

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

JT-V RELAYS



PCB type



TMP type

RoHS compliant

FEATURES

- Surge withstand 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 type standard

TYPICAL APPLICATIONS

- Oven
- Heating & ventilation
- Home appliance

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) | Max. 15 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 | Min. 98 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.) |
| | | Destructive | Min. 980 m/s ² (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

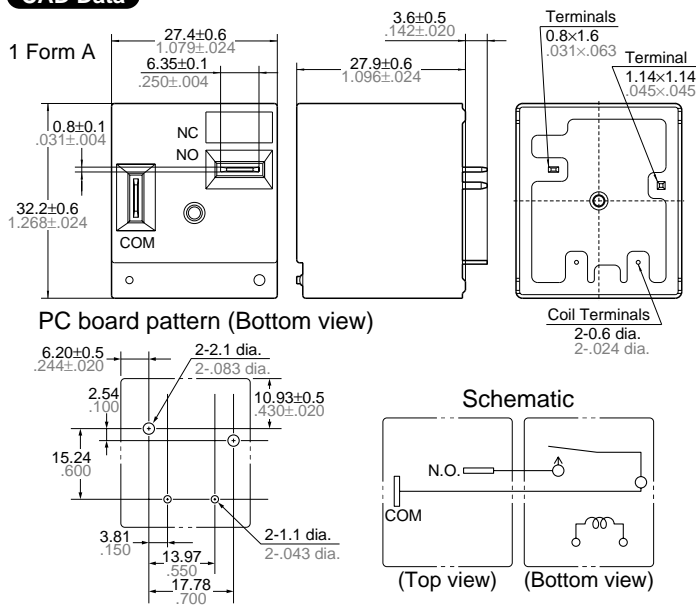


CAD Data

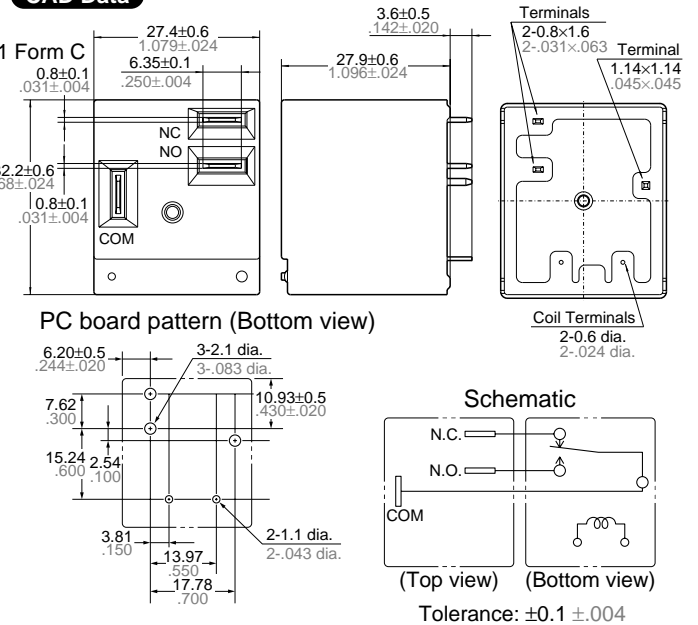


2. TMP type

CAD Data



CAD Data



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. | 20A 277V AC, 20A 28V DC, 2HP 250V AC |
| | N.C. | 10A 277V AC, 10A 28V DC, ½HP 250V AC |

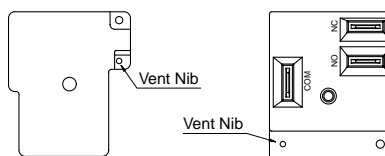
* CSA standard: Certified by C-UL

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



For Cautions for Use.