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SLIM TYPE POWER RELAY



Panasonic

**JK RELAYS** 



# **FEATURES**

- Compact & Slim design: 11.0 mm (length) × 21.4 mm (width) × 15.7 mm (height) (.433×.843×.618 inch)
- High capacity type (8 A) available
- Surge resistance: Min. 8,000 V between contact and coil
- · High sensitivity: 200 mW nominal operating power
- · Sealed type available
- VDE, TÜV, SEMKO also approved

## **SPECIFICATIONS**

## Contact

Туре		Standard type	High capacity type		
Arrangemen	Arrangement		1 Form A		
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)		100 mΩ			
Contact material		Silver alloy			
Rating (resistive load)	Nominal switching capacity	3 A 30 V DC 3 A 125 V AC	5 A 30 V DC 8 A 125 V AC		
	Max. switching power	90 W, 500 VA	150 W, 1,250 V A		
	Max. switching voltage	250 V AC, 110 V DC (0.3 A)			
	Max. switching current	3 A	8 A		
Expected life (min. operations)	Mechanical (at 180 cpm)	5×10 <sup>6</sup>			
	Electrical (at 20 cpm) (at rated load)	105			

## Coil

Nominal operating Standard and high capacity type 200 mW power

#### Remarks

- Specifications will vary with foreign standards certification ratings. Measurement at same location as "Initial breakdown voltage" section
- \*2 Detection current: 10 mA
- $^{\star_3}$  Wave is standard shock voltage of  $\pm 1.2 \times 50 \mu s$  according to JEC-212-1981 \*4 Excluding contact bounce time
- \*5 Half-wave pulse of sine wave: 11ms; detection time: 10μs \*6 Half-wave pulse of sine wave: 6ms
- \*7 Detection time: 10µs
- \*8 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.

# **TYPICAL APPLICATIONS**

- Home appliances Microwave ovens, Air conditioners
- Office equipment Photocopiers, Facsimiles
- Industrial machines NC machines

## Characteristics

Max. operating speed			20 cpm		
Initial insulation resistance*1			Min. 100 M $\Omega$ at 500 V DC		
Initial	Between open contacts		ontacts	750 Vrms for 1 min.	
breakdown voltage*2	Between contact and coil		and coil	2,000 Vrms for 1 min.	
Surge voltage between contact and coil*3			Min. 8,000 V		
Operate time	e*4 (at nominal	l volt	tage)	Approx. 4 ms	
Release time*4 (at nominal voltage) (without diode)		Approx. 2 ms			
Temperature rise (ambient temperature: 70°C)		Max. 45°C with nominal coil voltage and at maximum allowable contact current			
Shock resistance		Functional*5		Min. 98 m/s <sup>2</sup> {10 G}	
		Destructive*6		Min. 980 m/s <sup>2</sup> {100 G}	
Vibration resistance		Functional*7		10 to 55 Hz at double amplitude of 1.6 mm	
		Destructive		10 to 55 Hz at double amplitude of 2 mm	
Conditions for operation, transport and storage <sup>*8</sup> (Not freezing and condensing at low temperature)		Ambient temp.	<b>−40°C to +70°C</b> −40°F to +158°F		
		Humidity	5 to 85% R.H.		
Unit weight		Approx. 7 g .25 oz			

## **ORDERING INFORMATION**

Ex. JK 1a P F — 12 V				
Contact capacity	Protectiive constructiion	Coil voltage (DC)		
Nil: Standard 3 A P: High capacity 8A	Nil: Sealed type F: Flux-resis- tant type	3, 5, 6, 9, 12, 18, 24, 48 V		

Notes: 1. For TV-5 rated type, add sufix "-TV".

- For detailed specifications, please consult us.
- 2. Standard packing: Carton: 100 pcs.; Case: 500 pcs.
- UL/CSA, VDE approved type is standard.

Coil voltage,	Part No.			
V DC	Sealed type	Flux-resistant type		
3	JK1a-3V	JK1aF-3V		
5	JK1a-5V	JK1aF-5V		
6	JK1a-6V	JK1aF-6V		
9	JK1a-9V	JK1aF-9V		
12	JK1a-12V	JK1aF-12V		
18	JK1a-18V	JK1aF-18V		
24	JK1a-24V	JK1aF-24V		
48	JK1a-48V	JK1aF-48V		

## 2. High capacity type (8 A)

• • •				
Coil voltage,	Part No.			
V DC	Sealed type	Flux-resistant type		
3	JK1aP-3V	JK1aPF-3V		
5	JK1aP-5V	JK1aPF-5V		
6	JK1aP-6V	JK1aPF-6V		
9	JK1aP-9V	JK1aPF-9V		
12	JK1aP-12V	JK1aPF-12V		
18	JK1aP-18V	JK1aPF-18V		
24	JK1aP-24V	JK1aPF-24V		
48	JK1aP-48V	JK1aPF-48V		

# COIL DATA (at 20°C 68°F)

		-				
Nominal voltage, V DC	Pick-up voltage V DC (max.)	Drop-out voltage, V DC (min.)	Coil resistance Ω (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, mW	Max. allowable voltage at 70°C, V DC
3	2.4	0.15	45	67	200	3.9
5	4.0	0.25	125	40	200	6.5
6	4.8	0.3	180	33	200	7.8
9	7.2	0.45	405	22	200	11.7
12	9.6	0.6	720	17	200	15.6
18	14.4	0.9	1,620	11	200	23.4
24	19.2	1.2	2,880	8.3	200	31.2
48	38.4	2.4	11,520	4.2	200	62.4

# DIMENSIONS







## PC board pattern (Bottom view)



Tolerance:  $\pm 0.1 \pm .004$ 

mm inch

Dimension: Max. 1mm .039 inch 1 to 5mm .039 to .197 inch  $\pm 0.3 \pm .012$ Min. 5mm .197 inch

#### General tolerance ±0.2 ±.008

**±0.4** ±.016

# **REFERENCE DATA**

1-(1). Maximum value for switching capacity (Standard type)



<sup>1-(2).</sup> Maximum value for switching capacity (High capacity type)



### 2. Operate/release time





For Cautions for Use, see Relay Technical Information.