Surge withstand voltage: 6kV
1a/1c 30A power relays

JT-V RELAYS

PCB type

TMP type

FEATURES

- **Surge breakdown voltage: 6,000 V**
- **High switching capacity: 30 A for 1 Form A**
- **2 contact arrangements: 1 Form A or 1 Form C**
- **"TMP" types available**
- **UL/C-UL recognized**
- **Class F types standard**

TYPICAL APPLICATIONS

1. **Home appliances**
   Oven, Air heating equipment
2. **Industrial equipment**
   Lighting control, Power supply, Invertor

RoHS compliant

ORDERING INFORMATION

JTV □ □ - □ - □

Contact arrangement
1a: 1 Form A
1: 1 Form C

Protective construction
S: Sealed type
G: Dust cover type

Mounting classification
TMP: TMP type
PA: PCB type

Nominal coil voltage, DC
12V, 18V, 24V, 48V

Notes: 1. Certified by UL/C-UL
2. 5 V, 6 V, 9 V DC types are also available. Please contact us for details.

TYPES

1. 1 Form A Dust cover type

Nominal coil voltage	Part No.	
	PCB type	TMP type
12V DC	JTV1aG-PA-12V	JTV1aG-TMP-12V
18V DC	JTV1aG-PA-18V	JTV1aG-TMP-18V
24V DC	JTV1aG-PA-24V	JTV1aG-TMP-24V
48V DC	JTV1aG-PA-48V	JTV1aG-TMP-48V

Standard packing: PCB type: Carton: 50 pcs.; Case: 500 pcs.
TMP type: Carton: 50 pcs.; Case: 300 pcs.

2. 1 Form C Dust cover type

Nominal coil voltage	Part No.	
	PCB type	TMP type
12V DC	JTV1G-PA-12V	JTV1G-TMP-12V
18V DC	JTV1G-PA-18V	JTV1G-TMP-18V
24V DC	JTV1G-PA-24V	JTV1G-TMP-24V
48V DC	JTV1G-PA-48V	JTV1G-TMP-48V

Standard packing: PCB type: Carton: 50 pcs.; Case: 500 pcs.
TMP type: Carton: 50 pcs.; Case: 300 pcs.

3. 1 Form A Sealed type

Nominal coil voltage	Part No.	
	PCB type	TMP type
12V DC	JTV1aS-PA-12V	JTV1aS-TMP-12V
18V DC	JTV1aS-PA-18V	JTV1aS-TMP-18V
24V DC	JTV1aS-PA-24V	JTV1aS-TMP-24V
48V DC	JTV1aS-PA-48V	JTV1aS-TMP-48V

Standard packing: PCB type: Carton: 50 pcs.; Case: 500 pcs.
TMP type: Carton: 50 pcs.; Case: 300 pcs.

4. 1 Form C Sealed type

Nominal coil voltage	Part No.	
	PCB type	TMP type
12V DC	JTV1S-PA-12V	JTV1S-TMP-12V
18V DC	JTV1S-PA-18V	JTV1S-TMP-18V
24V DC	JTV1S-PA-24V	JTV1S-TMP-24V
48V DC	JTV1S-PA-48V	JTV1S-TMP-48V

Standard packing: PCB type: Carton: 50 pcs.; Case: 500 pcs.
TMP type: Carton: 50 pcs.; Case: 300 pcs.

RATING

1. Coil data

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 20°C 68°F)
12V DC	75%V or less of nominal voltage (Initial)	10%V or more of nominal voltage (Initial)	83.3mA	144Ω	1,000mW	120%V of nominal voltage
18V DC			55.6mA	324Ω		
24V DC			41.7mA	576Ω		
48V DC			20.8mA	2,304Ω		

2. Specifications

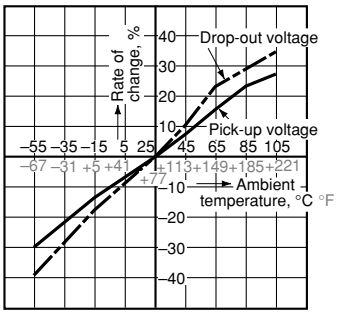
Characteristics	Item		Specifications	
Contact	Contact material		$AgSnO_2$ type	
	Arrangement		1 Form A	1 Form C
	Contact resistance (Initial)		Max. 50 mΩ (By voltage drop 6 V DC 1A)	
Rating	Nominal switching capacity (resistive load)		20A 277V AC	N.C.: 10A 277V AC, N.O.: 20A 277V AC
	Max. switching power (resistive load)		8,310VA (30A 277V AC)	N.C.: 2,770VA, N.O.: 5,540VA
	Max. switching voltage		277V AC	
	Max. switching current		30A	N.C.: 10A, N.O.: 20A
	Nominal operating power		Approx. 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	1,200 Vrms for 1 min. (Detection current: 10 mA)	
		Between contact and coil	3,500 Vrms for 1 min. (Detection current: 10 mA)	
	Surge breakdown voltage*2 (Between contact and coil) (Initial)		6,000 V	
	Operate time (at nominal voltage) (at 20°C 68°F) (Initial)		Max. 15 ms (excluding contact bounce time.)	
	Release time (at nominal voltage) (at 20°C 68°F) (Initial)		Max. 10 ms (excluding contact bounce time) (Without diode)	
Mechanical characteristics	Shock resistance	Functional	Min. 98 m/s² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)	
		Destructive	Min. 980 m/s² (Half-wave pulse of sine wave: 6 ms.)	
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 1.5 mm (Detection time: 10μs.)	
		Destructive	10 to 55 Hz at double amplitude of 2 mm	
Expected life	Mechanical		Min. 1×10^7	
	Electrical (at 20 times/min.)*3		Min. 1×10^5 (20A 277V AC at resistive load)	N.O.: Min. 1×10^5 (20A 277V AC at resistive load) N.C.: Min. 1×10^5 (10A 277V AC at resistive load)
Conditions	Conditions for operation, transport and storage*4		Ambient temperature: –55°C to +85°C –67°F to +185°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			PCB type: Approx. 25 g .88 oz TMP type: Approx. 30 g 1.06 oz	

* Specifications will vary with foreign standards certification ratings.

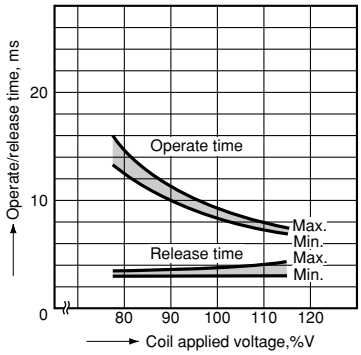
Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.
*2. Wave is standard shock voltage of ±1.2×50μs according to JEC-212-1981
*3. In order to obtain the full rated life cycles, the relay should be properly vented by removing the vent nib. More detail, please look at caution for NOTES.
*4. 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

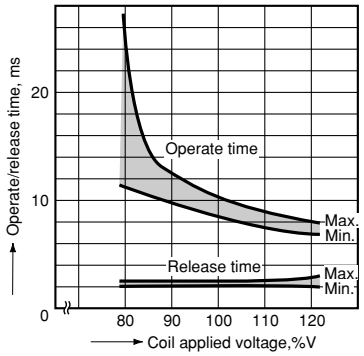
1. Change of rate of pick-up and drop-out voltage (at 20°C 68°F)
Sample: JTV1S-TMP-24V (6 pcs.)



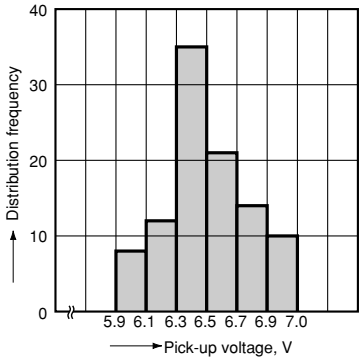
2. Operate/release time
Sample: JTV1S-TMP-24V



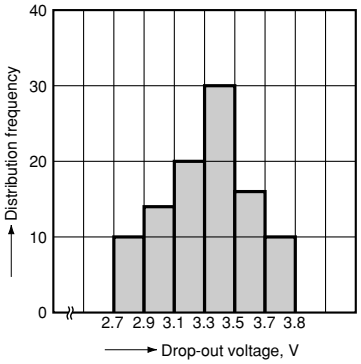
3. Operate/release time
Sample: JTV1aS-PA-24V



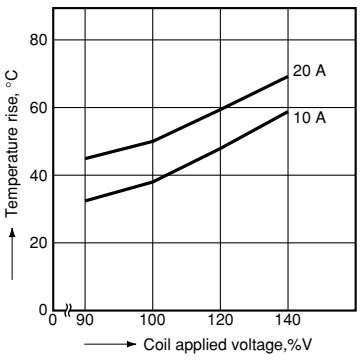
4. Distribution frequency of pick-up voltage (at 20°C 68°F)
Sample: JTV1S-TMP-12V (100 pcs.)



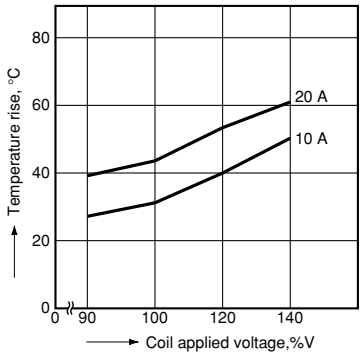
5. Distribution frequency of drop-out voltage (at 20°C 68°F)
Sample: JTV1S-TMP-12V (100 pcs.)



6.-(1) Coil temperature rise (TMP type)*
Ambient temperature: 25°C 77°F
Sample: JTV1aS-TMP-12V (6 pcs.)



6.-(2) Coil temperature rise (TMP type)*
Ambient temperature: 85°C 185°F
Sample: JTV1aS-TMP-12V (6 pcs.)



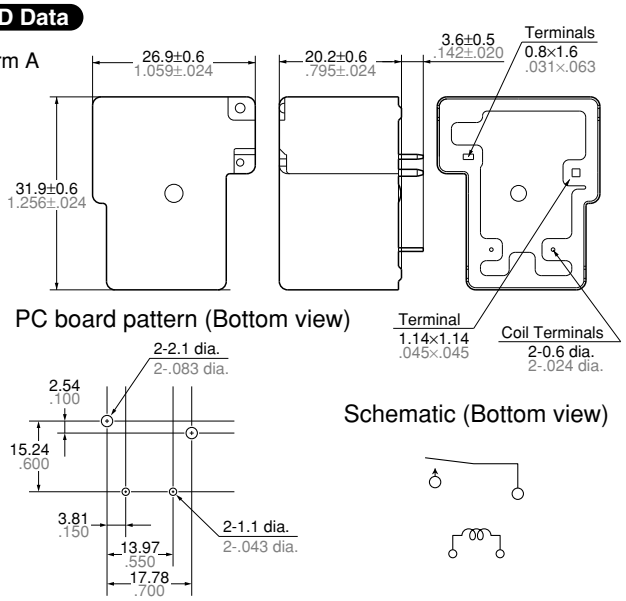
DIMENSIONS (mm inch)

The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

1. PCB type

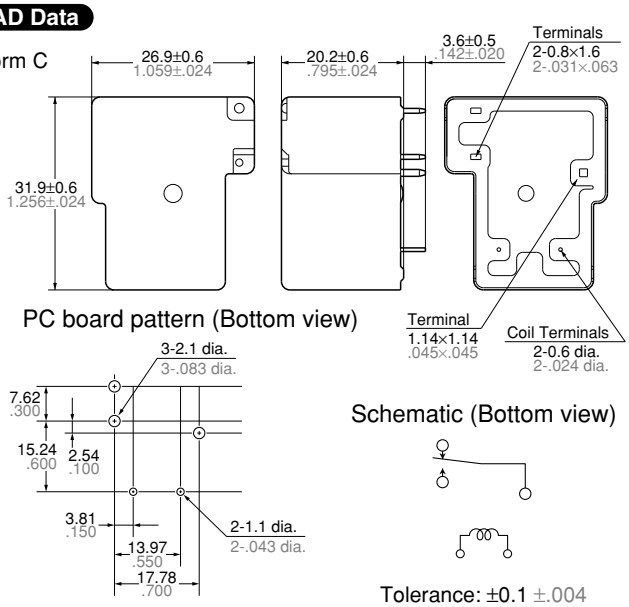
CAD Data

1 Form A



CAD Data

1 Form C

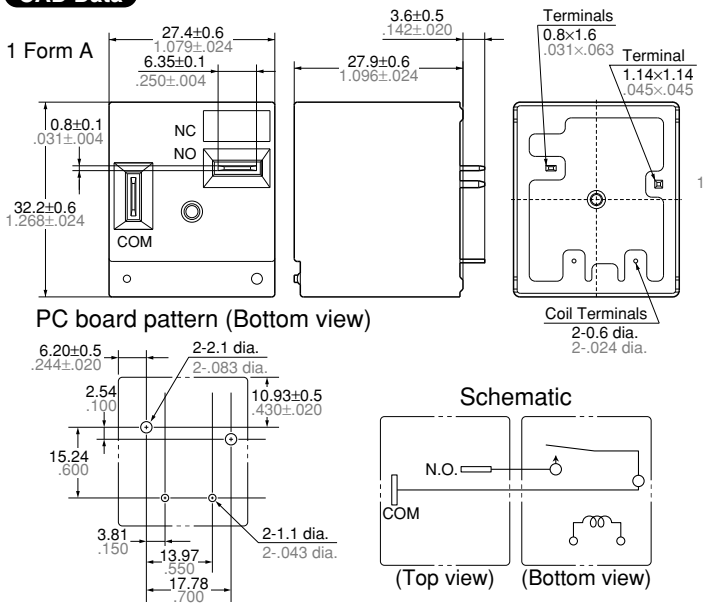


Tolerance: ±0.1 ±.004

2. TMP type

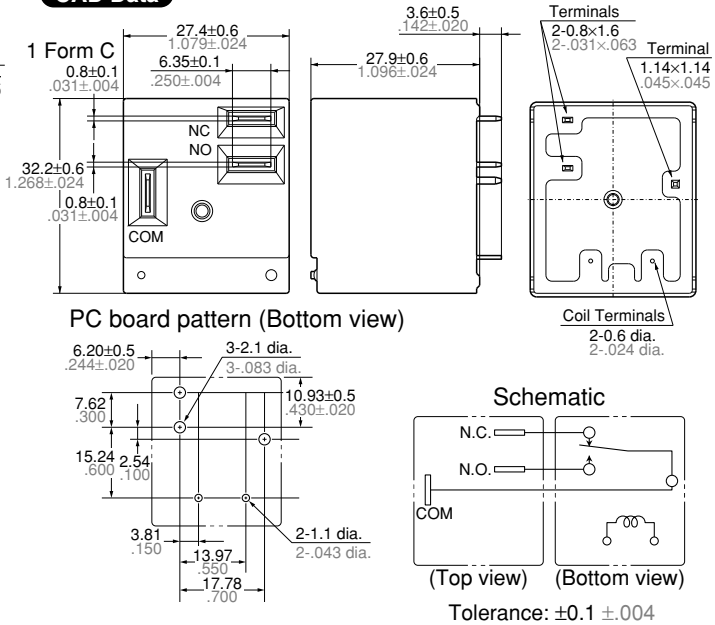
CAD Data

1 Form A



CAD Data

1 Form C



Tolerance: ±0.1 ±.004

SAFETY STANDARDS

Item		UL/C-UL (Recognized)	
		File No.	Contact rating
1 Form A		E43028	30A 277V AC, 30A 28V DC, 2HP 250V AC
1 Form C	N.O.	E43028	20A 277V AC, 20A 28V DC, 2HP 250V AC
	N.C.	E43028	10A 277V AC, 10A 28V DC, ½HP 250V AC

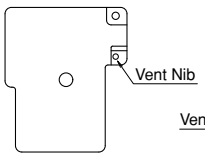
* CSA standard: Certified by C-UL

NOTES

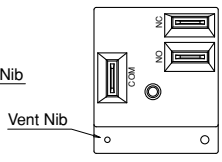
1. Electrical life

In order to obtain the full rated life cycles, the relay should be properly vented by removing the vent nib after the soldering/ washing process.

• PCB type



• TMP type



Please contact .....

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