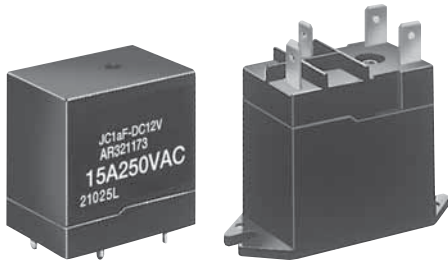


Wide variation
1a 15A, 2a 10A
power relays

JC RELAYS



PC board 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.
- **Clearance and creepage distance contact/coil:**
8 mm
- **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

ORDERING INFORMATION



Contact arrangement

1a: 1 Form A

2a: 2 Form A

Mounting classification

Nil: PC board terminal

TM: Top mounting

Nominal coil voltage

DC6V, DC12V, DC24V, DC48V

Contact material

F: AgSnO₂ type

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

TYPES

Contact arrangement	Nominal coil voltage	PC board type	Top mounting type
		Part No.	Part No.
1 Form A	6V DC	JC1aF-DC6V-F	JC1aF-TM-DC6V-F
	12V DC	JC1aF-DC12V-F	JC1aF-TM-DC12V-F
	24V DC	JC1aF-DC24V-F	JC1aF-TM-DC24V-F
	48V DC	JC1aF-DC48V-F	JC1aF-TM-DC48V-F
2 Form A	6V DC	JC2aF-DC6V-F	JC2aF-TM-DC6V-F
	12V DC	JC2aF-DC12V-F	JC2aF-TM-DC12V-F
	24V DC	JC2aF-DC24V-F	JC2aF-TM-DC24V-F
	48V DC	JC2aF-DC48V-F	JC2aF-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)
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	
	48V DC			18.8mA	2,560Ω	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	
	48V DC			20.8mA	2,304Ω	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	—
		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	
Mechanical characteristics	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)	
	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 (15A 250V AC at rated load), Min. 10 ⁵ (10A 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.

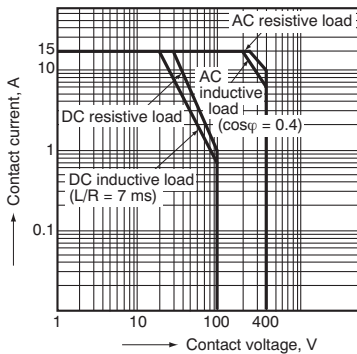
*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981

*3. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to "6. Usage, Storage and Transport Conditions" in [AMBIENT ENVIRONMENT](#) section in [Relay Technical Information](#).

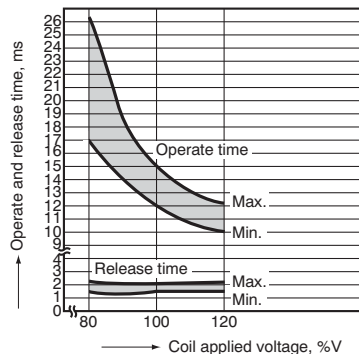
REFERENCE DATA

JC1a type

1. Maximum value for switching capacity

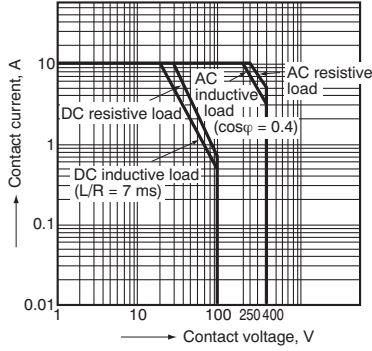


2. Operate / release time

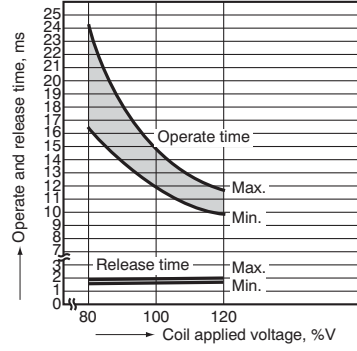


JC2a type

1. Maximum value for switching capacity



2. Operate / release time



DIMENSIONS (mm inch)

Download [CAD Data](#) from our Web site.

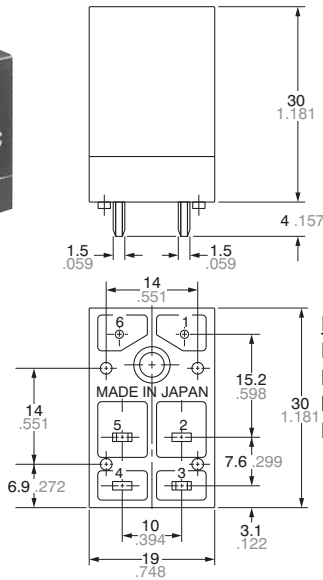
PC board type

1) JC 1 Form A

[CAD Data](#)



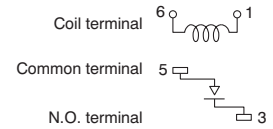
External dimensions



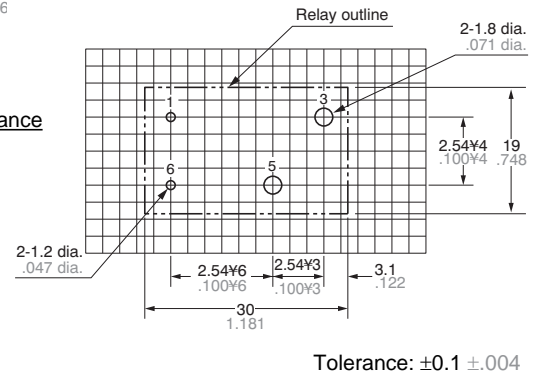
Dimension:
 Less than 1mm .039inch: $\pm 0.2 \pm 0.08$
 Min. 1mm .039inch
 less than 3mm .118 inch: $\pm 0.3 \pm 0.12$
 Min. 3mm .118 inch: $\pm 0.5 \pm 0.20$

General tolerance

Schematic (Bottom view)



PC board pattern (Bottom view)

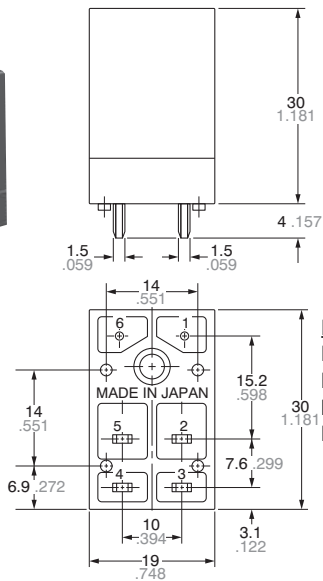


2) JC 2 Form A

[CAD Data](#)



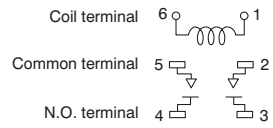
External dimensions



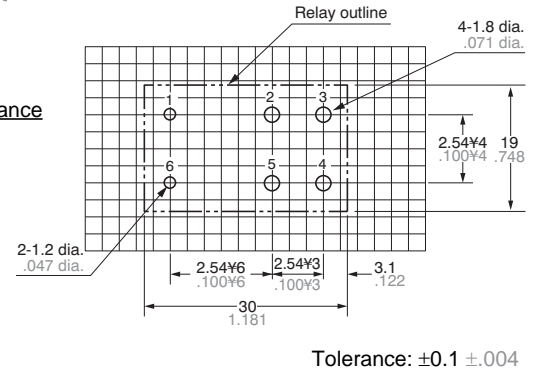
Dimension:
 Less than 1mm .039inch: $\pm 0.2 \pm 0.08$
 Min. 1mm .039inch
 less than 3mm .118 inch: $\pm 0.3 \pm 0.12$
 Min. 3mm .118 inch: $\pm 0.5 \pm 0.20$

General tolerance

Schematic (Bottom view)



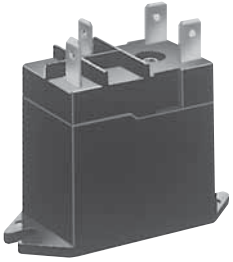
PC board pattern (Bottom view)



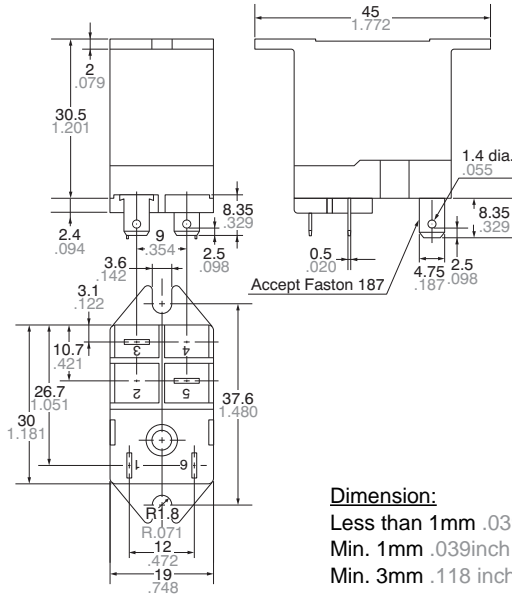
Top mount type (TM type)

1) JC 1 Form A

[CAD Data](#)



External dimensions



Dimension:

Less than 1mm .039inch:

Min. 1mm .039inch less than 3mm .118 inch: $\pm 0.3 \pm 0.12$

Min. 3mm .118 inch:

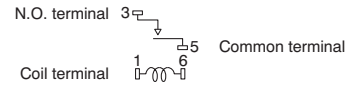
General tolerance

$\pm 0.2 \pm 0.08$

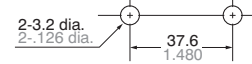
$\pm 0.3 \pm 0.12$

$\pm 0.5 \pm 0.20$

Schematic



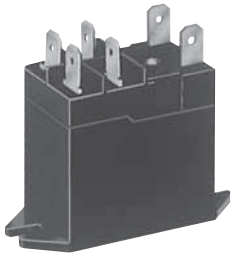
Hole spacing



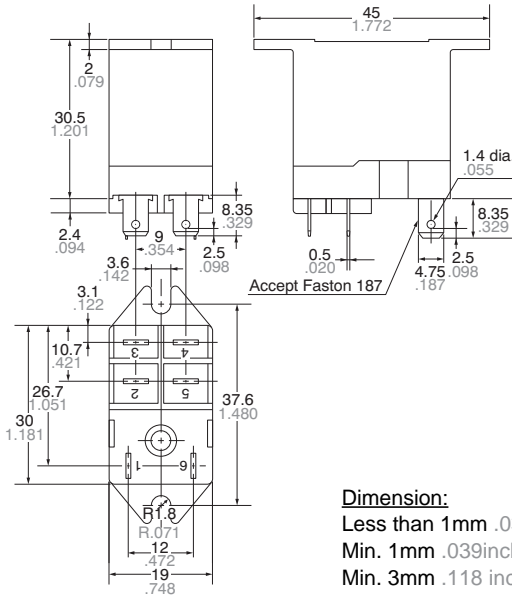
Tolerance: $\pm 0.1 \pm 0.04$

2) JC 2 Form A

[CAD Data](#)



External dimensions



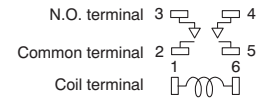
Dimension:

Less than 1mm .039inch:

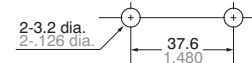
Min. 1mm .039inch less than 3mm .118 inch: $\pm 0.3 \pm 0.12$

Min. 3mm .118 inch:

Schematic (Bottom view)



Hole spacing



Tolerance: $\pm 0.1 \pm 0.04$

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 (cosφ=1.0) 7.5A 250V AC (cosφ=0.4) 10A 30V DC (0ms)	UL E43028 CSA LR26550	TV-8	B 08 07 13461 251	15A 250V AC (cosφ=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 (cosφ=1.0) 3A 250V AC (cosφ=0.4) 5A 30V DC (0ms)	UL E43028 CSA LR26550 etc.	TV-5	B 08 07 13461 251	10A 250V AC (cosφ=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, see [Relay Technical Information](#).

ACCESSORIES



JC1-SS



JC2-SS

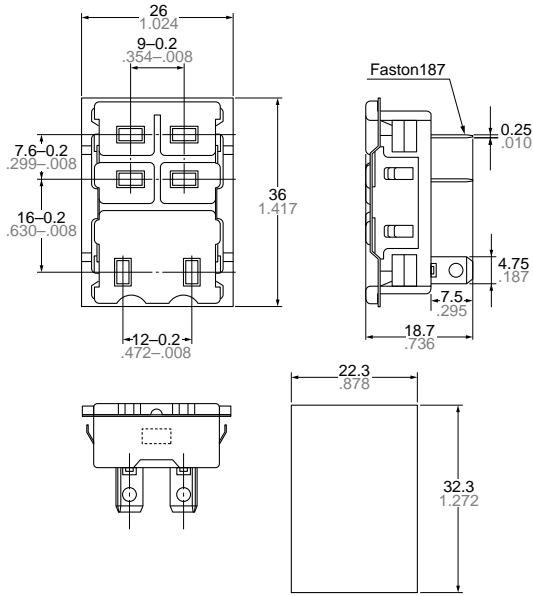


JC1-PS



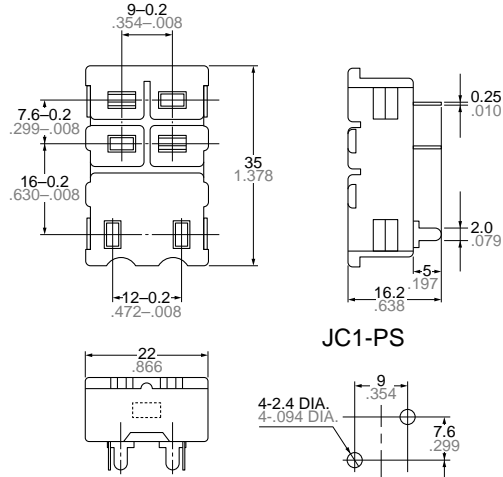
JC2-PS

JC2-SS



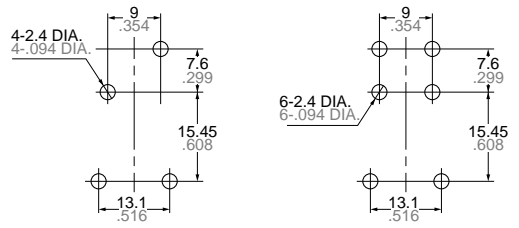
Panel cutout
Tolerance: $\pm 0.1 \pm .004$

JC2-PS



JC1-PS

JC2-PS



PC board Pattern
Tolerance: $\pm 0.1 \pm .004$

mm inch

Tolerance: $\pm 0.5 \pm .020$

(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.



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

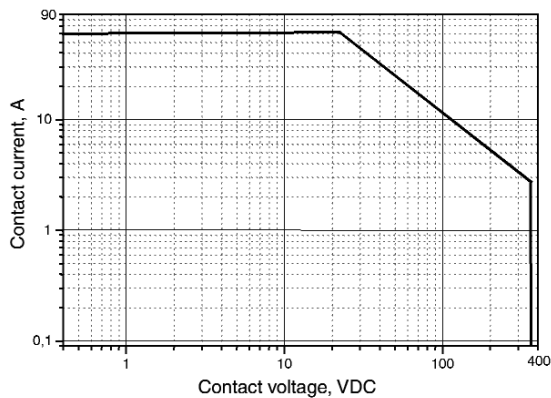
APPLICATIONS: Switching of DC loads in devices such as

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

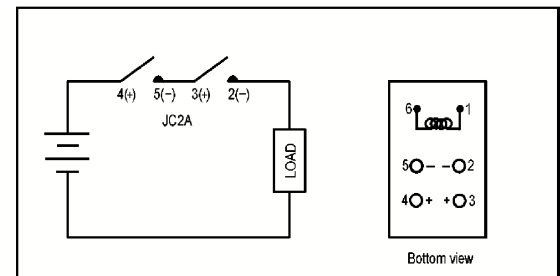
Arrangement		2 Form A	
Contact material		AgSnO ₂	
Contact connection		one contact	two contacts in series
Rating (resistive) load	250VDC / 5A	1 × 10 ⁴ ops.	2 × 10 ⁴ ops.
	250VDC / 4A	3 × 10 ⁴ ops.	4 × 10 ⁴ ops.
Special loads test data (min. operations at 20°C)	220VDC / 1,6A; L/R = 14.6ms (1s On, 4s Off)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

Type	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