



## ■Characteristics

		Standard	High durability
Contact resistance		100 mΩ max.	
Operate time		10 ms max.	
Release time		5 ms max.	
Insulation resistance		1,000 MΩ min. (at 500 VDC)	
Dielectric strength	Between coil and contacts	3,000 VAC, 50/60 Hz for 1 min	
	Between contacts of the same polarity	750 VAC, 50/60 Hz for 1 min	
Surge withstand voltage	Between coil and contacts	6 kV (1.2 × 50 μs)	
Vibration resistance	Destruction	10 to 55 to 10 Hz, 2.5 mm single amplitude (5.0 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 <sup>2</sup>	
	Malfunction	100 m/s <sup>2</sup>	
Durability	Mechanical	20,000,000 operations min. (at 18,000 operations/hr)	
	Electrical	100,000 operations min. (3 A at 250 VAC, 3 A at 30 VDC Resistive load) 80,000 operations min. (5 A at 250 VAC, 5 A at 30 VDC Resistive load) 100,000 operations min. (2 A at 250 VAC, 2 A at 30 VDC Inductive load)	100,000 operations min. (5 A at 250 VAC, Resistive load) 100,000 operations min. (5 A at 30 VDC, Resistive load) 200,000 operations min. (2 A at 250 VAC, Inductive load) 200,000 operations min. (2 A at 30 VDC, Inductive load)
Failure rate (P level) (reference value) *		0.1 mA at 0.1 VDC	
Ambient temperature	Operating	-40°C to +90°C (with no icing or condensation)	
Humidity		5% RH to 85% RH	
Weight		Approx. 3 g	

Note 1. Values in the above table are initial values.

Note 2. The contact resistance is measured with 1 A applied at 5 VDC using a fall-of-potential method.

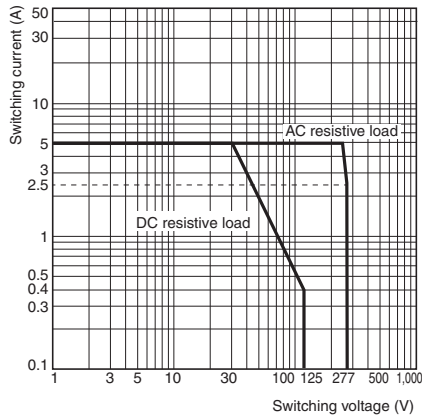
Note 3. The insulation resistance is measured between coil and contacts and between contacts of the same polarity at 500 VDC.

\* This value was measured at a switching frequency of 120 operations/min.

## Engineering Data

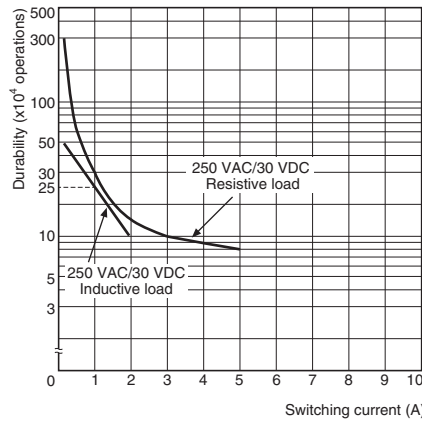
### Maximum Switching Capacity

#### G6DN-1A, G6DN-1A-L



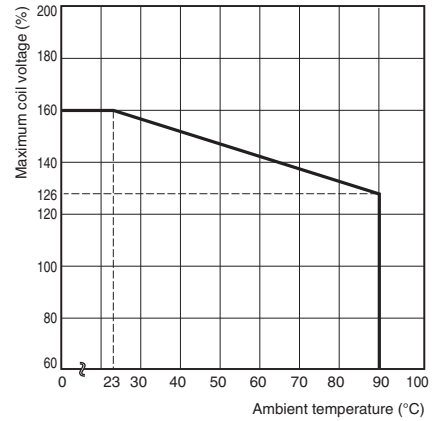
### Durability

#### G6DN-1A



### Ambient Temperature vs. Maximum Coil Voltage

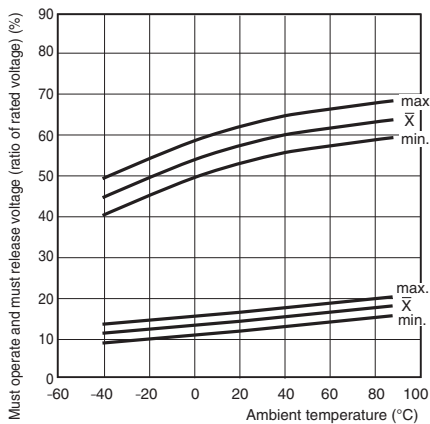
#### G6DN-1A, G6DN-1A-L



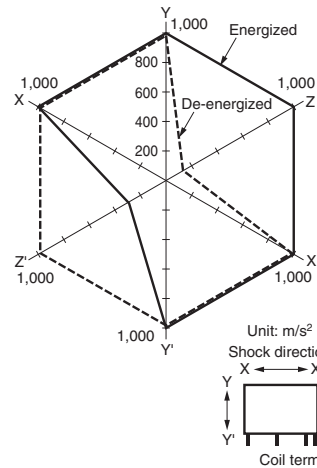
Note. The maximum coil voltage refers to the maximum voltage in a varying range of operating power voltage, not a continuous voltage.

### Ambient Temperature vs. Must Operate and Must Release Voltages

#### G6DN-1A, G6DN-1A-L



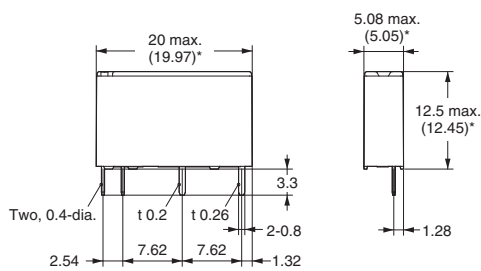
### Shock Malfunction



Sample: G6DN-1A  
 Number of Relays: 5 pcs  
 Test conditions: Impose a shock in the ±X, ±Y, and ±Z directions three times each with the Relay energized to check the shock values that cause the Relay to malfunction.  
 Standard: 100 m/s<sup>2</sup>

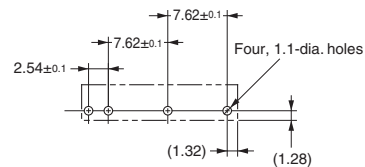
## Dimensions

#### G6DN-1A(-L)

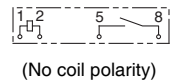


\* Average value

#### PCB Mounting Holes (Bottom View)



#### Terminal Arrangement/ Internal Connections (Bottom View)




## Approved Standards

●The rated values approved by each of the safety standards may be different from the performance characteristics individually defined in this datasheet.

UL/C-UL-approved models  (File No. E41515)

Model	Contact form	Coil ratings	Contact ratings	Operations
G6DN-1A	SPST-NO	4.5 to 24 VDC	5 A at 277 VAC (Resistive) 95°C	6,000
			5 A at 30 VDC (Resistive) 90°C	6,000
			1/10 hp 125 VAC 95°C	1,000
			1/10 hp 277 VAC 95°C	1,000
			D300 120 VAC/240 VAC 95°C	6,000
			C300 120 VAC/240 VAC 95°C	6,000
			R300 125 VDC/250 VDC 95°C	6,000
G6DN-1A-L	SPST-NO	5 to 24 VDC	5 A 250 VAC (Resistive) 95°C	100,000
			2 A 250 VAC (General Use) 95°C	100,000
			2 A 30 VDC (General Use) 95°C	100,000
			1/10 hp 120 VAC 40°C	6,000
			C300 120 VAC/240 VAC 95°C	6,000
			D150 120 VAC 95°C	6,000
			R150 125 VDC 95°C	6,000

Note. CSA certification CSA 22.2 No.14 can be recognized by C-UL.

VDE (EN61810-1)  (Certificate No. 40042696)

Model	Contact form	Coil ratings	Contact ratings	Operations
G6DN-1A	SPST-NO	4.5 to 24 VDC	5 A at 250 VAC (cosφ= 1.0) 90°C	10,000
			5 A at 30 VDC (L/R = 0 ms) 90°C	10,000
G6DN-1A-L	SPST-NO	5 to 24 VDC	5 A 250 VAC (cosφ= 1.0) 90°C	100,000
			2 A 250 VAC (cosφ= 0.4) 90°C	100,000
			2 A 250 VAC (cosφ= 0.6) 90°C	100,000
			5 A 30 VDC (L/R = 0 ms) 90°C	100,000
			2 A 30 VDC (L/R = 7 ms) 90°C	100,000

Clearance distance	3.5 mm min.
Creepage distance	3.6 mm min.
Type of insulation coil-contact circuit open contact circuit	Basic (PD.2) Micro disconnection
Rated Insulation voltage	300 V
Pollution degree	2
Rated voltage system	250 V
Over voltage category	II
Category of protection according to IEC 61810-1	RT III (Sealed)
Insulation material group	I
Tracking resistance according to IEC 60112	CTI 600 V min.
Flammability class according to UL94	V-0
Coil insulation system according to UL	Class B

## 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.

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