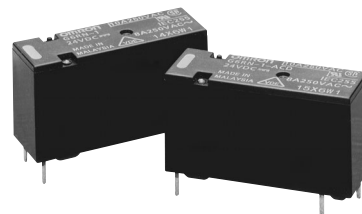


# Power Relay G6RN

## Heavy-duty Miniature Relay

- Incorporates environmentally-friendly, cadmium-free contacts.
- Variety of contact forms: SPDT or SPST-NO (continuous current rating: 8 A).
- Low profile (0.39 W x 1.12 L x 0.59 H inches)
- High dielectric strength of 4 kV with 8 mm creepage/clearance.
- Sealed plastic construction.
- Ideal for switching contactors, solenoids and motors.
- RoHS Compliant.



## Ordering Information

Classification	Structure	Contact material	Contact form	
			SPST-NO	SPDT
Standard	Plastic-sealed	AgNi + gold plating	G6RN-1A	G6RN-1

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

Example: G6RN-1A 24 VDC

Rated coil voltage

## Model Number Legend

G6RN- □ □ □ □ - □  
1 2 3 4 5 6

### 1. Number of poles

1: 1 pole

### 2. Contact form

None: SPDT  
A: SPST-NO

### 3. Contact type

None: Single contact

### 4. Enclosure ratings

None: Plastic-sealed

### 5. Terminals

None: Standard PCB

### 6. Contact material

None: AgNi + gold plating

# Specifications

## ■ Coil Ratings

Rated voltage	5 VDC	6 VDC	12 VDC	24 VDC	48 VDC
Rated current	44 mA	36.7 mA	18.3 mA	9.2 mA	5.2 mA
Coil resistance	114 $\Omega$	164 $\Omega$	655 $\Omega$	2,620 $\Omega$	9,210 $\Omega$
Must operate voltage	70% max. of rated voltage				
Must release voltage	10% min. of rated voltage				
Max. voltage	110% of rated voltage				
Power consumption	Approx. 220 mW				Approx. 250 mW

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of  $\pm 10\%$ .  
2. Operating characteristics are measured at a coil temperature of 23°C.

## ■ Contact Ratings

Contact type	Single contact
Configuration	SPDT, SPST-NO
Contact material	AgNi + gold plating (standard)
Max. switching voltage	250 VAC, 125 VDC
Rated switching current	8 A at 250 VAC 5 A at 30 VDC
Max. switching capacity	2,000 VA, 150 W
Min. permissible load	10 mA, 5 VDC

**Note:** Current value for switching 125 VDC is 0.15 A resistive and 0.1 A inductive (L/R = 7 ms).

## ■ Characteristics

Contact resistance	100 m $\Omega$ max.	
Operate time	Approx. 6 ms	
Release time	Approx. 3 ms	
Max. operating frequency	Mechanical	36,000 operations/hr
	Electrical	360 operations/hr (under rated load)
Insulation resistance	1,000 M $\Omega$ min.	
Dielectric strength	4,000 VAC: between coil and contacts	
	1,000 VAC: between contacts	
Creepage/clearance	8 mm min. between coil and contacts	
Vibration resistance	Malfunction	NO: 10 to 55 Hz, 1.5 mm double amplitude
		NC: 10 to 55 Hz, 0.8 mm double amplitude
Shock resistance	Destruction	1,000 m/s <sup>2</sup> (approx. 100 G)
	Malfunction	100 m/s <sup>2</sup> (approx. 10 G)
Life expectancy	Mechanical	10,000,000 operations min.
	Electrical	Approx. 100,000 operations (see note)
Ambient temperature	Operating	-40°C to 85°C
	Storage	-40°C to 85°C
Ambient humidity	Operating	35% to 85%
Weight	Approx. 9 g	
Protection class	II according to VDE0106 Part 1	
Insulation class	C/250 according to VDE0110	

**Note:** Resistive load test at 250 VAC, 8 A, room temperature with diode.  
Continuous monitoring must be performed to detect contact sticking and short circuit.  
Dielectric strength measured at 500 V for 1 minute with the same polarity.

# Approved Standards

IEC255 (Includes Reinforced Insulation and Spacing Requirements According to IEC65, 335-1, 940, EN60335-1, 60950)

Standard	Contact form	Coil ratings	Contact ratings	Conditions
IEC255-1-00 IEC255-0-20	SPDT SPST-NO	5, 6, 12, 24, 48 VDC	8 A at 250 VAC (cosφ=1) (see note)	Pollution degree: 3 Overvoltage category: II Operating range: class 1 Pick-up class: class C Ambient temperature: -40°C to 85°C

Note: VAC according to IEC417.

## VDE

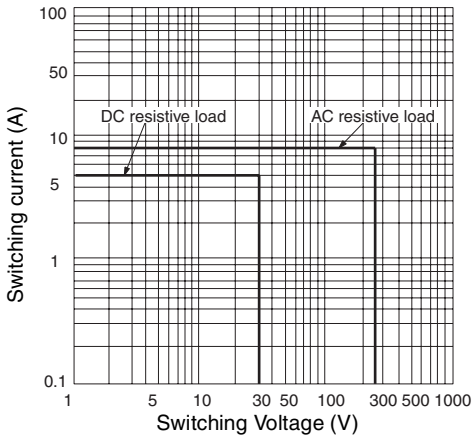
Standard	Contact form	Coil ratings	Contact ratings	Conditions
VDE0435 Part201 VDE0435 Part120	SPDT SPST-NO	5, 6, 12, 24, 48 VDC	8 A at 250 VAC (cosφ=1)	Insulation group according to VDE0110 C/250 Operating range: class 1 Pick-up class: class C Ambient temperature: -40°C to 85°C

UL File No. E41515  
CSA (File No. LR31928)

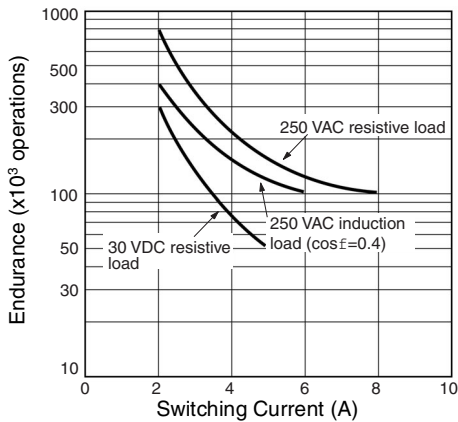
Standard	Contact form	Coil ratings	Contact ratings
UL508	SPDT SPST-NO	5, 6, 12, 24, 48 VDC	250 VAC, 10 A resistive 250 VAC, 8 A resistive, 85°C 30 VDC, 5 A

# Engineering Data

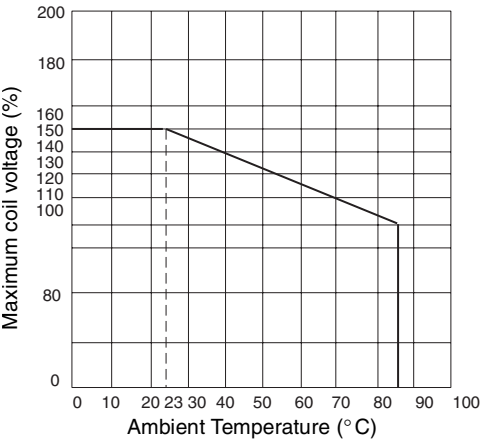
## Maximum Switching Power



## Endurance



## Ambient Temperature vs Maximum Coil Voltage

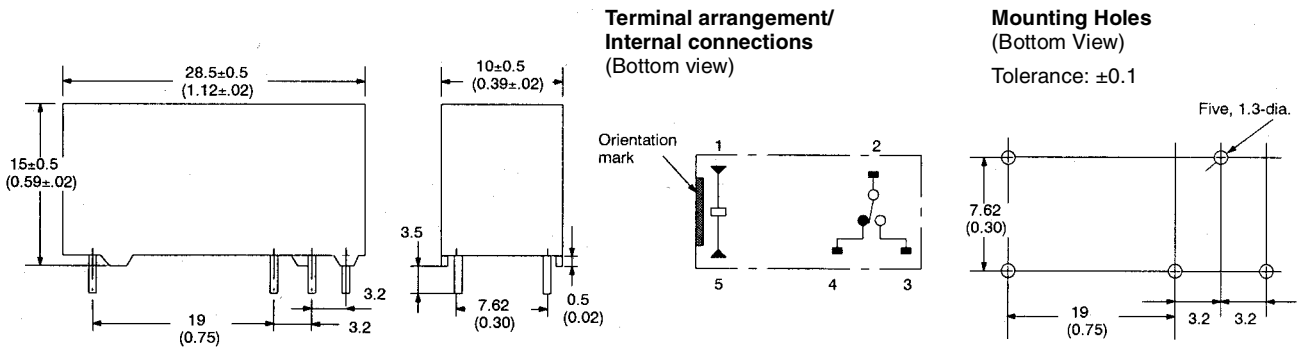


Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

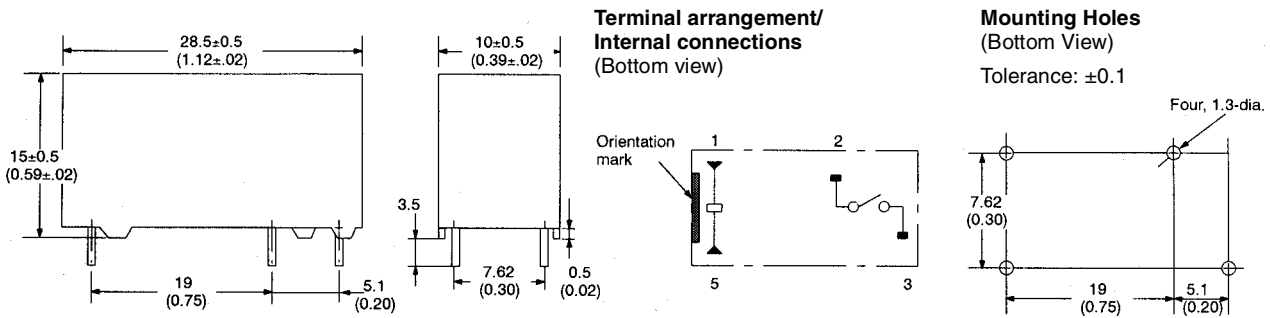
# Dimensions

Unit: mm (inch)

## ■ SPDT Type



## ■ SPST-NO Type



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**OMRON ELECTRONIC  
COMPONENTS LLC**

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

**847-882-2288**

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