

## 2. Specifications

| Characteristics            | Item                                                                          | Specifications                                                                                                                                                                                       |                                                                                  |
|----------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|                            |                                                                               | Standard type                                                                                                                                                                                        | High capacity type                                                               |
| Contact                    | Contact material                                                              | 1 Form A: AgSnO <sub>2</sub> type<br>1 Form C, 2 Form A and 2 Form C: AgNi type                                                                                                                      |                                                                                  |
|                            | Arrangement                                                                   | 1 Form A, 1 Form C, 2 Form A and 2 Form C                                                                                                                                                            | 1 Form A and 1 Form C                                                            |
|                            | Contact resistance (Initial)                                                  | Max. 100 mΩ (By voltage drop 6 V DC 1A)                                                                                                                                                              |                                                                                  |
| Rating                     | Nominal switching capacity (resistive load)                                   | 5A 250V AC, 5A 30V DC                                                                                                                                                                                | 10A 250V AC, 10A 30V DC                                                          |
|                            | Max. switching power (resistive load)                                         | 1,250VA, 150W                                                                                                                                                                                        | 2,500VA, 300W                                                                    |
|                            | Max. switching voltage                                                        | 250V AC, 30V DC                                                                                                                                                                                      |                                                                                  |
|                            | Max. switching current                                                        | 5A                                                                                                                                                                                                   | 10A                                                                              |
|                            | Min. switching capacity (reference value)* <sup>1</sup>                       | 100mA, 5V DC                                                                                                                                                                                         |                                                                                  |
| Electrical characteristics | Insulation resistance (Initial)                                               | Min. 1,000MΩ (at 500V DC) Measurement at same location as "Breakdown voltage" section.                                                                                                               |                                                                                  |
|                            | Breakdown voltage (Initial)                                                   | Between open contacts                                                                                                                                                                                | 1,000 Vrms for 1 min. (Detection current: 10 mA)                                 |
|                            |                                                                               | Between contact and coil                                                                                                                                                                             | 5,000 Vrms for 1 min. (Detection current: 10 mA)                                 |
|                            |                                                                               | Between contact sets                                                                                                                                                                                 | 3,000 Vrms for 1 min. (2 Form A, 2 Form C) (Detection current: 10 mA)            |
|                            | Surge breakdown voltage* <sup>2</sup><br>(Between contact and coil) (Initial) | 10,000 V                                                                                                                                                                                             |                                                                                  |
|                            | Operate time (at nominal voltage) (at 20°C 68°F)                              | Max. 15 ms (excluding contact bounce time.)                                                                                                                                                          |                                                                                  |
| Mechanical characteristics | Shock resistance                                                              | Functional                                                                                                                                                                                           | 98 m/s <sup>2</sup> (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.) |
|                            |                                                                               | Destructive                                                                                                                                                                                          | 980 m/s <sup>2</sup> (Half-wave pulse of sine wave: 6 ms.)                       |
|                            | Vibration resistance                                                          | Functional                                                                                                                                                                                           | 10 to 55 Hz at double amplitude of 1.6 mm (Detection time: 10μs.)                |
|                            |                                                                               | Destructive                                                                                                                                                                                          | 10 to 55 Hz at double amplitude of 2.0 mm                                        |
| Expected life              | Mechanical (at 180 times/min.)                                                | Min. 5×10 <sup>6</sup>                                                                                                                                                                               |                                                                                  |
| Conditions                 | Conditions for operation, transport and storage* <sup>3</sup>                 | Ambient temperature* <sup>4</sup> : -40°C to +60°C -40°F to 140°F (Class E),<br>(Class B: -40°C to +85°C -40°F to 185°F)<br>Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature) |                                                                                  |
| Unit weight                |                                                                               | Approx. 13 g .46 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. 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.

\*4. The pick-up and drop out voltages rise approximately 0.4% for every 1°C 33.8°F given a standard ambient temperature of 20°C 68°F. Therefore, when using relays where the ambient temperature is high, please take into consideration the rise in pick-up and drop out voltages and keep the coil applied voltage within the maximum applied voltage.

## 3. Electrical life

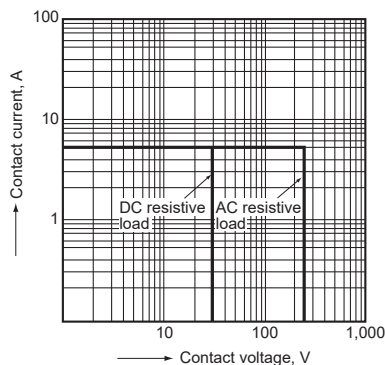
Condition: Resistive load, at 6 times/min.

| Types                                     | Switching capacity | No. of operations      |
|-------------------------------------------|--------------------|------------------------|
| 1 Form A, 1 Form C,<br>2 Form A, 2 Form C | 5A 250V AC         | Min. 1×10 <sup>5</sup> |
|                                           | 5A 30V DC          | Min. 1×10 <sup>5</sup> |
| 1 Form A, 1 Form C                        | 10A 250V AC        | Min. 1×10 <sup>5</sup> |
|                                           | 10A 30V DC         | Min. 1×10 <sup>5</sup> |

## REFERENCE DATA

### JW 1 Form A Standard (5A) type

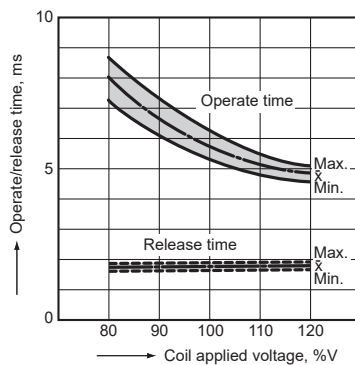
#### 1. Maximum operating power



#### 2. Operate/release time

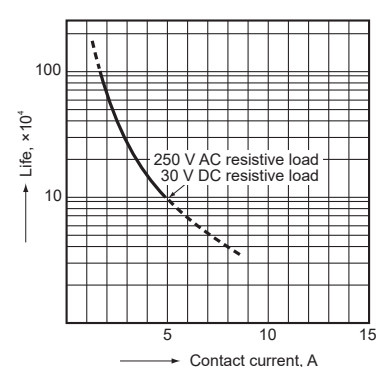
Sample: JW1aSN-DC12V-F, 10 pcs.

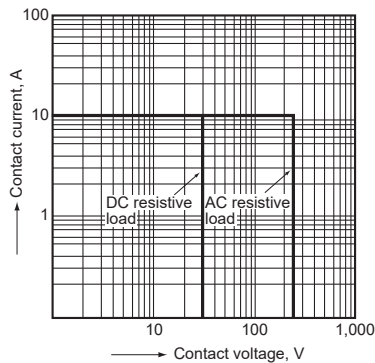
Ambient temperature: 20°C 68°F



#### 3. Life curve

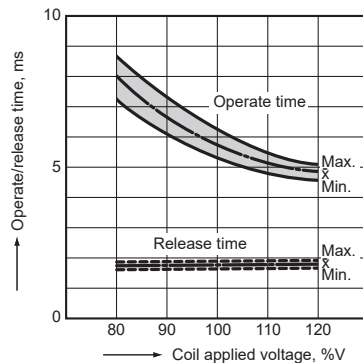
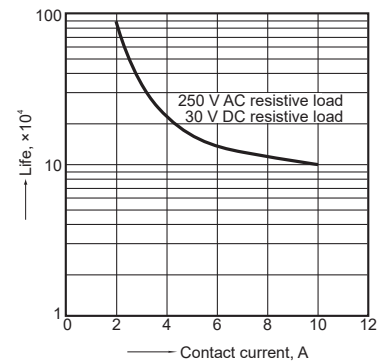
1 Form A Standard (5 A) type



**JW 1 Form A High Capacity (10 A) type****1. Maximum operating power****2. Operate/release time**

Sample: JW1aFSN-DC12V, 10 pcs.

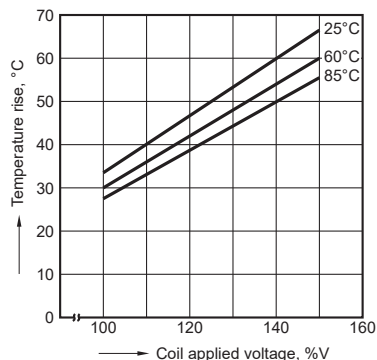
Ambient temperature: 20°C 68°F

**3. Life curve****4-(1). Coil temperature rise**

(Contact carrying current: 5 A)

Sample JW1aFSN-DC12V-F

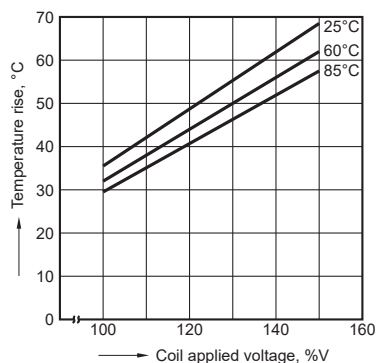
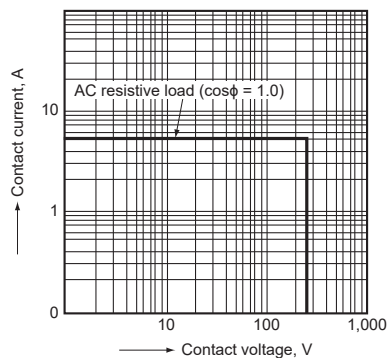
Point measured: Inside the coil

**4-(2). Coil temperature rise**

(Contact carrying current: 10 A)

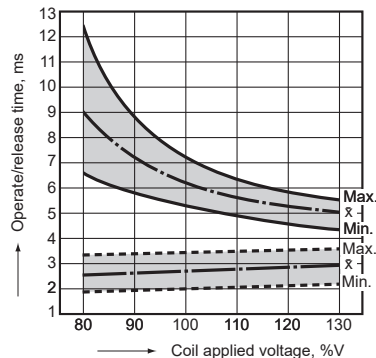
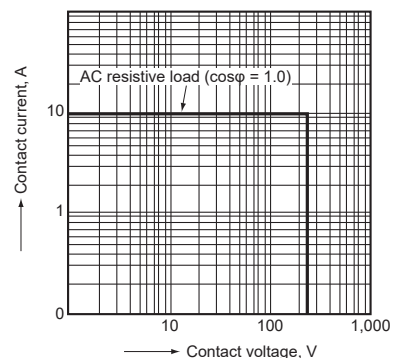
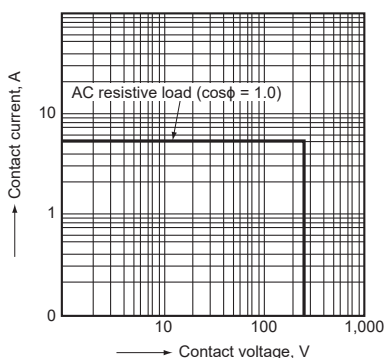
Sample: JW1aFSN-DC12V-F

Point measured: Inside the coil

**JW 1 Form C Standard (5 A) type****1-(3). Maximum operating power****2. Operate/release time**

Sample: JW1SN-DC12V-F, 6 pcs.

Ambient temperature: 20°C 68°F

**JW 1 Form C High Capacity (10 A) type****1. Maximum operating power****JW 2 Form A Standard (5 A) type****1. Maximum operating power****2. Operate/release time**

Sample: JW2aSN-DC24V-F, 6 pcs.

Ambient temperature: 20°C 68°F

