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# SURGE VOLTAGE 6,000 V 30 AMP. RELAY

# JT-V RELAYS



PCB type



TMP type

## FEATURES

- **Surge withstand voltage: Min. 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**

## SPECIFICATIONS

### Contacts

| | | PCB & TMP type | |
|---|---|---|---|
| Arrangement | | 1 Form A | 1 Form C |
| Initial contact resistance, max. (By voltage drop method, 6 V DC 1 A) | | 50 mΩ | |
| Contact material | | Silver alloy | |
| Rating | Max. switching power | 8310 VA | N.C.: 2770 VA<br>N.O.: 5540 VA |
| | Max. switching voltage | 277 V AC | |
| | Max. switching current | 30 A | N.C.: 10 A<br>N.O.: 20 A |
| | Min. switching capacity#1 | 100 mA, 5 V DC | |
| Expected life | Mechanical | Min. $1\times10^7$ | |
| | Electrical (Resistive load) | 20 A 277 V AC<br>Min. $1\times10^5$* | N.O.:<br>20 A 277 V AC<br>Min. $1\times10^5$*<br>N.C.:<br>10 A 277 V AC<br>Min. $1\times10^5$* |

* The life is for open venting-hole condition.

**Coil** at 20°C 68°F

| | PCB & TMP type |
|---|---|
| Nominal operating power | Approx. 1,000 mW |

### Characteristics

| | | PCB & TMP type |
|---|---|---|
| Initial insulation resistance*1 | | Min. 100 MΩ at 500 V DC |
| Initial breakdown voltage*2 | Between contacts | 1,200 Vrms |
| | Between contacts and coil | 3,500 Vrms |
| Initial surge voltage between contact and coil | | Min. 6,000 V*3 |
| Operate time*4 (at nominal voltage) | | Max. 15 ms |
| Release time (without diode)*4 (at nominal voltage) | | Max. 10 ms |
| Shock resistance | Functional*5 | Min. 98 m/s² {10 G} |
| | Destructive*6 | Min. 980 m/s² {100 G} |
| Vibration resistance | Functional*7 | Max. 88.2 m/s² {9 G}, 10 to 55 Hz at double amplitude of 1.5 mm |
| | Destructive | Max. 117.6 m/s² {12 G}, 10 to 55 Hz at double amplitude of 2 mm |
| Conditions for operation, transport and storage*8 (Not freezing and condensing at low temperature) | Ambient temp. | –55°C to +85°C<br>–67°F to +185°F |
| | Humidity | 5 to 85% R.H. |
| Unit weight | | PCB type: Approx. 25 g (.88 oz)<br>TMP type: Approx. 30 g (1.06 oz) |

#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.

**Remarks**

* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10 mA
*3 Ware is standard shock voltage of ±1.2 × 50μs according to JEC-212-1981.
*4 Excluding contact bounce time
*5 Half-wave pulse of sine wave: 11ms; detection time: 10μs
*6 Half-wave pulse of sine wave: 6ms
*7 Detection time: 10μs
*8 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT

## TYPICAL APPLICATIONS

- Oven
- Heating & ventilation
- Home appliance

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# ORDERING INFORMATION

JT-V Relays (PCB and TMP type)

JTV | 1a | S | TMP | 12V

| Contact arrangement | Protective construction | Mounting classification | Coil voltage |
|---|---|---|---|
| 1a: 1 Form A<br>1: 1 Form C | S: Sealed type<br>G: Dust cover type | PA: PCB type<br>TMP: TMP type | DC 12, 18, 24, 48 V |

Notes: 1. UL/C-UL approved type is standard.
2. 5 V, 6 V, 9 V DC types are also available. Please contact us for details.
3. Standard packing: PCB type: Carton: 50 pcs. Case: 500 pcs.
TMP type: Carton: 50 pcs. Case: 300 pcs.

# COIL DATA (at 20°C 68°F)

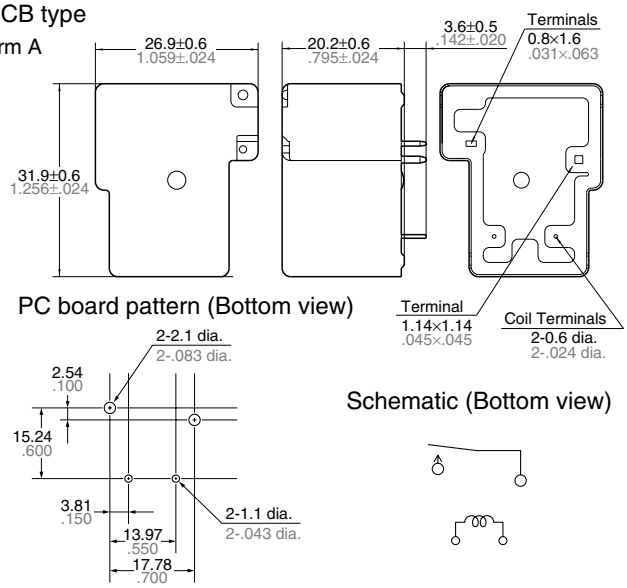
| Nominal voltage, V DC | Pick-up voltage, V DC (max.) (Initial) | Drop-out voltage, V DC (min.) (Initial) | Coil resistance, Ω (±10%) | Nominal operating power, mW | Max. allowable voltage, V DC (at 70°C 158°F) |
|---|---|---|---|---|---|
| | | | PCB & TMP | PCB & TMP | |
| 12 | 9.0 | 1.2 | 144 | 1000 | 14.4 |
| 18 | 13.5 | 1.8 | 324 | 1000 | 21.6 |
| 24 | 18.0 | 2.4 | 576 | 1000 | 28.8 |
| 48 | 36.0 | 4.8 | 2304 | 1000 | 57.6 |

# DIMENSIONS

mm inch

1. PCB type

1 Form A



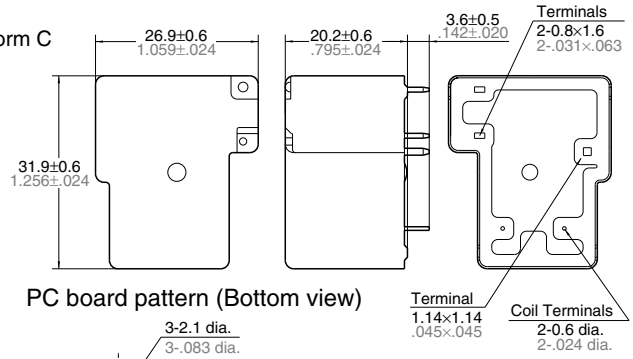

PC board pattern (Bottom view)



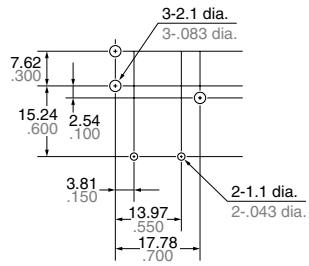

Schematic (Bottom view)



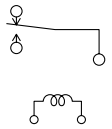
1 Form C




PC board pattern (Bottom view)



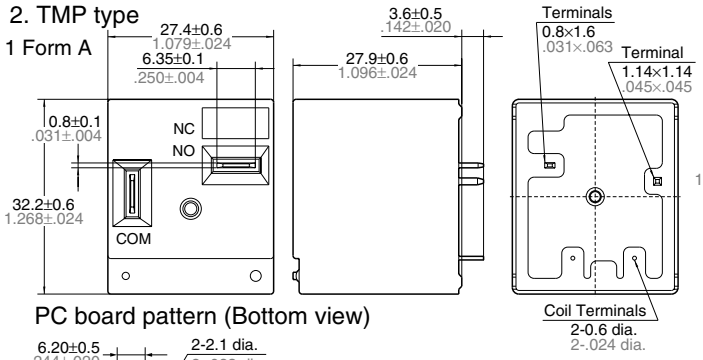

Schematic (Bottom view)



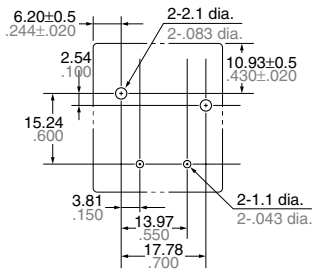
Tolerance: ±0.1 ±.004

2. TMP type

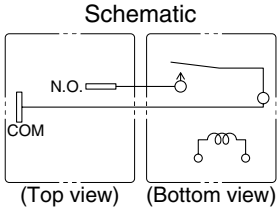
1 Form A



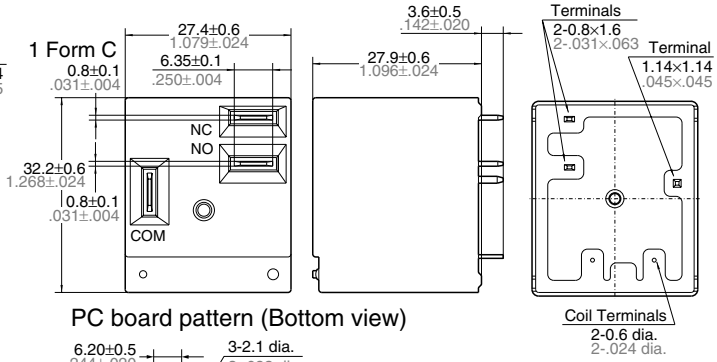

PC board pattern (Bottom view)



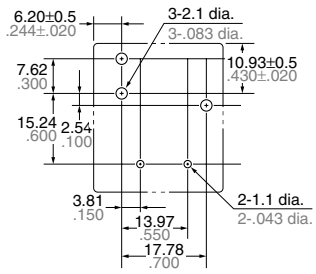

Schematic



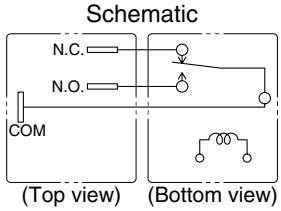

1 Form C




PC board pattern (Bottom view)




Schematic

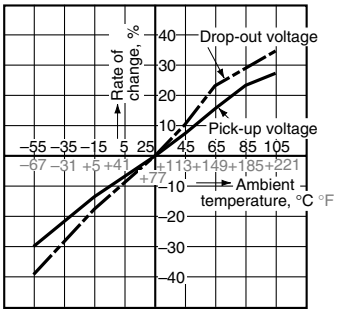



Tolerance: ±0.1 ±.004

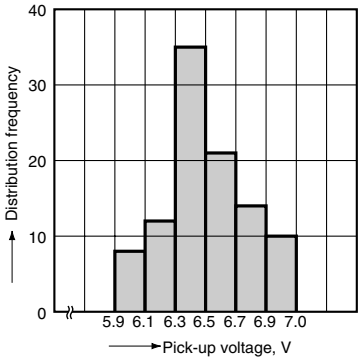
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# REFERENCE DATA

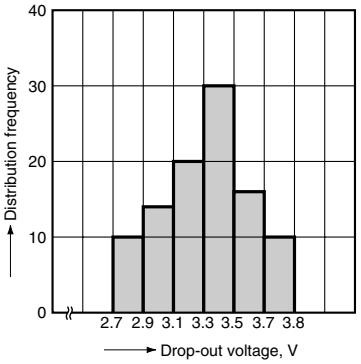
1. Change of rate of pick-up and drop-out voltage (at 20°C 68°F)
Sample: JTV1S-TMP-24V (6 pcs.)



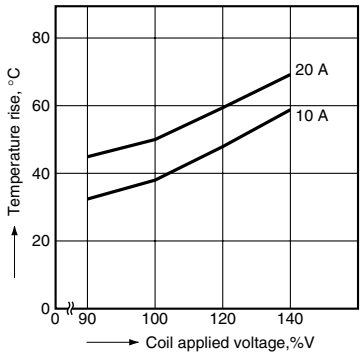

2. Distribution frequency of pick-up voltage (at 20°C 68°F)
Sample: JTV1S-TMP-12V (100 pcs.)



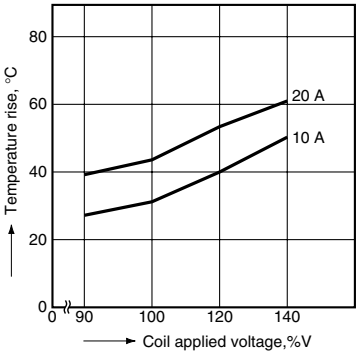

3. Distribution frequency of drop-out voltage (at 20°C 68°F)
Sample: JTV1S-TMP-12V (100 pcs.)




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




Ambient temperature: 85°C 185°F
Sample: JTV1aS-TMP-12V (6 pcs.)




* Coil temperature rise of sealed types are same as data of the dust cover type.

## For Cautions for Use, see Relay Technical Information

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