no icing or condensation)		
Ambient humidity	Operating: 35% to 85%		
	Storage: 35% to 85%		
Weight	Approx. 7.5g		

Note: 1. Data shown are of initial value.

2. All G5LA Class A rated relays are factory guaranteed to maximum Operating Temperature of 85°C.

UL rated maximum temperature is pending approval for Class B rating.

# ■ Approved Standards

UL Recognized (File No. E41643) & CSA Certified (File No. LR31928) - - Ambient Temp. = 40°C

Model	Coil rating	Contact rating
G5LA	5 to 48 VDC	NO:
		10 A, 277 VAC, general use,100,000 cycles
		10 A, 30 VDC, resistive, 50,000 cycles
		1/2 HP, 125-250VAC, 1,000 cycles
		10 A, 277 VAC, general use, 85°C
		50,000 cycles (-CF type only)
		200 W Tungsten, 125 VAC, 100,000 cycles
		NC:
		10 A, 125 VAC, resistive
		10 A, 277 VAC, general use, 100,000 cycles (-E type only)
		10A, 24 VDC, resistive, 100,000 cycles (-E type only)

#### VDE0435 (EN61810-1)

Model	Coil rating	Contact rating
G5LA	5,9,12,24,48 VDC	NO:
		10 A, 250 VAC, resistive, 85°C
		- flux protection: 50,000 cycles
		- fully sealed: 10,000 cycles
		12 A, 125 VAC, resistive, 85°C, 10,000 cycles
		CO:
		5 A, 250 VAC, resistive, 85°C
		- flux protection: 50,000 cycles
		- fully sealed: 10,000 cycles

#### CQC

Model	Coil rating	Contact rating
G5LA	5,9,12,24,48 VDC	NO:
		10 A, 250 VAC, resistive, 10,000 cycles
		12 A, 120 VAC, resistive, 10,000 cycles

# Dimensions

Note: All units are in millimeters unless otherwise indicated.

## SPDT Models













## SPST-NO Models



Terminal Arrangement/Internal Connections (Bottom View)

SPST-NO



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

SPST-NO



# **Engineering Data**

#### Maximum switching capacity (NO)



Electrical service life NO (Average value)



Note: The 120 VAC resistive load service life curve also applies 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.

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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.



55 E. Commerce Drive, Suite B Schaumburg, IL 60173

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#### 847-882-2288

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PCB Relay **G5LA** 

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