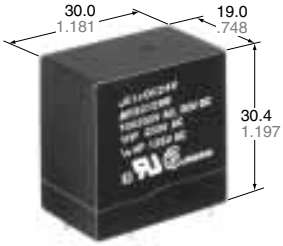
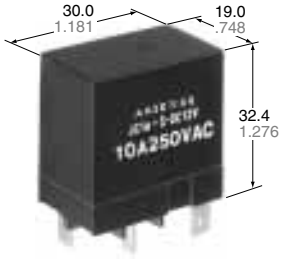
Panasonic
ideas for life

COMPACT POWER RELAYS

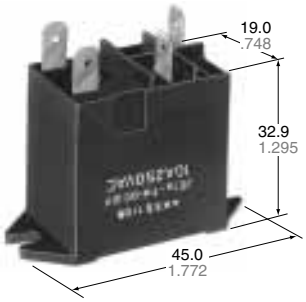
JC RELAYS



PC board type



Plug-in type



TM type

mm inch

FEATURES

- **High inrush current capability**
  1 Form A: 163 A inrush (TV-8)
  2 Form A: 111 A inrush (TV-5)
- **High dielectric withstanding for transient protection:**
  JC can withstand 10,000 V surge in μs between coil and contact.
- **Electrical life:**
  1 Form A: 10^5 ope. at 15 A 250 V AC resistive load
  2 Form A: 10^5 ope. at 10 A 250 V AC resistive load
- **UL/CSA, VDE, TÜV, SEMKO also approved.**

SPECIFICATIONS

Contact

Arrangement			1 Form A	2 Form A
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)			30 mΩ (Cd free type: 100 mΩ)	
Contact material			Silver alloy	
Contact force, min.			30 g	
Rating (resistive load)	Maximum switching power		3,750 VA	2,500 VA
	Maximum switching voltage		250 V AC	250 V AC
	Max. switching current		15 A	10 A
	Min. switching capacity#1		100 mA, 5 V DC	
Expected life (min. operation)	Mechanical		5×10^6	
	Electrical (resistive)	10 A 250 V AC	10^5	—
		5A 250 V AC	—	10^5

Coil

Nominal operating power	900 mW	1,000 mW

#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.

Remarks

* Specifications will vary with foreign standards certification ratings.
*1 Measurement of same location as "Initial breakdown voltage" section
*2 Detection current: 10mA
*3 Excluding contact bounce time
*4 Half-wave pulse of sine wave: 11ms; detection time: 10μs
*5 Half-wave pulse of sine wave: 6ms
*6 Detection time: 10μs
*7 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT

Characteristics

Maximum operating speed			20 cpm.
Initial insulation resistance*1			Min. 100 MΩ at 500 V DC
Initial breakdown voltage*2	Between open contacts		2,000 V rms for 1 min.
	Between contacts sets		2,000 Vrms for 1 min.
	Between contacts and coil		4,000 Vrms for 1 min.
Operate time*3 (at nominal voltage)			Max. 30 ms
Release time(without diode)*3 (at nominal voltage)			Max. 10 ms
Temperature rise (at nominal voltage)			Max. 55°C
Shock resistance	Functional*4		196 m/s² {20 G}
	Destructive*5		980 m/s² {100 G}
Vibration resistance	Functional*6		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 mm
Conditions for operation, transport and storage*7 (Not freezing and condensing at low temperature)		Ambient temp.	–50°C to +60°C –58°F to +140°F
		Humidity	5 to 85%R.H.
Unit weight			Approx. 31 g 1.09 oz

TYPICAL APPLICATIONS

Automatic garage door openers
Microwave ovens
Dryers
Vending machines
Copiers
Air conditioners
Stereo equipment
TV sets

ORDERING INFORMATION

Ex. JC [1a] F — [TM] — [DC12V] — [F]

Contact arrangement	Mounting classification	Coil voltage	Environmental support
1a: 1 Form A 2a: 2 Form A	Nil: PC board terminal S: Plug-in terminal TM: Top mounting	DC 5, 6, 12, 24, 48 V	F: RoHS Directive conforming type ($AgSnO_2$ type) Nil: RoHS Directive non-conforming type (AgCdO type)

(Notes) 1. TV rated types available 1 Form A: TV-8; 2 Form A: TV-5.
2. Standard packing Carton: 50 pcs.; Case: 200 pcs.
3. UL/CSA, VDE, TÜV, and SEMKO certified products can also be supported. Please consult us.

COIL DATA (at 20°C 68°F)

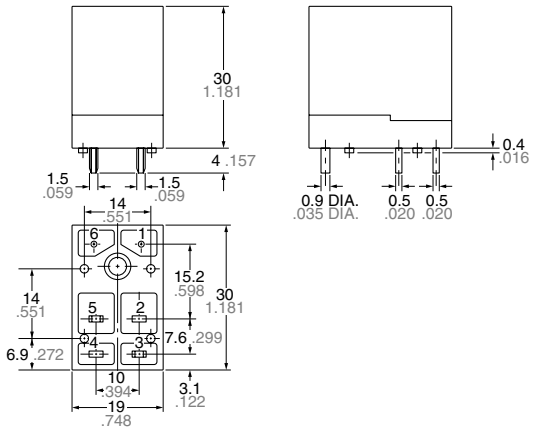
Contact arrangement	Nominal voltage. V DC	Pick-up voltage. V DC (max.)	Drop-out voltage. V DC (min.)	Coil resistance, Ω(±10%)	Nominal operating current, mA	Nominal operating power, W	Maximum allowable voltage, V DC (at 60°C)
1 Form A	6	4.8	0.6	40	150	0.9	6.6
	12	9.6	1.2	160	75	0.9	13.2
	24	19.2	2.4	640	37.5	0.9	26.4
	48	38.4	4.8	2,560	18.8	0.9	52.8
2 Form A	6	4.8	0.6	36	166.6	1.0	6.6
	12	9.6	1.2	144	83.3	1.0	13.2
	24	19.2	2.4	576	41.6	1.0	26.4
	48	38.4	4.8	2,304	20.8	1.0	52.8

DIMENSIONS

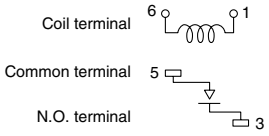
mm inch

PC board type

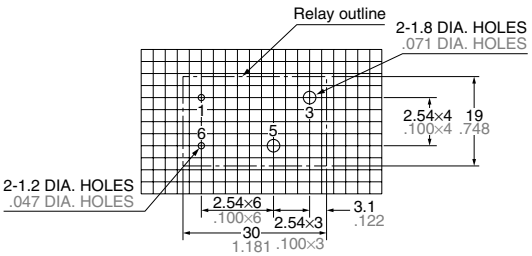
JC1a



Schematic

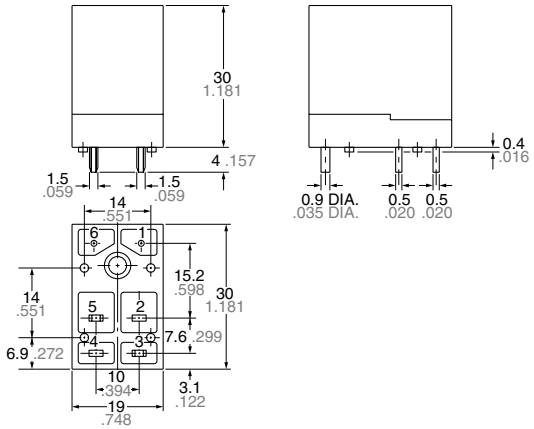


PC board pattern (Bottom view)

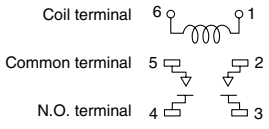


PC board type

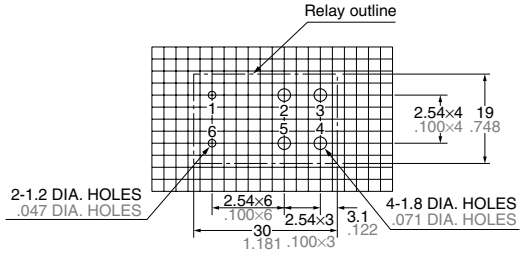
JC2a



Schematic



PC board pattern (Bottom view)



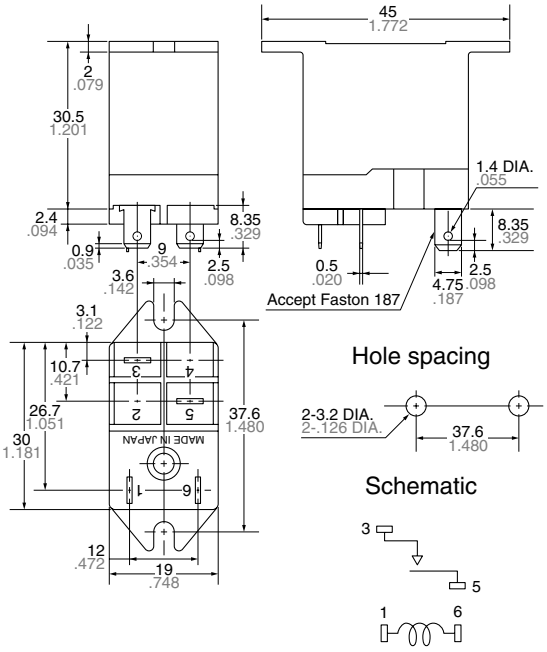
General tolerance: ±0.3 ±.012

Tolerance: ±0.1 ±.004

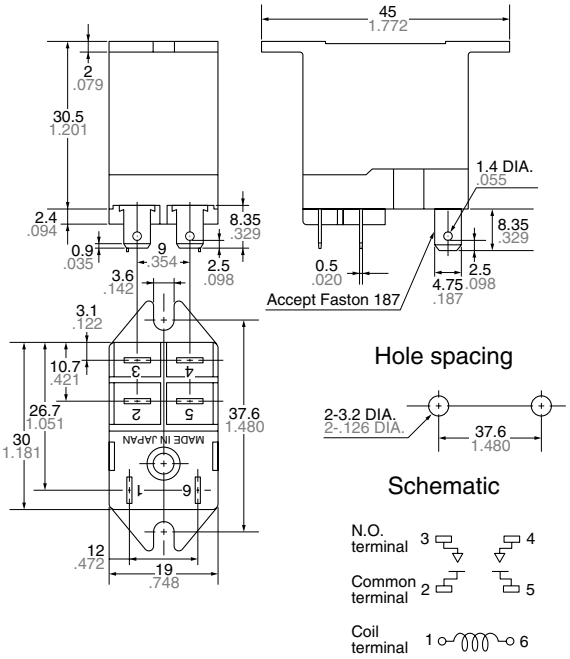
Top mount type

mm inch

1a

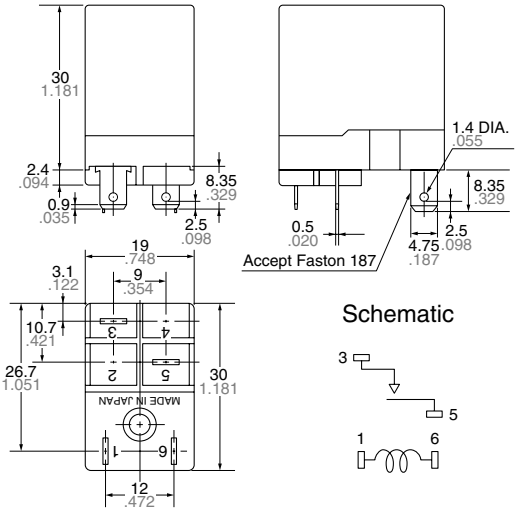


2a

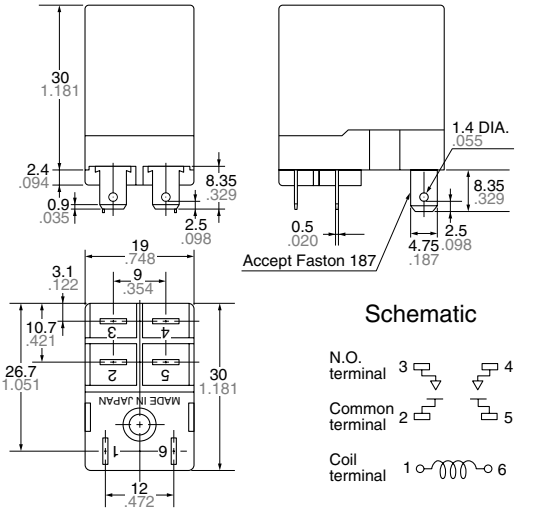


Plug-in type

1a



2a

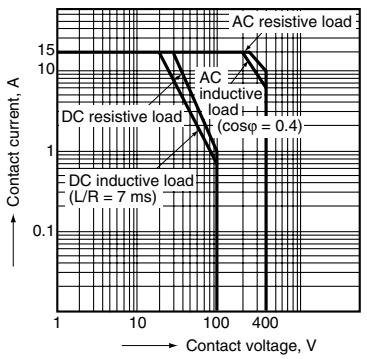


General tolerance: ±0.3 ±.012

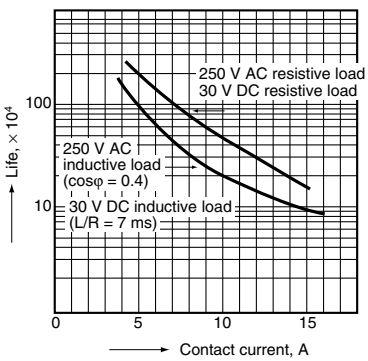
REFERENCE DATA

JC1a type

1. Maximum value for switching capacity

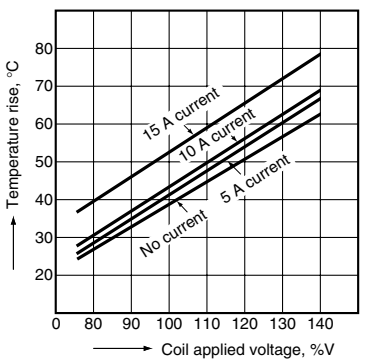


2. Life curve

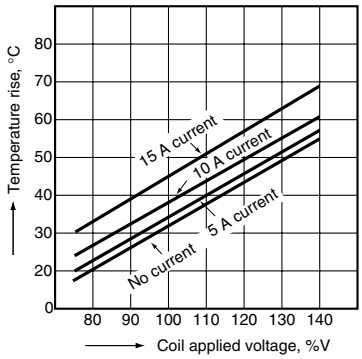


3.-(1) Coil temperature rise

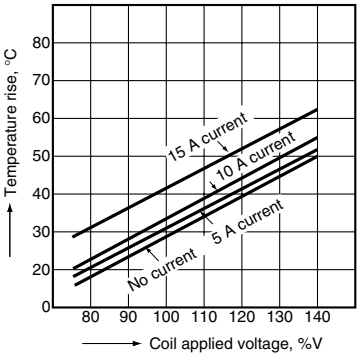
Point measured: Inside the coil
Ambient temperature: 26°C 79°F



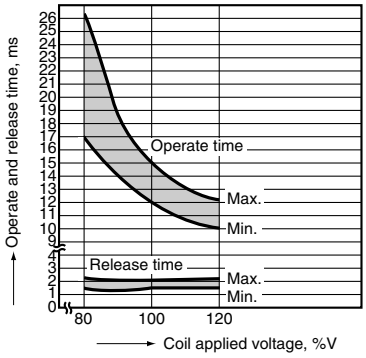
3.-(2) Coil temperature rise
Point measured: Inside the coil
Ambient temperature: 40°C 104°F



3.-(3) Coil temperature rise
Point measured: Inside the coil
Ambient temperature: 60°C 140°F

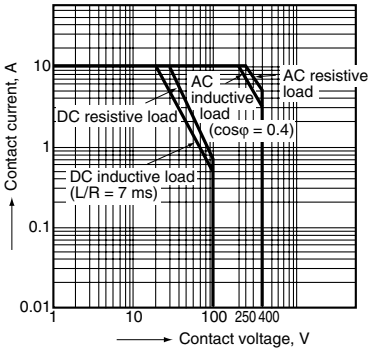


4. Operate / release time

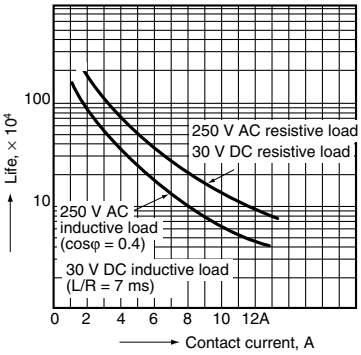


JC2a type

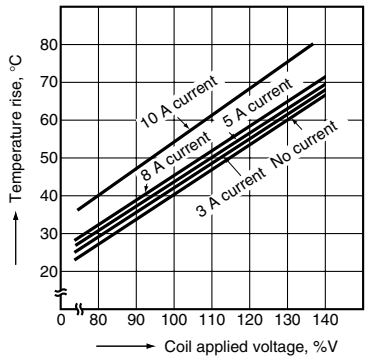
1. Maximum value for switching capacity



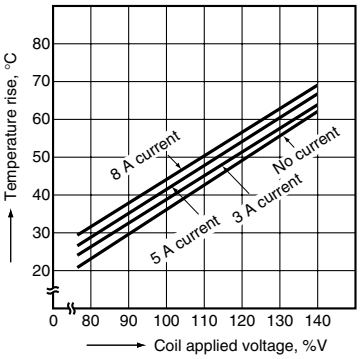
2. Life curve



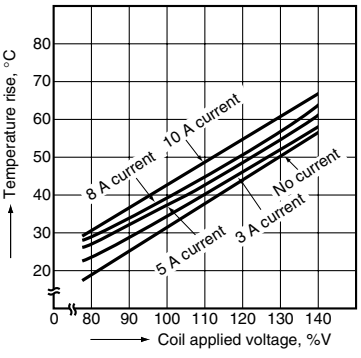
3.-(1) Coil temperature rise
Point measured: Inside the coil
Ambient temperature: 26°C 79°F



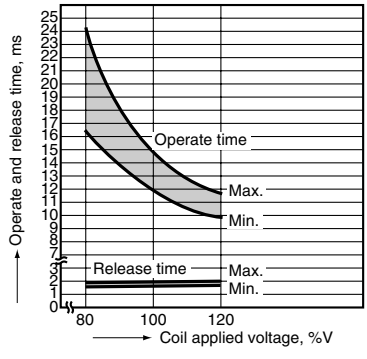
3.-(2) Coil temperature rise
Point measured: Inside the coil
Ambient temperature: 40°C 104°F



3.-(3) Coil temperature rise
Point measured: Inside the coil
Ambient temperature: 60°C 140°F



4. Operate / release time



ACCESSORIES

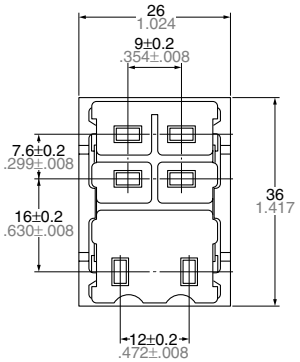
JC1-SS

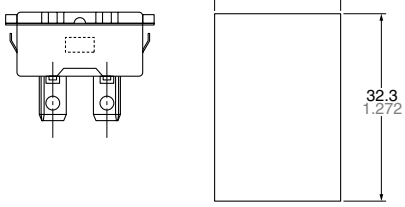
JC2-SS

JC1-PS

JC2-PS

JC2-SS

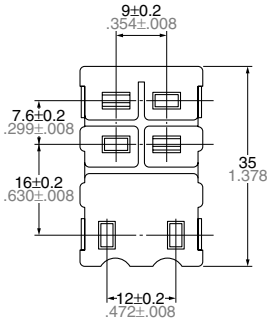


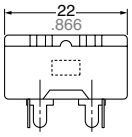


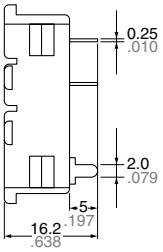
Panel cutout

Tolerance: ±0.1 ±.004

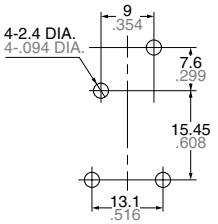
JC2-PS



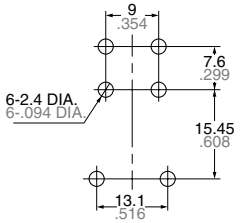




JC1-PS



JC2-PS



PC board Pattern

Tolerance: ±0.1 ±.004

mm inch

Tolerance: ±0.5 ±.020

(Note)
Outward dimensions and chassis cutout dimensions for JC1-SS and JC1-PS are same as those of JC2-SS and JC2-PS respectively.
UL/CSA approved type is standard.

For Cautions for Use, see Relay Technical Information