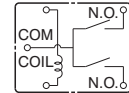


**FEATURES**

- **Small size**  
The smallest double make type relay  
12.0(W)×15.5(L)×13.9(H) mm  
.472(W)×.610(L)×.547(H) inch
- **Pattern design simplification**  
Simplified pattern design is possible because, while double make construction is employed, the external COM terminal is single.

- **Standard terminal pitch employed**  
The terminal array used is identical to that used in JJM relays(1c type).
- **Plastic sealed type**  
Plastically sealed for automotive cleaning.



<Schematic>

**SPECIFICATIONS**

**Contact**

Arrangement	Double make contact	
Contact material	Ag alloy (Cadmium free)	
Initial contact resistance (Initial) (By voltage drop 6V DC 1A)	Typ. 10 mΩ	
Contact voltage drop	Max. 0.25V (at 2 × 6A)	
Rating	Nominal switching capacity	12A 14V DC (at 2 × 6A, lamp load)
	Max. carrying current	2 × 6A (12V, at 20°C 68°F), 2 × 4A (12V, at 85°C 185°F)
	Min. switching capacity <sup>#1</sup>	1A 12V DC
Expected life (min. operations)	Mechanical (at 120cpm)	Min. 10 <sup>7</sup>
	Electrical (lamp load)	Min. 10 <sup>5*</sup>

**Coil**

Nominal operating power	1,000 mW
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<sup>#1</sup> 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**

- <sup>\*1</sup> At 12A 14V DC (lamp), operating frequency: 1s ON, 14s OFF
- <sup>\*2</sup> Measurement at same location as "initial breakdown voltage" section.
- <sup>\*3</sup> Detection current: 10mA
- <sup>\*4</sup> Excluding contact bounce time.
- <sup>\*5</sup> Half-wave pulse of sine wave: 11 ms; detection time: 10 μs
- <sup>\*6</sup> Half-wave pulse of sine wave: 6 ms
- <sup>\*7</sup> Detection time: 10 μs
- <sup>\*8</sup> Time of vibration for each direction; X, Y direction: 2 hours Z direction: 4 hours



<sup>\*9</sup> Refer to "6. Usage, Storage and Transport Conditions" in **AMBIENT ENVIRONMENT** section in **Relay Technical Information**. Please inquire if you will be using the relay in a high temperature atmosphere (110°C 230°F).

**Characteristics**

Max. operating speed (at nominal switching capacity)	4 cpm	
Initial insulation resistance <sup>*2</sup>	Min. 100 MΩ (at 500 V DC)	
Initial breakdown voltage <sup>*3</sup>	Between open contacts	500 Vrms for 1min.
	Between contact and coil	500 Vrms for 1min.
Operate time <sup>*4</sup> (at nominal voltage)(at 20°C 68°F)	Max. 10 ms (Initial)	
Release time (without diode) <sup>*4</sup> (at nominal voltage)(at 20°C 68°F)	Max. 10 ms (Initial)	
Shock resistance	Functional <sup>*5</sup>	Min. 100 m/s <sup>2</sup> {10 G}
	Destructive <sup>*6</sup>	Min. 1,000 m/s <sup>2</sup> {100 G}
Vibration resistance	Functional <sup>*7</sup>	10 Hz to 100 Hz, Min. 44.1 m/s <sup>2</sup> {4.5 G}
	Destructive <sup>*8</sup>	10 Hz to 500 Hz, Min. 44.1 m/s <sup>2</sup> {4.5 G}
Conditions in case of operation, transport and storage <sup>*9</sup> (Not freezing and condensing at low temperature)	Ambient temp.	-40°C to +85°C -40°F to +185°F
	Humidity	5% R.H. to 85% R.H.
Mass	Approx. 5 g .176 oz	

**TYPICAL APPLICATIONS**

Car alarm system flashing lamp etc.

**ORDERING INFORMATION**

Ex. JJM 2w 12V

Contact arrangement	Coil voltage (DC)
Double make contact	12V

Standard packing: Carton(tube package) 50pcs. Case: 1,000pcs.

# JJ-M(2w)

## TYPES AND COIL DATA (at 20°C 68°F)

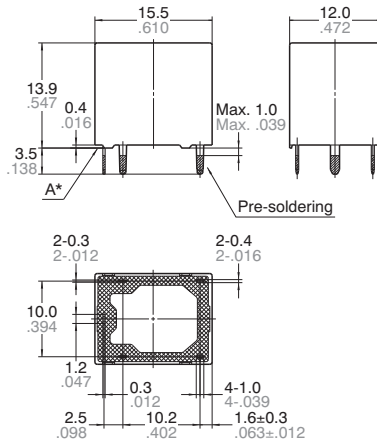
### • Single side stable type

Part No.	Nominal voltage, V DC	Pick-up voltage, V DC (Initial)	Drop-out voltage, V DC (Initial)	Coil resistance $\Omega$	Nominal operating current, mA	Nominal operating power, mW	Usable voltage range, V DC
JJM2w-12V	12	Max. 6.9	Min. 1.0	144±10%	83.3±10%	1,000	10 to 16

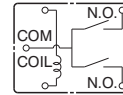
## DIMENSIONS (mm inch)

Download [CAD Data](#) from our Web site.

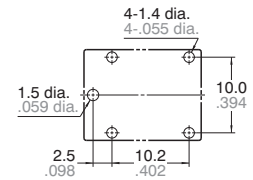
### CAD Data



### Schematic (Bottom view)



### PC board pattern (Bottom view)



Tolerance:  $\pm 0.1 \pm 0.004$

### Dimension:

Max. 1mm .039 inch:

1 to 3mm .039 to .118 inch:  $\pm 0.2 \pm 0.008$

Min. 3mm .118 inch:  $\pm 0.3 \pm 0.012$

### General tolerance

$\pm 0.1 \pm 0.004$

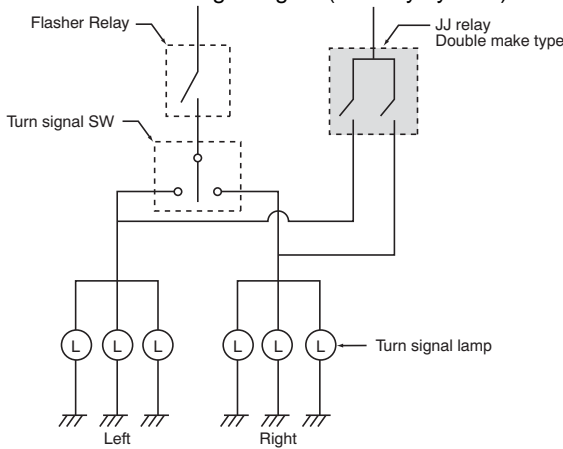
$\pm 0.2 \pm 0.008$

$\pm 0.3 \pm 0.012$

\* Dimensions (thickness and width) of terminal in this catalog is measured before pre-soldering. Intervals between terminals is measured at A surface level.

## EXAMPLE OF CIRCUIT

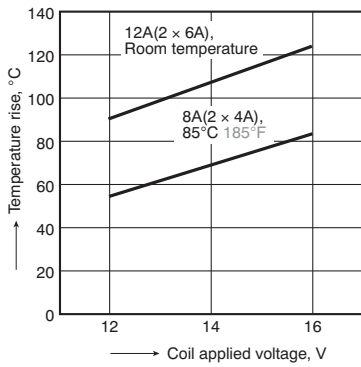
### Control circuit for signal lights (security system)



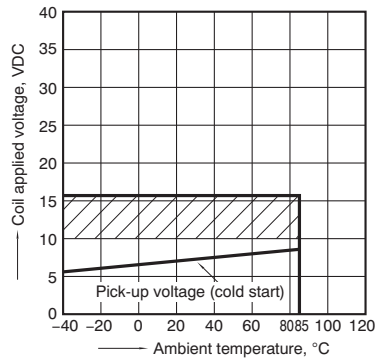
**REFERENCE DATA**

**1. Coil temperature rise**

Sample: JJM2W-12V, 6pcs.  
 Point measured: Inside the coil  
 Contact carrying current: 2 × 6A, 2 × 4A  
 Ambient temperature: Room temperature, 85°C  
 185°F

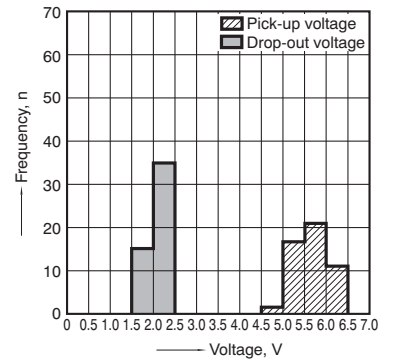


**2. Ambient temperature and operating voltage range**



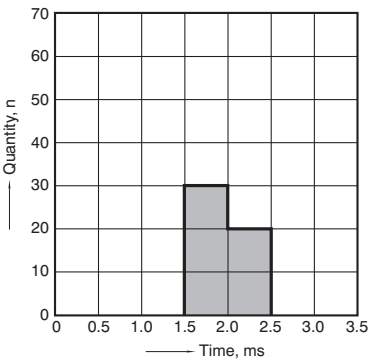
**3. Distribution of pick-up and drop-out voltage**

Sample: JJM2W-12V, 50pcs.



**4. Distribution of operate time**

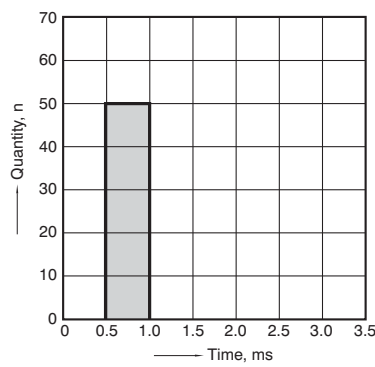
Sample: JJM2W-12V, 50pcs.



**5. Distribution of release time**

Sample: JJM2W-12V, 50pcs.

\* Without diode



# JJ-M(2w)

## 6. Electrical life test (Lamp load)

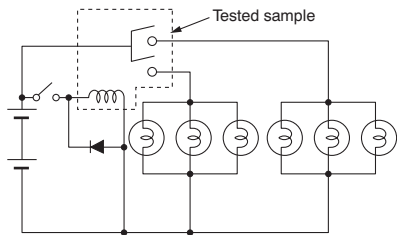
Sample: JJM2w-12V, 6pcs.

Load: 5.5A, inrush 48A, 6 × 21W

Operating frequency: (ON : OFF = 1s : 14s)

Ambient temperature: Room temperature

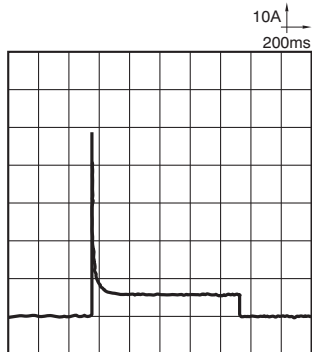
Circuit:



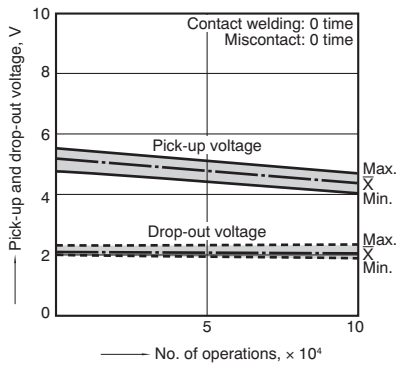
### Load current waveform

Current value per contact on one side

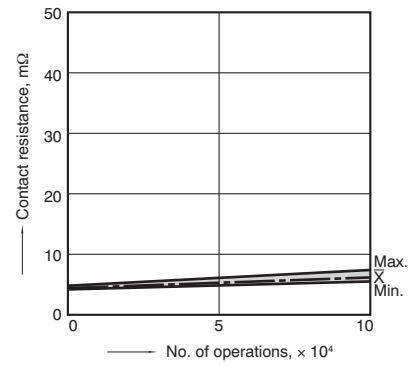
Inrush current: 48A, Steady current: 5.5A



## Change of pick-up and drop-out voltage



## Change of contact resistance



**For Cautions for Use, see [Relay Technical Information](#).**