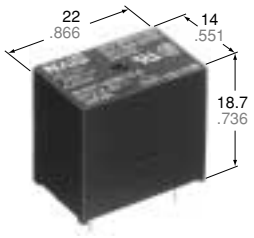
Panasonic
ideas for life

COMPACT ECONOMICAL POWER RELAYS

JE-X RELAYS



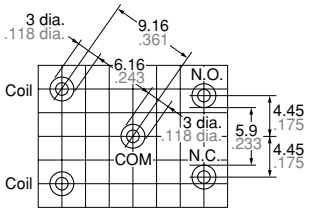
mm inch

FEATURES

- **Compact size - Height Max. 18.7 mm .736 inch lower than JY relay (22.5 mm) (.886 inch)**
- **High contact capacity — 5A 125 V AC**
- **Safety-oriented between coil and contact terminals**
- **All plastic materials: UL flame retardance 94V-0**
- **VDE, TÜV also approved**

TERMINAL LAYOUT

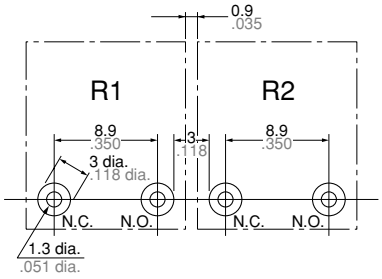
Distance of 9.16 mm .360 inch between common and coil terminals and 8.9 mm .350 inch between contacts give room to the land diameter width when the relay is mounted on PC board, and allow design of patterns with insulation distances of 6 mm .236 inch between common and coil and 5.9 mm .232 inch between contacts.



In case of 3 mm .118 inch land diameter

mm inch

• 3 mm .118 inch or more insulation distance for close mounting can be kept easily with JE-X relays.



mm inch

SPECIFICATIONS

Contact

Arrangement		1 Form A	1 Form C
Initial contact resistance, max. (By voltage drop 6 V DC 1A)		100 mΩ	
Contact material		Silver alloy	
Rating (resistive load)	Nominal switching capacity	5 A 30 V DC, 5 A 125 V AC, 3A 250 V AC	
	Max. switching power	750 VA, 150 W	
	Max. switching voltage	250 V AC, 30 V DC	
	Max. switching current	5 A	
Expected life (min. operations)	Mechanical (at 180 cpm)	5×10^6	
	Electrical (at 20 cpm) (at rated load)	10^5	

Coil

Minimum operating power	196 mW
Nominal operating power	400 mW

Characteristics

Max. operating speed		20 cpm (at 70°C)
Initial insulation resistance*1		Min. 100 MΩ (at 500 V DC)
Initial breakdown voltage*2	Between open contacts	750 Vrms
	Between contacts and coil	1,500 Vrms
Surge voltage between coil and contact*3		Min. 5,000 V
Operate time*4 (at nominal voltage)		Approx. 10 ms
Release time (without diode)*4 (at nominal voltage)		Approx. 2 ms
Temperature rise (at 70°C)		Max. 45°C with nominal coil voltage and at nominal switching capacity
Shock resistance	Functional*5	Min. 98 m/s² {10 G}
	Destructive*6	Min. 980 m/s² {100 G}
Vibration resistance	Functional*7	98 m/s² {10 G}, 10 to 55 Hz at double amplitude of 1.6 mm
	Destructive	117.6 m/s² {12 G}, 10 to 55 Hz at double amplitude of 2.0 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. 9.2g .32 oz

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: 6ms; detection time: 10μs
*6 Half-wave pulse of sine wave: 6ms
*7 Detection time: 10μs
*8 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.

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TYPICAL APPLICATIONS

- Home appliances
  Oven, range, dryer, heater, Air conditioner etc.
- Automotive
- Garage door opener
- Personal computer
- Programmable controller

ORDERING INFORMATION

Ex. JE [1] X [N] — [DC12V] — [H]

Contact arrangement	Pick-up voltage	Coil voltage	Protective construction
1a: 1 Form A 1:1 Form C	N:70% of nominal voltage	DC 5, 6, 9, 12, 24, 48 V	H: Flux-resistant type

(Note) Standard packing: Carton 100 pcs. Case 500 pcs.
UL/CSA, VDE approved type is standard.

TYPES

Contact arrangement	Coil voltage	Pick-up 70% V type Flux-resistant type
1 Form A	5 V DC	JE1aXN-DC5V-H
	6 V DC	JE1aXN-DC6V-H
	9 V DC	JE1aXN-DC9V-H
	12 V DC	JE1aXN-DC12V-H
	24 V DC	JE1aXN-DC24V-H
	48 V DC	JE1aXN-DC48V-H
1 Form C	5 V DC	JE1XN-DC5V-H
	6 V DC	JE1XN-DC6V-H
	9 V DC	JE1XN-DC9V-H
	12 V DC	JE1XN-DC12V-H
	24 V DC	JE1XN-DC24V-H
	48 V DC	JE1XN-DC48V-H

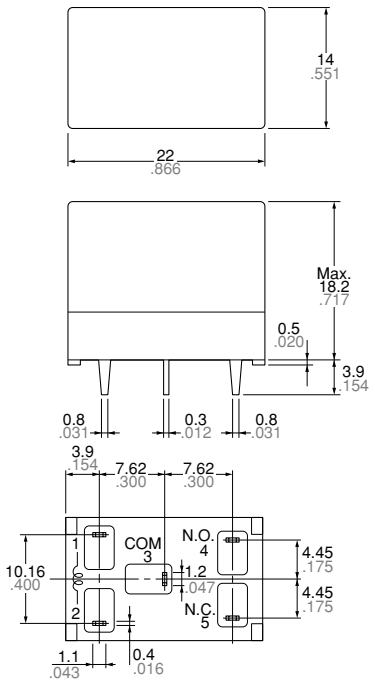
COIL DATA (at 20°C 68°F)

Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal operating currrent, mA (±10%)	Coil resistance, Ω(±10%)	Nominal operating power, mW	Maximum allowable voltage, V DC (at 70°C)
5	3.5	0.5	80	62.5	400	6.5
6	4.2	0.6	67	90	400	7.8
9	6.3	0.9	44	202	400	11.7
12	8.4	1.2	33	360	400	15.6
24	16.8	2.4	17	1,440	400	31.2
48	33.6	4.8	8.3	5,760	400	62.4

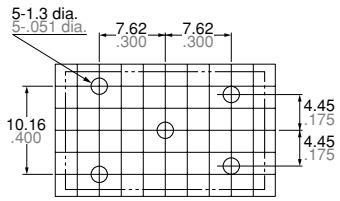
DIMENSIONS

mm inch



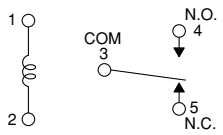


PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

Schematic (Bottom view)



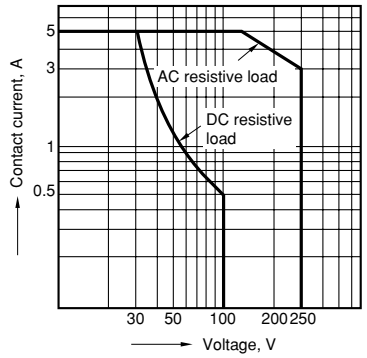
Note: The above shows 1 Form C type, and No. 5 terminal is eliminated on the 1 Form A type.

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

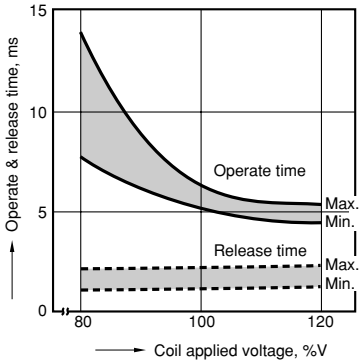
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REFERENCE DATA

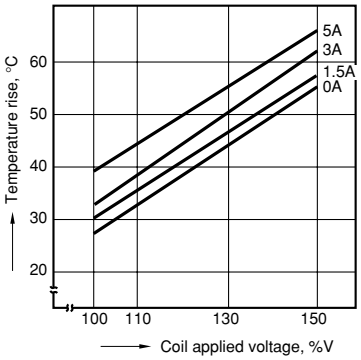
1. Max. switching power



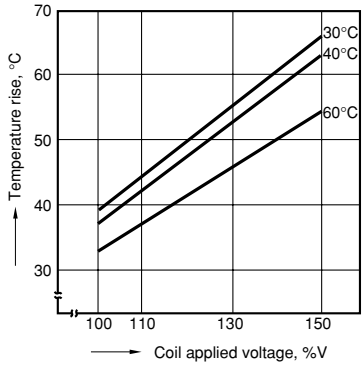
2. Operate and release time



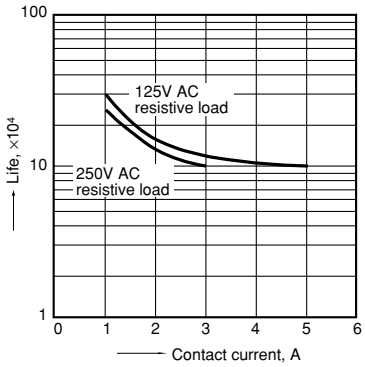
3. Coil temperature rise (at 30°C 86°F)



4. Coil temperature rise
(Contact carrying current: 5 A)



5. Life curve



NOTE

Soldering should be carried out within 3 s at 350°C 662°F or within 5 s at 250°C 482°F.

For Cautions for Use, see Relay Technical Information.

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