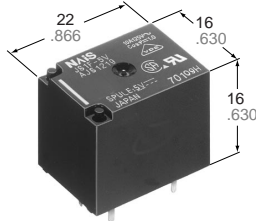


NAIS

ULTRA-MINIATURE PC BOARD TYPE POWER RELAY

JS-RELAYS



mm inch

FEATURES

- Ultra-miniature size with universal terminal footprint
- High contact capacity: 10 A
- UL class B coil insulation type available
- TV-5 type available
 - 1 Form A type → TV-5
 - 1 Form C type → TV-5 (N.O. side only)
- VDE, TÜV also approved
- Sealed construction for automatic cleaning

SPECIFICATIONS

Contact

| | | |
|--|---|-------------------------------|
| Arrangement | 1 Form A, 1 Form C | |
| Initial contact resistance, max. (By voltage drop 6 V DC 1 A) | 100 mΩ | |
| Contact material | Silver alloy | |
| Rating (resistive load) | Nominal switching capacity | 10 A 125 V AC 6 A 277 V AC |
| | Max. switching power | 1,662 VA |
| | Max. switching voltage | 250 V AC, 100 V DC |
| | Max. switching current | 10 A (AC), 5 A (DC) |
| Expected life (min. ope.) | Mechanical (at 180 cpm) | 10 ⁷ |
| | Electrical at 10 A 125 V AC, 6 A 277 V AC resistive (at 20 cpm) | 10 ⁵ |

Coil

| | |
|-------------------------|--------|
| Nominal operating power | 360 mW |
|-------------------------|--------|

Remarks

- * Specifications will vary with foreign standards certification ratings.
- *1 Detection current: 10mA
- *2 Excluding contact bounce time
- *3 Half-wave pulse of sine wave: 11ms; detection time: 10μs
- *4 Half-wave pulse of sine wave: 6ms
- *5 Detection time: 10μs
- *6 Refer to 5. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT (Page 24).

Characteristics

| | | |
|---|---------------------------|--|
| Max. operating speed | 20 cpm | |
| Initial insulation resistance | Min. 100 MΩ (at 500 V DC) | |
| Initial breakdown voltage*1 | Between open contacts | 750 Vrms for 1 min. |
| | Between contacts and coil | 1,500 Vrms for 1 min. |
| Operate time*2 (at nominal voltage) | Approx. 10 ms | |
| Release time(without diode)*2 (at nominal voltage) | Approx. 10 ms | |
| Temperature rise (at nominal voltage) | Max. 35°C | |
| Shock resistance | Functional*3 | Min. 98 m/s ² {10 G} |
| | Destructive*4 | Min. 980 m/s ² {100 G} |
| Vibration resistance | Functional*5 | Approx. 98 m/s ² {10 G}, 10 to 55 Hz at double amplitude of 1.6 mm |
| | Destructive | Approx. 117.6 m/s ² {12 G}, 10 to 55 Hz at double amplitude of 2 mm |
| Conditions for operation, transport and storage*6 (Not freezing and condens- ing at low temperature) | Ambient temp. | -40°C to +70°C -40°F to +158°F |
| | Humidity | 5 to 85% R.H. |
| Unit weight | Approx. 12 g .423 oz | |

TYPICAL APPLICATIONS

- Home appliances
Air conditioner, heater, etc.
- Automotive
Power-window, car antenna, door-lock,
etc.
- Office machines
PPC, facsimile, etc.
- Vending machines

ORDERING INFORMATION

Ex. JS 1a — F — B — 12V

| Contact arrangement | Protective construction | Coil insulation class | Coil voltage (DC) |
|-----------------------------|--|--|------------------------------|
| 1: 1 Form C 1a: 1 Form A | Nil: Sealed type F: Flux-resistant type | Nil: Class A insulation B: Class B insulation | 5, 6, 9, 12, 18, 24, 48 V |

UL/CSA, VDE, TÜV approved type is standard.

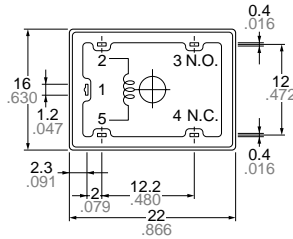
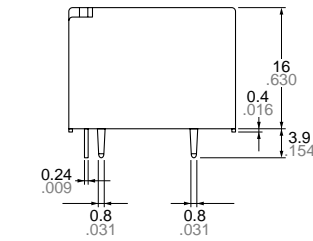
- Notes: 1. Standard packing: Carton: 100 pcs. Case: 500 pcs.
2. When ordering TV rated (TV-5) types, add suffix -TV.

COIL DATA

| Part No. | | | | Nominal voltage, V DC | Pick-up voltage, V DC (max.) (at 20°C/68°F) | Drop-out voltage, V DC (min.) (at 20°C/68°F) | Coil resistance, Ω (±10%) (at 20°C/68°F) | Nominal operating current, mA (±10%) (at 20°C/68°F) | Nominal operating power, mW (at 20°C/68°F) | Max. allowable voltage (at 70°C/158°F) |
|-------------|----------|---------------------|----------|-----------------------|---|--|--|---|--|--|
| Sealed type | | Flux-resistant type | | | | | | | | |
| 1 Form A | 1 Form C | 1 Form A | 1 Form C | | | | | | | |
| JS1a-5V | JS1-5V | JS1aF-5V | JS1F-5V | 5 | 3.5 | 0.5 | 69.4 | 72 | 360 | 130%V of nominal voltage |
| JS1a-6V | JS1-6V | JS1aF-6V | JS1F-6V | 6 | 4.2 | 0.6 | 100 | 60 | | |
| JS1a-9V | JS1-9V | JS1aF-9V | JS1F-9V | 9 | 6.3 | 0.9 | 225 | 40 | | |
| JS1a-12V | JS1-12V | JS1aF-12V | JS1F-12V | 12 | 8.4 | 1.2 | 400 | 30 | | |
| JS1a-18V | JS1-18V | JS1aF-18V | JS1F-18V | 18 | 12.6 | 1.8 | 900 | 20 | | |
| JS1a-24V | JS1-24V | JS1aF-24V | JS1F-24V | 24 | 16.8 | 2.4 | 1,600 | 15 | | |
| JS1a-48V | JS1-48V | JS1aF-48V | JS1F-48V | 48 | 33.6 | 4.8 | 6,400 | 7.5 | | |

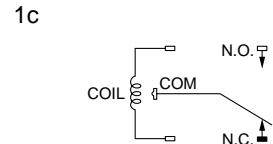
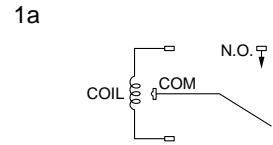
DIMENSIONS

mm inch

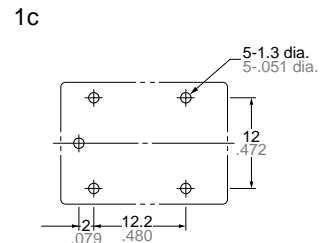
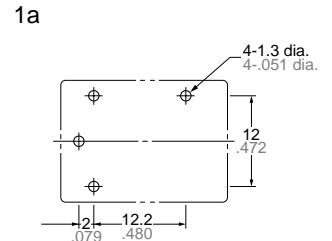


Note: Terminal No. 4 is only for 1 Form C type
General tolerance: ±0.3 ±.012

Schematic (Bottom view)



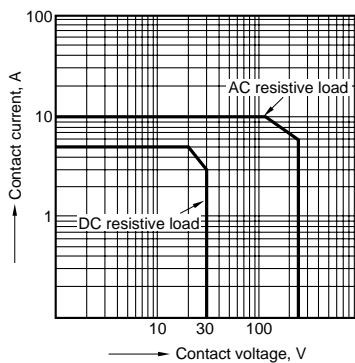
PC board pattern (Copper-side view)



Tolerance: ±0.1 ±.004

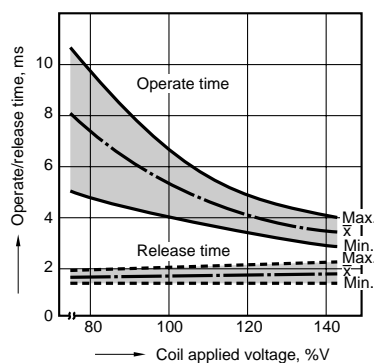
REFERENCE DATA

1. Maximum value for switching capacity



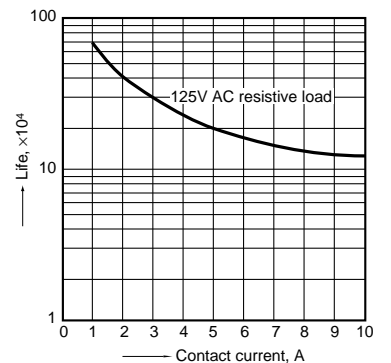
2. Operate/release time

Sample: 25 pcs., JS1-12V



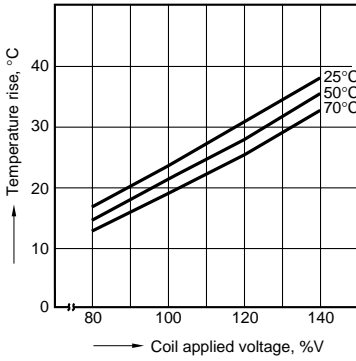
3. Life curve

Ambient temperature: Room temperature



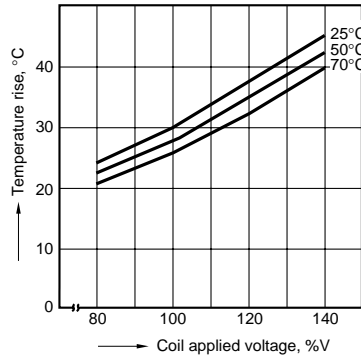
4-(1). Coil temperature rise

Sample: 5 pcs., JS1-12V
 Measured portion: Inside the coil
 Contact current: 5 A



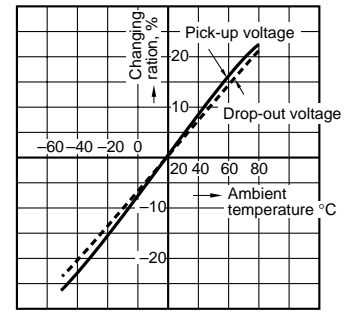
4-(2). Coil temperature rise

Sample: 5 pcs., JS1-12V
 Measured portion: Inside the coil
 Contact current: 10 A



5. Ambient temperature characteristics

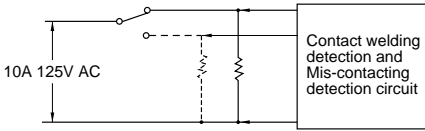
Sample: 6 pcs., JS1-12V



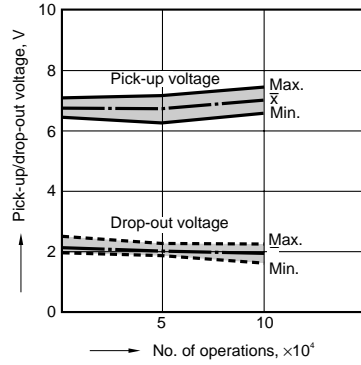
6. Electrical life test

(10 A 125 V AC, resistive load)
 Sample: 6 pcs., JS1-12V
 Operating speed: 20 cpm
 Ambient temperature: room temperature

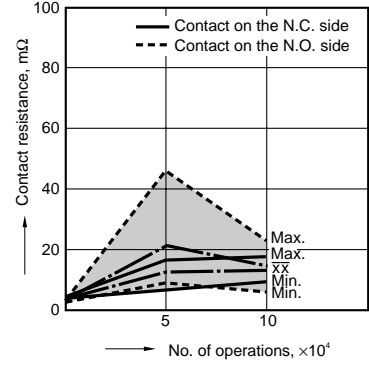
(Circuit)



Change of pick-up and drop-out voltage



Change of contact resistance



For Cautions for Use, see Relay Technical Information (Page 11 to 39).