

2. Specifications

Characteristics	Item		Specifications		
			1 Form A	1 Form A 1 Form B	2 Form A
Contact	Arrangement		1 Form A	1 Form A 1 Form B	2 Form A
	Contact resistance (Initial)		Max. 30 mΩ (By voltage drop 6 V DC 1A)		
	Contact material		Au-flashed AgSnO <sub>2</sub> type	Au-flashed AgNi type	
Rating	Nominal switching capacity (resistive load)		10 A 250 V AC, 10 A 30 V DC	8 A 250 V AC, 8 A 30 V DC	8 A 250 V AC, 8 A 30 V DC
	Max. switching power (resistive load)		2,500VA, 300 W	2,000 VA, 240 W	2,000 VA, 240 W
	Max. switching voltage		250 V AC, 125 V DC (0.2A)	250 V AC, 125 V DC (0.2A)	250 V AC, 125 V DC (0.2A)
	Max. switching current		10 A	8 A	8 A
	Nominal operating power		200 mW		
	Min. switching capacity (Reference value)*1		10m A 5 V DC		
Electrical characteristics	Insulation resistance (Initial)		Min. 1,000MΩ (at 500V DC) Measurement at same location as "Breakdown voltage" section.		
	Breakdown voltage (Initial)	Between open contacts	1,000 Vrms for 1min. (Detection current: 10mA.)		
		Between contact and coil	4,000 Vrms for 1min. (Detection current: 10mA.)		
	Surge breakdown voltage*2 (Initial)	between contacts and coil	10,000 V		
	Temperature rise (coil) (at 65°C 149°F)		Max. 40°C (By resistive method, nominal voltage applied to the coil; max. switching current)		
	Operate time [Set time] (at 20°C 68°F)		Max. 10 ms (Approx. 5 ms) [10 ms (Approx. 5 ms)] (Nominal coil voltage applied to the coil, excluding contact bounce time.)		
Release time [Reset time] (at 20°C 68°F)		Max. 8 ms (Approx. 3 ms) [10 ms (Approx. 3 ms)] (Nominal coil voltage applied to the coil, excluding contact bounce time.) (without diode)			
Mechanical characteristics	Shock resistance	Functional	Min. 98 m/s <sup>2</sup> (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)		
		Destructive	Min. 980 m/s <sup>2</sup> (Half-wave pulse of sine wave: 6 ms.)		
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.5 mm (Detection time: 10μs.)		
		Destructive	10 to 55 Hz at double amplitude of 3 mm		
Expected life	Mechanical	Min. 5×10 <sup>7</sup> (at 300 times/min.)			
	Electrical	Min. 10 <sup>5</sup> (resistive load, at 20 times/min., at rated capacity)			
Conditions	Conditions for operation, transport and storage*3		Ambient temperature: -40°C to +65°C -40°F to +149°F, Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)		
	Max. operating speed (at rated load)		20 times/min.		
Unit weight			Approx. 5 g .18 oz	Approx. 6 g .21 oz	Approx. 6 g .21 oz

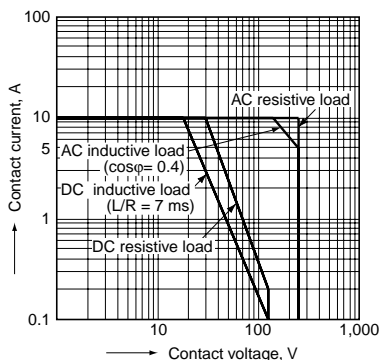
Notes: \*1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

\*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981

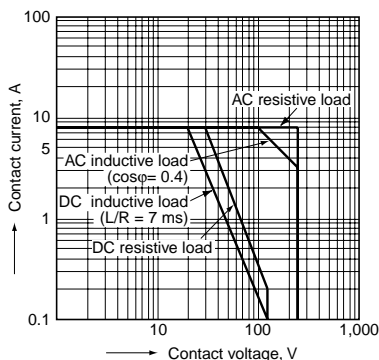
\*3. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.

REFERENCE DATA

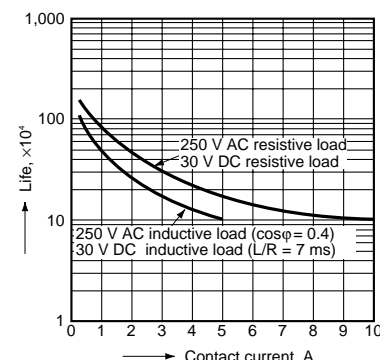
1-(1). Maximum operating power (1 Form A)



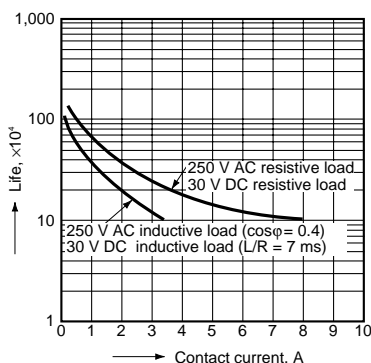
1-(2). Maximum operating power (1 Form A 1 Form B, 2 Form A)



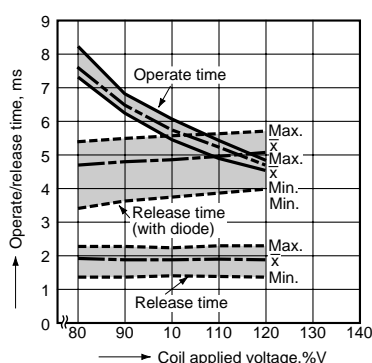
2-(1). Life curve (1 Form A)



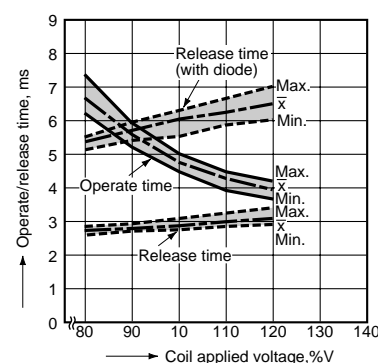
2-(2). Life curve (1 Form A 1 Form B, 2 Form A)



3-(1). Operate/Release time (1 Form A)  
Tested sample: DK1a-24V, 5 pcs.

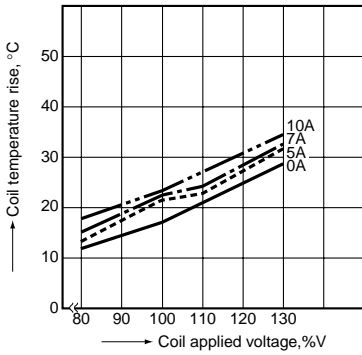


3-(2). Operate/Release time (1 Form A 1 Form B, 2 Form A)  
Tested sample: DK1a1b-12V, 5 pcs.



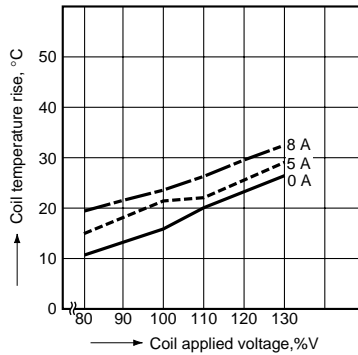
4-(1). Coil temperature rise (1 Form A)

Tested sample: DK1a-12V, 5 pcs.  
Ambient temperature: 30°C 86°F



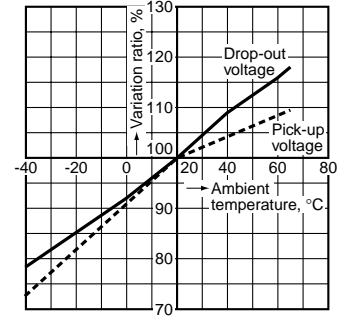
4-(2). Coil temperature rise (1 Form A 1 Form B, 2 Form A)

Tested sample: DK1a1b-12V, 5 pcs.  
Ambient temperature: 20°C 68°F



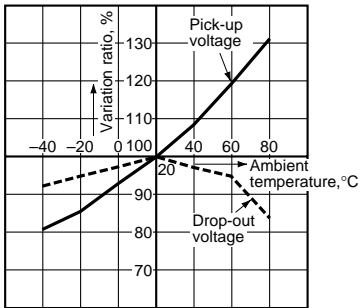
5-(1). Ambient temperature characteristics (1 Form A)

Tested sample: DK1a-24V, 6 pcs  
Ambient temperature: -40°C to +80°C  
-40°F to +176°F



5-(2). Ambient temperature characteristics (1 Form A 1 Form B, 2 Form A)

(1 Form A 1 Form B, 2 Form A)



**DIMENSIONS** (mm inch)

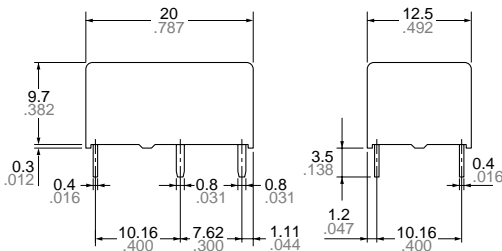
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e/>

1. 1 Form A type

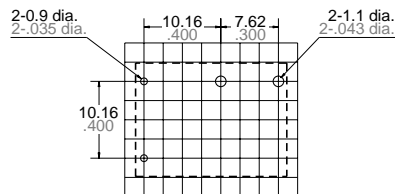
**CAD Data**



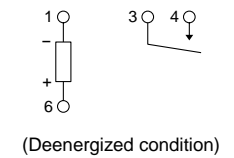
External dimensions  
Single side stable type



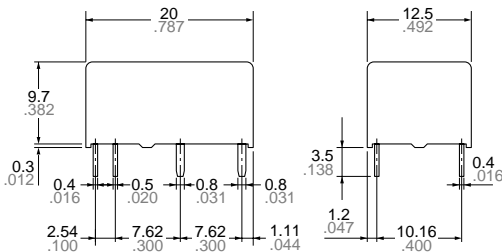
PC board pattern (Bottom view)  
Single side stable type



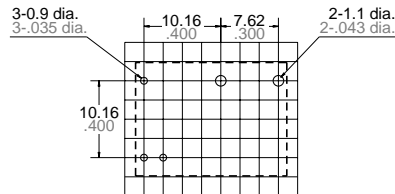
Schematic (Bottom view)  
Single side stable type



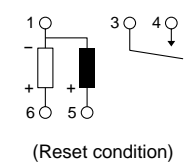
2 coil latching type



2 coil latching type



2 coil latching type



General tolerance:  $\pm 0.3 \pm 0.12$

Tolerance:  $\pm 0.1 \pm 0.04$

Since this is a polarized relay, the connection to the coil should be done according to the above schematic.