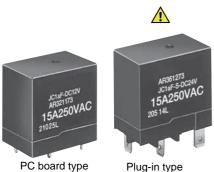


Panasonic ideas for life

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

JC RELAYS





Plug-in type

TM type

Products to be discontinued.

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.

• Clearance and creepage distance contact/coil:

8 mm

- Electrical life:
- 1 Form A: 105 ope. at 15 A 250 V AC resistive load
- 2 Form A: 105 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

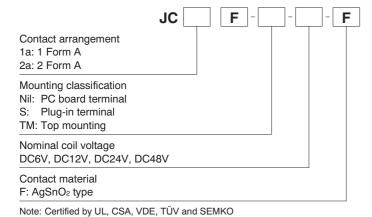
Copiers

Air conditioners

Stereo equipment

TV sets

ORDERING INFORMATION



TYPES

Contact arrangement	Naminal anil valtage	PC board type	Plug-in type	Top mounting type	
Contact arrangement	Nominal coil voltage	Part No.	Part No.	Part No.	
	6V DC	JC1aF-DC6V-F	⚠ JC1aF-S-DC6V-F	JC1aF-TM-DC6V-F	
1 Form A	12V DC	JC1aF-DC12V-F	⚠ JC1aF-S-DC12V-F	JC1aF-TM-DC12V-F	
I FOIIII A	24V DC	JC1aF-DC24V-F	⚠ JC1aF-S-DC24V-F	JC1aF-TM-DC24V-F	
	48V DC	JC1aF-DC48V-F	Part No. Part No. £1aF-DC6V-F ⚠ JC1aF-S-DC6V-F £1aF-DC12V-F ⚠ JC1aF-S-DC12V-F £1aF-DC24V-F ⚠ JC1aF-S-DC24V-F £1aF-DC48V-F ⚠ JC1aF-S-DC48V-F £1aF-DC6V-F ⚠ JC2aF-S-DC6V-F £2aF-DC12V-F ⚠ JC2aF-S-DC12V-F £2aF-DC24V-F ⚠ JC2aF-S-DC24V-F	JC1aF-TM-DC48V-F	
	6V DC	JC2aF-DC6V-F	⚠ JC2aF-S-DC6V-F	JC2aF-TM-DC6V-F	
2 Form A	12V DC	JC2aF-DC12V-F	⚠ JC2aF-S-DC12V-F	JC2aF-TM-DC12V-F	
Z FUIII A	24V DC	JC2aF-DC24V-F	⚠ JC2aF-S-DC24V-F	JC2aF-TM-DC24V-F	
	48V DC	IC2aF-DC48V-F	↑ JC2aF-S-DC48V-F	IC2aF-TM-DC48V-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)	
	6V DC			150 mA	40Ω	0.9W		
1 Form A	12V DC	80%V or less of	10%V or more of nominal voltage (Initial)	75 mA	160Ω	0.9W	110%V of	
I FOIII A	24V DC			37.5mA	640Ω	0.9W		
	48V DC			18.8mA	2,560Ω	0.9W		
	6V DC	nominal voltage (Initial)		166.6mA	36Ω	1.0W	nominal voltage	
2 Form A	12V DC	(83.3mA	144Ω	1.0W		
2 FOIII A	24V DC			41.6mA	576Ω	1.0W	1	
	48V DC			20.8mA	2,304Ω	1.0W		

2. Specifications

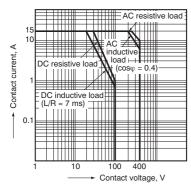
Characteristics		Item	Specifications				
	Contact material		AgSnO₂ type				
Contact	Arrangement		1 Form A	2 Form A			
	Contact resistance (I	nitial)	Max. 100 mΩ (By voltage drop 6 V DC 1A)				
	Contact force		Min. 30 g				
	Nominal switching ca	pacity (resistive load)	15A 250V AC	10A 250V AC			
	Max. switching powe	r (resistive load)	3,750VA	2,500VA			
Rating	Max. switching voltage	ge	250\	/ AC			
Railiy	Max. switching curre	nt	15A	10A			
	Nominal operating po	ower	900mW	1,000mW			
	Min. switching capac	ity (reference value)*1	100mA	, 5V DC			
	Insulation resistance	(Initial)	Min. 100M Ω (at 500V DC) Measurement at sa	ame location as "Breakdown voltage" section.			
		Between open contacts	2,000 Vrms for 1 min. (Detection current: 10 mA)				
	Breakdown voltage (Initial)	Between contacts sets	_	2,000 Vrms for 1 min. (Detection current: 10 mA)			
Electrical		Between contact and coil	4,000 Vrms for 1 min. (D	etection current: 10 mA)			
characteristics	Temperature rise (co	il)	Max. 55°C 131°F (By resistive method, nomina	I coil voltage applied to the coil, at 60°C 140°F)			
	Surge breakdown vo (Between contact and		10,000 V				
	Operate time (at nom	ninal voltage) (at 20°C 68°F)	Max. 30 ms (excluding	contact bounce time.)			
	Release time (at non	ninal voltage) (at 20°C 68°F)	Max. 10 ms (excluding contac	ax. 10 ms (excluding contact bounce time) (Without diode)			
	Shock resistance	Functional	196 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)				
Mechanical	SHOCK resistance	Destructive	980 m/s² (Half-wave pulse of sine wave: 6 ms.)				
characteristics	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.6 mm (Detection time: 10μs.)				
	VIDIATION TESISTANCE	Destructive	10 to 55 Hz at double amplitude of 2.0 mm				
Expected life	Mechanical (at 180 ti	mes/min.)	Min. 5×10 ⁶				
Expected life	Electrical (at 20 times	s/min.)	Min. 10 ⁵ (15A 250V AC at rated load), Min. 10 ⁵ (10A 250V AC at rated load)				
Conditions	Conditions for operat	ion, 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	d	20 times/min. (at nominal switching capacity)				
Unit weight			Approx. 31	g 1.09 oz			

^{*} Specifications will vary with foreign standards certification ratings. Notes:

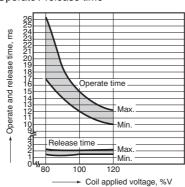
REFERENCE DATA

JC1a type

1. Maximum value for switching capacity



2. Operate / release time

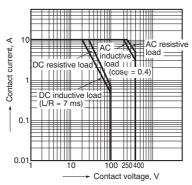


^{*1.} This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

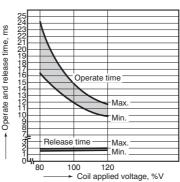
^{*2.} Wave is standard shock voltage of ±1.2×50µs according to JEC-212-1981
*3.The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to "6. Usage, Storage and Transport Conditions" in AMBIENT ENVIRONMENT section in Relay Technical Information.

JC2a type

1. Maximum value for switching capacity

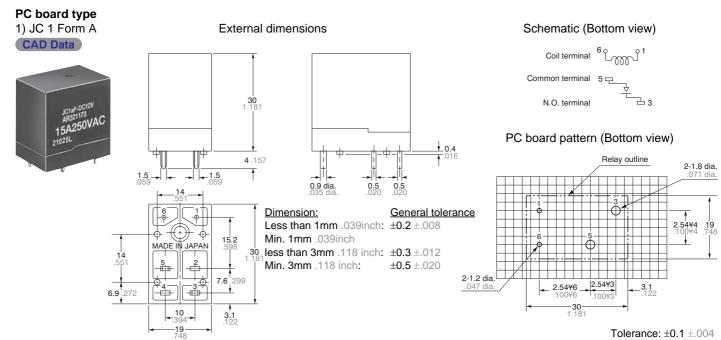


2. Operate / release time

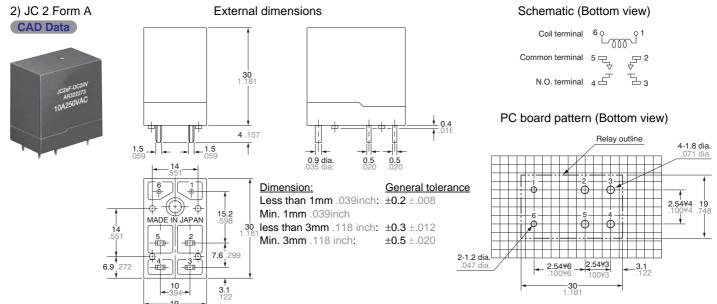


DIMENSIONS (mm inch)

Download **CAD Data** from our Web site.



Tolerance: ±0.1 ±.004



Tolerance: ±0.1 ±.004

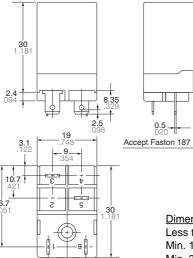


Plug-in type





External dimensions



Schematic (Bottom view)

Dimension:

Less than 1mm .039inch:

Min. 1mm .039inch less than 3mm .118 inch: $\pm 0.3 \pm .012$ Min. 3mm .118 inch: ±0.5 ±.020

General tolerance

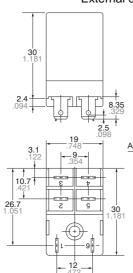
±0.2 ±.008

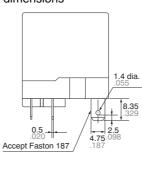
2) JC 2 Form A





External dimensions





Schematic (Bottom view)

Dimension:

Less than 1mm .039inch: Min. 1mm .039inch less than 3mm .118 inch: $\pm 0.3 \pm .012$ Min. 3mm .118 inch:

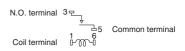
General tolerance

±0.2 ±.008 ±0.5 ±.020 30.5

Top mount type (TM type) 1) JC 1 Form A CAD Data

External dimensions 30.5 Accept Faston 187

Schematic



Hole spacing

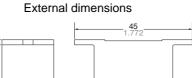
Tolerance: ±0.1 ±.004

General tolerance

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

1.4 dia



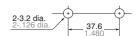


Accept Faston 187

Schematic (Bottom view)

N.O. terminal 3 🖵 mon terminal 2 5 5 Coil terminal Common terminal 2 🗂

Hole spacing



ance: ±0.1 ±.004

		Tolera

Dimension: General tolerance 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: $\pm 0.5 \pm .020$

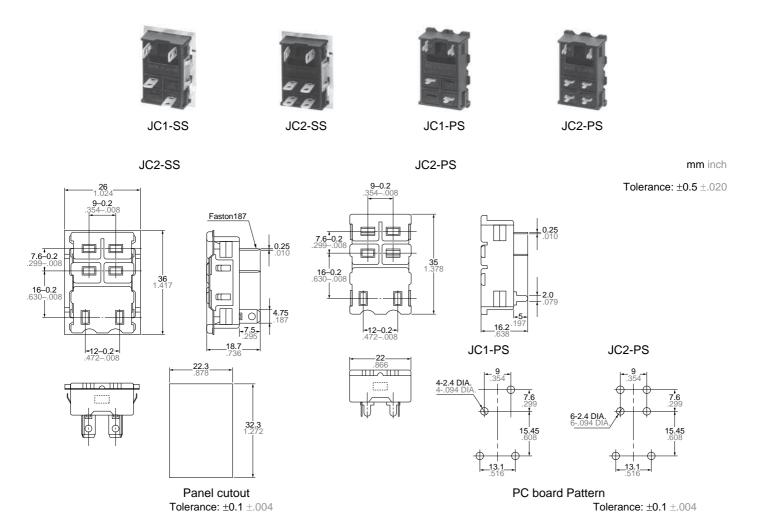
SAFETY STANDARDS

Item	UL/C-UI	UL/C-UL (Recognized) CSA		(Certified) VDE		DE (Certified) TV rating (UL/CSA)					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		LR26550 etc.	15A 250V AC 15A 30V DC 1HP 125V AC 1HP 250V AC	40016951 *1	(cosφ=1.0) 7.5A 250V AC	UL E43028 CSA LR26550		B 08 07 13461 251	15A 250V AC (cosφ=1.0)	606466 *2	15/120A 250V AC
2 Form A	E43028		etc.	10A 250V AC 10A 30V DC 1/3HP 125V AC 1/2HP 250V AC	*1	(cosφ=1.0) 3A 250V AC (cosφ=0.4)	UL E43028 CSA LR26550 etc.		B 08 07 13461 251	10A 250V AC (cos = 1.0) 5A 50V DC (0ms)	606466 *2	5/40A 250V AC

- *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, see Relay Technical Information.

ACCESSORIES



(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.





COMPACT POWER RELAYS FOR HIGH DC LOADS

JC RELAYS (Special Type)

Data sheet addition for JC Relay

- Integrated arc-blowing magnet for high DC loads [H73 type]
- High switching capacity: 20A/60V DC
- Clearance and creepage distance contact/coil: 8 mm
- Two contacts connected in series ensures even higher life expectancy

APPLICATIONS:

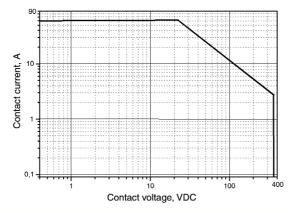
Switching of DC loads in devices such as

- Control of Industrial DC motors
- Emergency power-off for DC loads

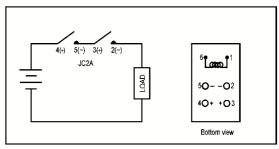
Arrangement		2 Fo	rm A	
Contact material		AgSnO ₂		
Contact connection		one contact	two contacts in series	
Rating	250VDC / 5A	1 × 10⁴ ops.	2 × 10 ⁴ ops.	
(resistive) load	250VDC / 4A	3 × 10⁴ ops.	4 × 10⁴ ops.	
Special loads test	220VDC / 1,6A; L/R = 14.6ms (1s On, 4s Off)	2 × 10 ⁴	3 × 10⁴	
data (min. operations	220VDC / 1A; L/R = 17.4ms (1s On, 4s Off)	2 × 10 ⁴	3 × 10⁴	
at 20°C)	60VDC / 20A; resistive load (30s On, 30s Off)	1 × 10⁴	2 × 10 ⁴	

Mechanical, endurance and coil data according to JC-datasheet

Load limit curve for connection in series



Connection diagram



Attention: For the Blow-out effect, the polarity must be defined as: (-) at contacts: 2, 5 (+) at contacts: 3, 4

ORDERING AND TYPE INFORMATION (values at 20°C)

Туре	Nominal voltage, V DC	Pick-up voltage, V DC (max.)	Drop-out voltage, V DC (min.)	Nominal operating power, W	Coil resistance, Ω (±10%)
JC2aF-DC5V-Y1-F-H73	5	4.0	0.5	1	25
JC2aF-DC6V-Y1-F-H73	6	4.8	0.6	1	36
JC2aF-DC12V-Y1-F-H73	12	9.6	1.2	1	144
JC2aF-DC24V-Y1-F-H73	24	19.2	2.4	1	576
JC2aF-DC48V-Y1-F-H73	48	38.4	4.8	1	2304