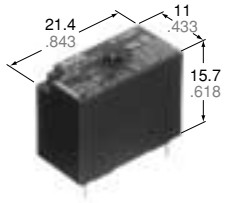
Panasonic
ideas for life

SLIM TYPE POWER RELAY

JK RELAYS



mm inch

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

Type		Standard type	High capacity type
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)	5×10^6	
	Electrical (at 20 cpm) (at rated load)	10^5	

Coil

Nominal operating power	Standard and high capacity type	200 mW

Remarks

* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10 mA
*3 Wave is standard shock voltage of ±1.2 × 50μs 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.

Characteristics

Max. operating speed		20 cpm
Initial insulation resistance*1		Min. 100 MΩ at 500 V DC
Initial breakdown voltage*2	Between open contacts	750 Vrms for 1 min.
	Between contact and coil	2,000 Vrms for 1 min.
Surge voltage between contact and coil*3		Min. 8,000 V
Operate time*4 (at nominal voltage)		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/s² {10 G}
	Destructive*6	Min. 980 m/s² {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*8 (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to +70°C –40°F to +158°F
	Humidity	5 to 85% R.H.
Unit weight		Approx. 7 g .25 oz

TYPICAL APPLICATIONS

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

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-resistant 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.

TYPES

1. Standard type (3 A)

Coil voltage, V DC	Part No.	
	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)

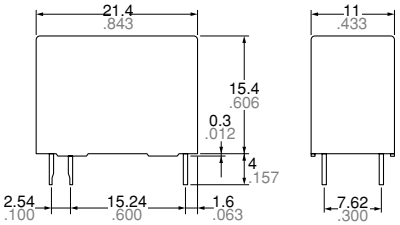
Coil voltage, V DC	Part No.	
	Sealed type	Flux-resistant type
3	JK1aP-3V	JK1aPF-3V
5	JK1aP-5V	JK1aPF-5V
6	JK1aP-6V	JK1aPF-6V
9	JK1aP-9V	JK1aPF-9V
12	JK1aP-12V	JK1aPF-12V
18	JK1aP-18V	JK1aPF-18V
24	JK1aP-24V	JK1aPF-24V
48	JK1aP-48V	JK1aPF-48V

COIL DATA (at 20°C 68°F)

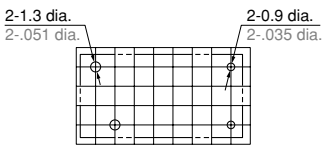
Nominal voltage, V DC	Pick-up voltage V DC (max.)	Drop-out voltage, V DC (min.)	Coil resistance Ω (±10%)	Nominal operating current, mA (±10%)	Nominal operating power, mW	Max. allowable voltage at 70°C, V DC
3	2.4	0.15	45	67	200	3.9
5	4.0	0.25	125	40	200	6.5
6	4.8	0.3	180	33	200	7.8
9	7.2	0.45	405	22	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

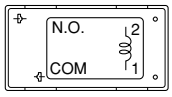
mm inch



PC board pattern (Bottom view)



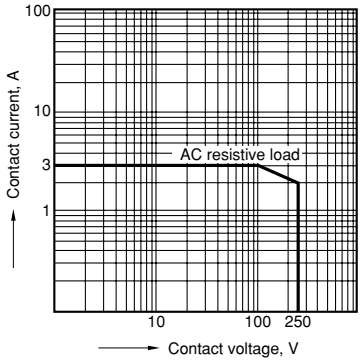
Tolerance: ±0.1 ±.004



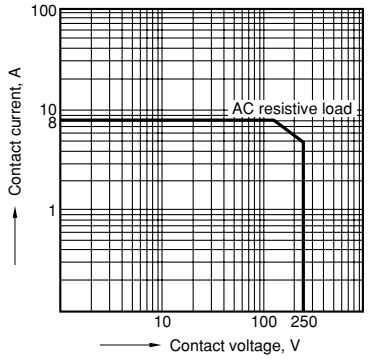
Dimension:	General tolerance
Max. 1mm .039 inch	±0.2 ±.008
1 to 5mm .039 to .197 inch	±0.3 ±.012
Min. 5mm .197 inch	±0.4 ±.016

REFERENCE DATA

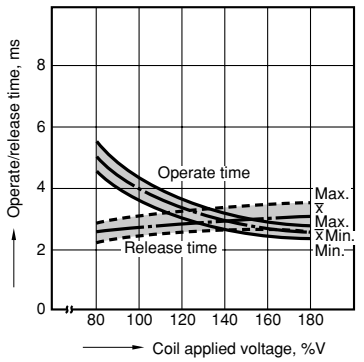
1-(1). Maximum value for switching capacity (Standard type)



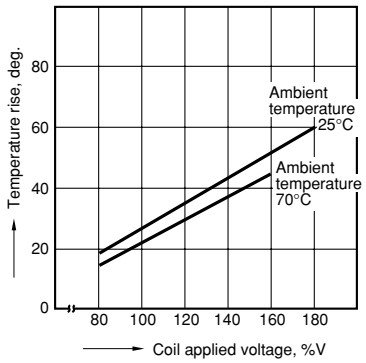
1-(2). Maximum value for switching capacity (High capacity type)



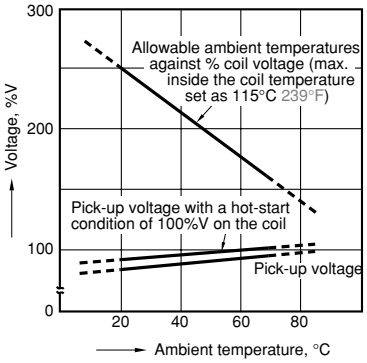
2. Operate/release time



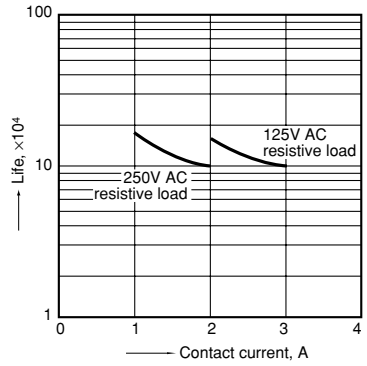
3. Coil temperature rise
(High capacity type)
Measured portion: Inside the coil
Contact current: 8 A



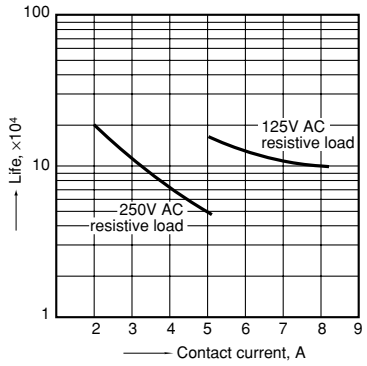
4. Ambient temperature characteristics
(High capacity type)
Contact current: 8 A



5.-(1) Life curve (Standard type)
Operation frequency: 20 times/min.
(ON/OFF = 1.5s:1.5s)
Ambient temperature: Room temperature



5.-(2) Life curve (High capacity type)
Operation frequency: 20 times/min.
(ON/OFF = 1.5s:1.5s)
Ambient temperature: Room temperature



For Cautions for Use, see Relay Technical Information.