

Panasonic
ideas for life

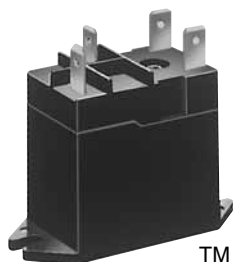
Wide variation
1a 15A, 2a 10A
power relays

JC RELAYS



PC board type

Plug-in type



TM type

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 μ s 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.

TYPICAL APPLICATIONS

Automatic garage door openers

Microwave ovens

Dryers

Vending machines

Copiers

Air conditioners

Stereo equipment

TV sets

Compliance with RoHS Directive

ORDERING INFORMATION

JC F F

Contact arrangement

1a: 1 Form A

2a: 2 Form A

Mounting classification

Nil: PC board terminal

S: Plug-in terminal

TM: Top mounting

Nominal coil voltage

DC6V, DC12V, DC24V

Contact material

F: AgSnO₂ type

Note: Certified by UL, CSA, VDE, TÜV and SEMKO

TYPES

Contact arrangement	Nominal coil voltage	PC board type	Plug-in type	Top mounting type
		Part No.	Part No.	Part No.
1 Form A	6V DC	JC1aF-DC6V-F	JC1aF-S-DC6V-F	JC1aF-TM-DC6V-F
	12V DC	JC1aF-DC12V-F	JC1aF-S-DC12V-F	JC1aF-TM-DC12V-F
	24V DC	JC1aF-DC24V-F	JC1aF-S-DC24V-F	JC1aF-TM-DC24V-F
2 Form A	6V DC	JC2aF-DC6V-F	JC2aF-S-DC6V-F	JC2aF-TM-DC6V-F
	12V DC	JC2aF-DC12V-F	JC2aF-S-DC12V-F	JC2aF-TM-DC12V-F
	24V DC	JC2aF-DC24V-F	JC2aF-S-DC24V-F	JC2aF-TM-DC24V-F

Standard packing: PC board type: Carton 50 pcs. Case 200 pcs.

Plug-in and Top mounting type: Carton 20 pcs. Case 200 pcs.

Notes: 1. Please refer to the "Standards Chart" for product certification.

2. 5 V DC type is also available.

RATING

1. Coil data

Contact arrangement	Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power	Max. applied voltage (at 60°C 140°F)
1 Form A	6V DC	80%V or less of nominal voltage (Initial)	10%V or more of nominal voltage (Initial)	150 mA	40Ω	0.9W	110%V of nominal voltage
	12V DC			75 mA	160Ω	0.9W	
	24V DC			37.5mA	640Ω	0.9W	
2 Form A	6V DC			166.6mA	36Ω	1.0W	
	12V DC			83.3mA	144Ω	1.0W	
	24V DC			41.6mA	576Ω	1.0W	

2. Specifications

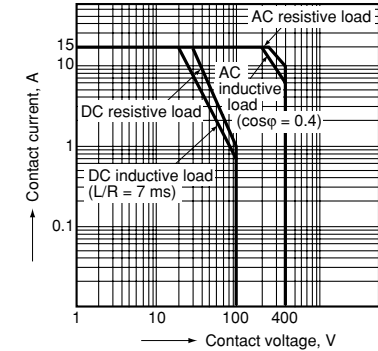
Characteristics	Item		Specifications	
Contact	Contact material		AgSnO ₂ type	
	Arrangement		1 Form A	2 Form A
	Contact resistance (Initial)		Max. 100 mΩ (By voltage drop 6 V DC 1A)	
	Contact force		Min. 30 g	
Rating	Nominal switching capacity (resistive load)		15A 250V AC	10A 250V AC
	Max. switching power (resistive load)		3,750VA	2,500VA
	Max. switching voltage		250V AC	
	Max. switching current		15A	10A
	Nominal operating power		900mW	1,000mW
	Min. switching capacity (reference value)*1		100mA, 5V DC	
Electrical characteristics	Insulation resistance (Initial)		Min. 100MΩ (at 500V DC) Measurement at same location as “Breakdown voltage” section.	
	Breakdown voltage (Initial)	Between open contacts	2,000 Vrms for 1 min. (Detection current: 10 mA)	
		Between contacts sets	—	2,000 Vrms for 1 min. (Detection current: 10 mA)
		Between contact and coil	4,000 Vrms for 1 min. (Detection current: 10 mA)	
	Temperature rise (coil)		Max. 55°C 131°F (By resistive method, nominal coil voltage applied to the coil, at 60°C 140°F)	
	Surge breakdown voltage*2 (Between contact and coil) (Initial)		10,000 V	
	Operate time (at nominal voltage) (at 20°C 68°F)		Max. 30 ms (excluding contact bounce time.)	
	Release time (at nominal voltage) (at 20°C 68°F)		Max. 10 ms (excluding contact bounce time) (Without diode)	
Mechanical characteristics	Shock resistance	Functional	196 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)	
		Destructive	980 m/s ² (Half-wave pulse of sine wave: 6 ms.)	
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.6 mm (Detection time: 10μs.)	
		Destructive	10 to 55 Hz at double amplitude of 2.0 mm	
Expected life	Mechanical (at 180 times/min.)		Min. 5×10 ⁶	
	Electrical (at 20 times/min.)		Min. 10 ⁵ (10A 250V AC at rated load), Min. 10 ⁵ (5A 250V AC at rated load)	
Conditions	Conditions for operation, transport and storage*3		Ambient temperature: -50°C to +60°C -58°F to +140°F, Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
	Max. operating speed		20 times/min. (at nominal switching capacity)	
Unit weight			Approx. 31 g 1.09 oz	

* Specifications will vary with foreign standards certification ratings.
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.

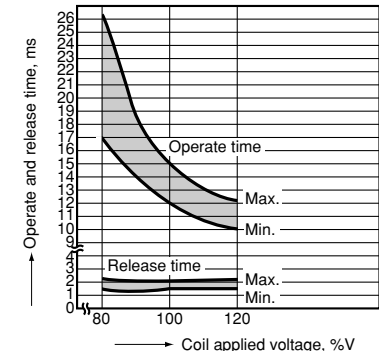
REFERENCE DATA

JC1a type

1. Maximum value for switching capacity

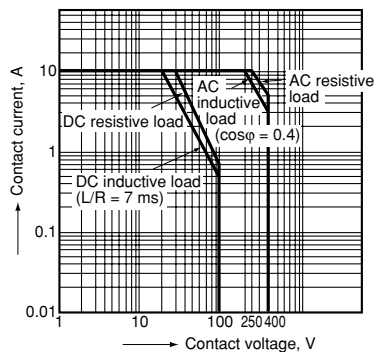


2. Operate / release time

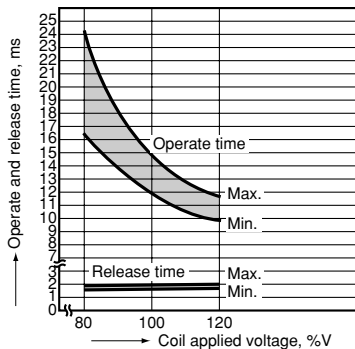


JC2a type

1. Maximum value for switching capacity



2. Operate / release time



DIMENSIONS (mm inch)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://panasonic-electric-works.net/ac>

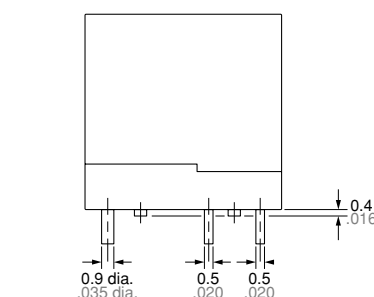
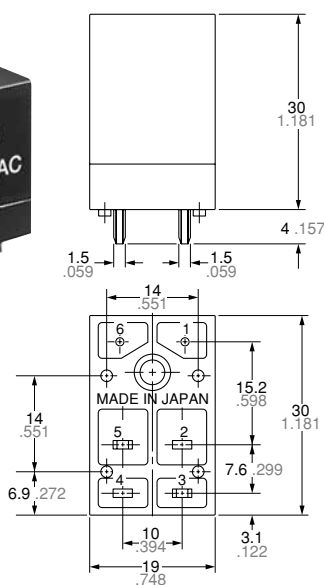
PC board type

1) JC 1 Form A

CAD Data



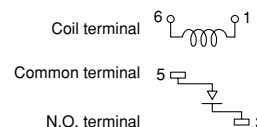
External dimensions



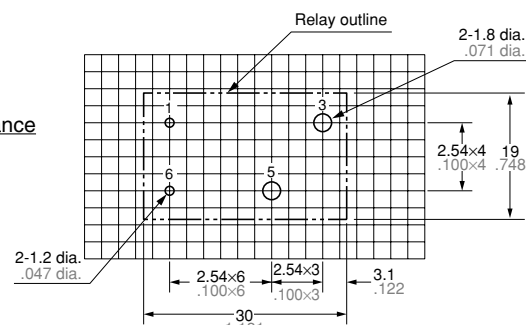
Dimension:
 Less than 1mm .039inch: $\pm 0.2 \pm .008$
 Min. 1mm .039inch
 less than 3mm .118 inch: $\pm 0.3 \pm .012$
 Min. 3mm .118 inch: $\pm 0.5 \pm .020$

General tolerance

Schematic (Bottom view)



PC board pattern (Bottom view)



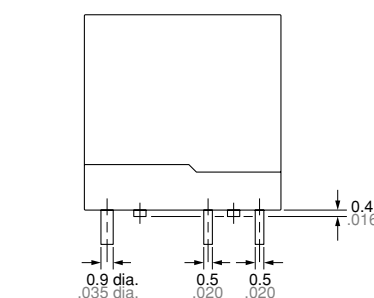
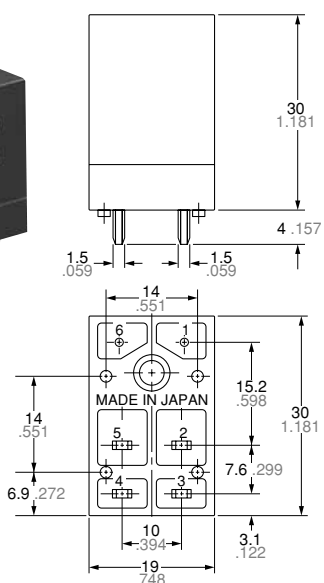
Tolerance: $\pm 0.1 \pm .004$

2) JC 2 Form A

CAD Data



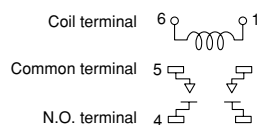
External dimensions



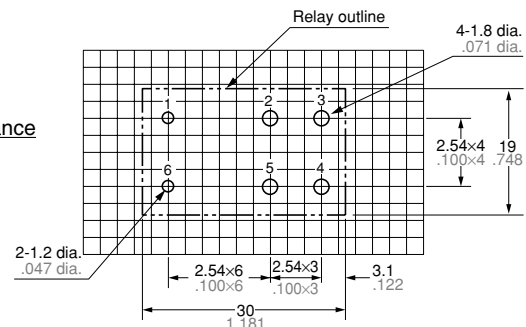
Dimension:
 Less than 1mm .039inch: $\pm 0.2 \pm .008$
 Min. 1mm .039inch
 less than 3mm .118 inch: $\pm 0.3 \pm .012$
 Min. 3mm .118 inch: $\pm 0.5 \pm .020$

General tolerance

Schematic (Bottom view)



PC board pattern (Bottom view)



Tolerance: $\pm 0.1 \pm .004$

JC

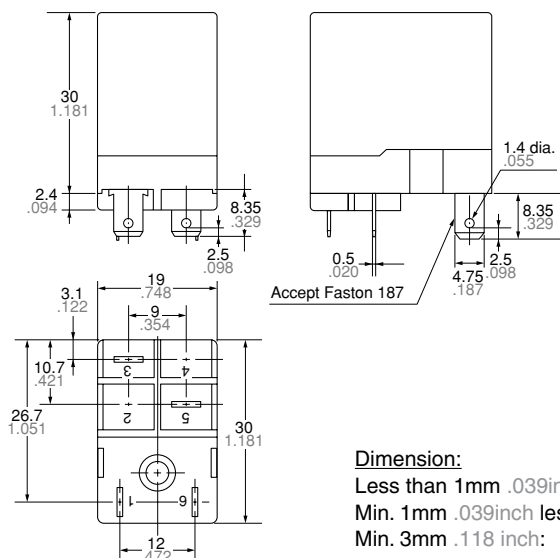
Plug-in type

1) JC 1 Form A

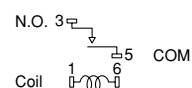
CAD Data



External dimensions



Schematic (Bottom view)



Dimension:

Less than 1mm .039inch:

Min. 1mm .039inch less than 3mm .118 inch: $\pm 0.3 \pm 0.012$

Min. 3mm .118 inch:

General tolerance

$\pm 0.2 \pm 0.008$

$\pm 0.3 \pm 0.012$

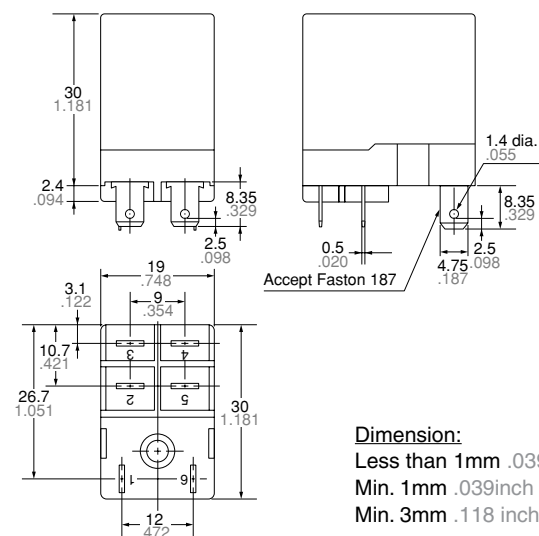
$\pm 0.5 \pm 0.020$

2) JC 2 Form A

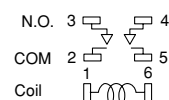
CAD Data



External dimensions



Schematic (Bottom view)



Dimension:

Less than 1mm .039inch:

Min. 1mm .039inch less than 3mm .118 inch: $\pm 0.3 \pm 0.012$

Min. 3mm .118 inch:

General tolerance

$\pm 0.2 \pm 0.008$

$\pm 0.3 \pm 0.012$

$\pm 0.5 \pm 0.020$

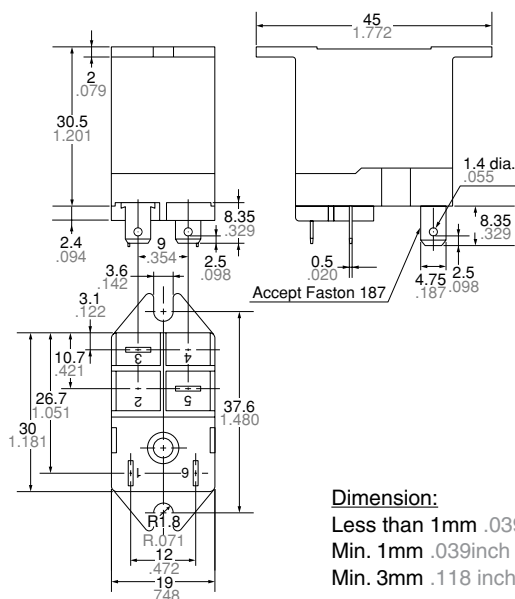
Top mount type (TM type)

1) JC 1 Form A

CAD Data



External dimensions



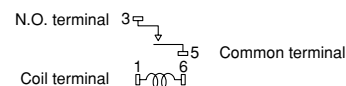
Dimension:

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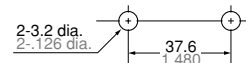
Min. 1mm .039inch less than 3mm .118 inch:

Min. 3mm .118 inch:

Schematic



Hole spacing



Tolerance: $\pm 0.1 \pm 0.004$

General tolerance

$\pm 0.2 \pm 0.008$

$\pm 0.3 \pm 0.012$

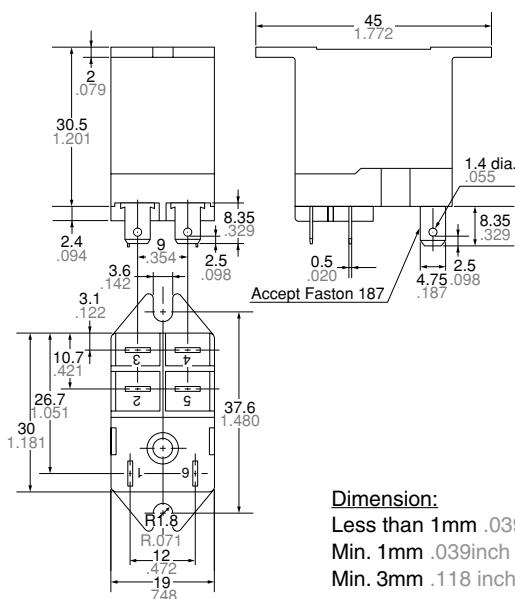
$\pm 0.5 \pm 0.020$

2) JC 2 Form A

CAD Data



External dimensions



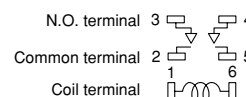
Dimension:

Less than 1mm .039inch:

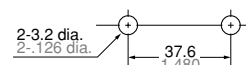
Min. 1mm .039inch less than 3mm .118 inch:

Min. 3mm .118 inch:

Schematic (Bottom view)



Hole spacing



Tolerance: $\pm 0.1 \pm 0.004$

General tolerance

$\pm 0.2 \pm 0.008$

$\pm 0.3 \pm 0.012$

$\pm 0.5 \pm 0.020$

SAFETY STANDARDS

Item	UL/C-UL (Recognized)		CSA (Certified)		VDE (Certified)		TV rating (UL/CSA)		TÜV (Certified)		SEMKO (Certified)	
	File No.	Contact rating	File No.	Contact rating	File No.	Contact rating	File No.	Rating	File No.	Rating	File No.	Contact rating
1 Form A	E43028	15A 250V AC 15A 30V DC 1HP 125V AC 1HP 250V AC	LR26550 etc.	15A 250V AC 15A 30V DC 1HP 125V AC 1HP 250V AC	40016951 *1	10A 250V AC ($\cos\phi=1.0$) 7.5A 250V AC ($\cos\phi=0.4$) 10A 30V DC (0ms)	UL E43028 CSA LR26550	TV-8	B 08 07 13461 251	15A 250V AC ($\cos\phi=1.0$)	606466 *2	15/120A 250V AC
2 Form A	E43028	10A 250V AC 10A 30V DC 1/3HP 125V AC 1/2HP 250V AC	LR26550 etc.	10A 250V AC 10A 30V DC 1/3HP 125V AC 1/2HP 250V AC	40016951 *1	5A 250V AC ($\cos\phi=1.0$) 3A 250V AC ($\cos\phi=0.4$) 5A 30V DC (0ms)	UL E43028 CSA LR26550 etc.	TV-5	B 08 07 13461 251	10A 250V AC ($\cos\phi=1.0$) 5A 50V DC (0ms)	606466 *2	5/40A 250V AC

Notes: *1. Part numbers 1aF and 2aF are not VDE certified. Part numbers 1a and 2a are.

*2. Part numbers 1aF and 2aF are not SEMKO certified. Part numbers 1a and 2a are.

For Cautions for Use.