

mm inch

FEATURES

- Miniature size with universal terminal footprint
- High contact capacity: 10 A
- Class B coil insulation type available
- TV-5 type available (Standard type)
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 (Standard type)

COMMENTS ABOUT Cd FREE

We have introduced Cadmium free type products to reduce the material which is not good for our environment. (The suffix "F" should be added to the part number.) If you are still using Cadmium containing parts, which don't have "F" on the suffix of the part number, please use Cadmium free parts from now on. The life of the Cadmium free parts may be shorter than the Cadmium containing parts based on the load condition, so please evaluate the Cadmium free parts with your actual application before use.

RoHS Directive compatibility information
<http://www.nais-e.com/>

勝特力材料 886-3-5753170
 胜特力电子(上海) 86-21-54151736
 胜特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

SPECIFICATIONS

Contact

| Types | | Standard type | High power type |
|--|--|--|---|
| Arrangement | | 1 Form A, 1 Form C | 1 Form A |
| Initial contact resistance, max. (By voltage drop 6 V DC 1 A) | | 100 mΩ | |
| Contact material | | AgSnO ₂ type | |
| Rating (resistive load) | Nominal switching capacity | 10 A 250 V AC 10 A 125 V AC 6 A 277 V AC | 10 A 250 V AC 10 A 125 V AC 10 A 277 V AC |
| | Max. switching power | 2,500 VA | |
| | Max. switching voltage | 250 V AC, 100 V DC | |
| | Max. switching current | 10 A (AC), 5 A (DC) | |
| | Min. switching capacity*1 | 100 mA, 5 V DC | |
| Expected life (min. ope.) | Mechanical (at 180 cpm) | 10 ⁷ | |
| | Electrical at 10 A 125 V AC, 6 A 277 V AC resistive (standard) | 10 ⁵ | 2×10 ⁵ |
| | 10 A 277 V AC resistive (High power) | | |
| | 10 A 250 V AC resistive (Standard: at 20 cpm) (High power: at 20 cpm, 105°C 221°F)** | 5 × 10 ⁴ (No contact only) | 1.5 × 10 ⁵ |

** Holding voltage should be 60% V of nominal voltage

Coil

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

#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

*1 Detection current: 10mA

*2 Excluding contact bounce time

*3 Half-wave pulse of sine wave: 11ms; detection time: 10μs

Characteristics

| Max. operating speed | | 20 cpm | |
|--|---------------------------|--|------------------------------------|
| Types | | Standard type | High power type |
| 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) | | Max. 10 ms | |
| Release time(without diode)*2 (at nominal voltage) | | Max. 10 ms | |
| Temperature rise (at nominal voltage) | | Max. 35°C, resistive, nominal voltage applied to coil. Contact carrying current: 10A, at 85°C 185°F | |
| 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 condensing at low temperature) | Ambient temp.*7 | -40°C to +85°C -40°F to +185°F | -40°C to +105°C -40°F to +221°F |
| | Humidity | 5 to 85% R.H. | |
| Unit weight | | Approx. 12 g .423 oz | |

*4 Half-wave pulse of sine wave: 6ms

*5 Detection time: 10μs

*6 Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.

*7 When using relays in a high ambient temperature, consider the pick-up voltage rise due to the high temperature (a rise of approx. 0.4% V for each 1°C 33.8°F with 20°C 68°F as a reference) and use a coil impressed voltage that is within the maximum allowable voltage range.

TYPICAL APPLICATIONS

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

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ORDERING INFORMATION



| Contact arrangement | Protective construction | Coil insulation class | Coil voltage (DC) | Contact material |
|---|--|--|---------------------------|----------------------------|
| 1: 1 Form C (Standard) 1a: 1 Form A (Standard) 1aP: 1 Form A (High Power) | Nil: Sealed type F: Flux-resistant type | Nil: Class E insulation B: Class B insulation | 5, 6, 9, 12, 18, 24, 48 V | F: AgSnO ₂ type |

UL/CSA, VDE, TÜV (Standard type only) 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.

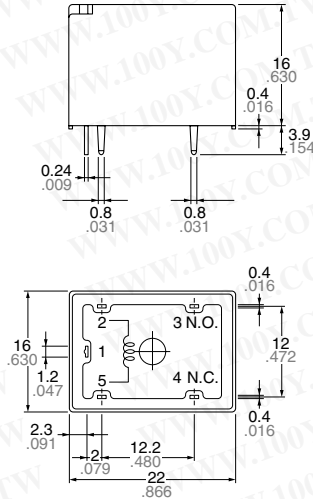
3. Contact arrangement 1aP type is Flux-resistant type only (class B or class F insulation). Please consult us for coil insulation class F.

4. Please inquire about the previous products (Cadmium containing parts).

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 85°C 185°F) |
|---------------|-----------|---------------------|------------|---------------------|-----------------------|---|--|--|---|--|--|
| Standard type | | | | High Power type | | | | | | | |
| Sealed type | | Flux-resistant type | | Flux-resistant type | | | | | | | |
| 1 Form A | 1 Form C | 1 Form A | 1 Form C | 1 Form A | | | | | | | |
| JS1a-5V-F | JS1-5V-F | JS1aF-5V-F | JS1F-5V-F | JS1aPF-B-5V-F | 5 | 3.5 | 0.5 | 69.4 | 72 | 360 | 130%V of nominal voltage |
| JS1a-6V-F | JS1-6V-F | JS1aF-6V-F | JS1F-6V-F | JS1aPF-B-6V-F | 6 | 4.2 | 0.6 | 100 | 60 | | |
| JS1a-9V-F | JS1-9V-F | JS1aF-9V-F | JS1F-9V-F | JS1aPF-B-9V-F | 9 | 6.3 | 0.9 | 225 | 40 | | |
| JS1a-12V-F | JS1-12V-F | JS1aF-12V-F | JS1F-12V-F | JS1aPF-B-12V-F | 12 | 8.4 | 1.2 | 400 | 30 | | |
| JS1a-18V-F | JS1-18V-F | JS1aF-18V-F | JS1F-18V-F | JS1aPF-B-18V-F | 18 | 12.6 | 1.8 | 900 | 20 | | |
| JS1a-24V-F | JS1-24V-F | JS1aF-24V-F | JS1F-24V-F | JS1aPF-B-24V-F | 24 | 16.8 | 2.4 | 1,600 | 15 | | |
| JS1a-48V-F | JS1-48V-F | JS1aF-48V-F | JS1F-48V-F | JS1aPF-B-48V-F | 48 | 33.6 | 4.8 | 6,400 | 7.5 | | |

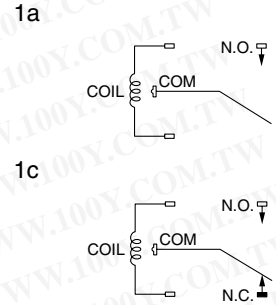
DIMENSIONS



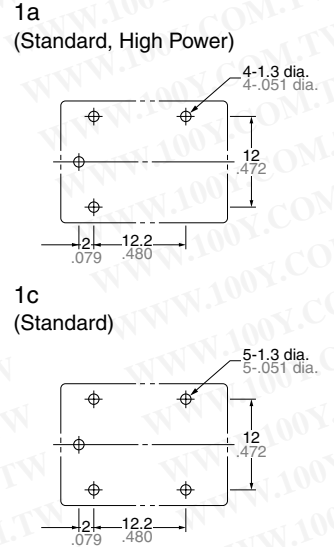
Note: Terminal No. 4 is only for Standard 1 Form C type
 General tolerance: $\pm 0.3 \pm 0.12$

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Schematic (Bottom view)



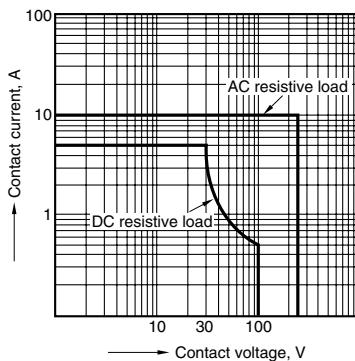
PC board pattern (Bottom view)



Tolerance: $\pm 0.1 \pm 0.004$

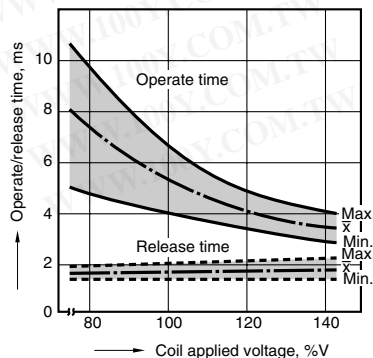
REFERENCE DATA

1. Maximum value for switching capacity



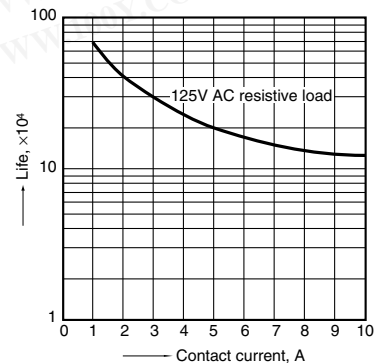
2. Operate/release time

Sample: 25 pcs., JS1-12V-F

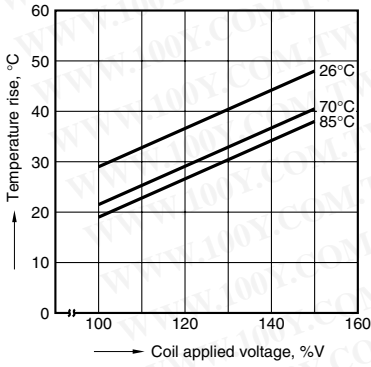


3. Life curve

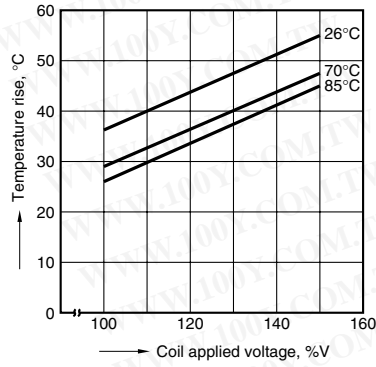
Ambient temperature: Room temperature



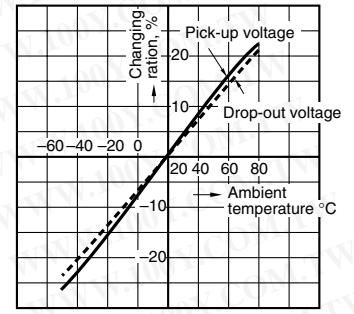
4-(1). Coil temperature rise
 Sample: 5 pcs., JS1a-24V-F
 Measured portion: Inside the coil
 Contact current: 5 A



4-(2). Coil temperature rise
 Sample: 5 pcs., JS1a-24V-F
 Measured portion: Inside the coil
 Contact current: 10 A



5. Ambient temperature characteristics
 Sample: 6 pcs., JS1-12V-F



For Cautions for Use, see Relay Technical Information .

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