

mm inch

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>

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

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#1	1A 12V DC
Expected life (min. operations)	Mechanical (at 120cpm)	Min. 10 ⁷
	Electrical (lamp load)	Min. 10 ^{5*1}

Coil

Nominal operating power	1,000 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 At 12A 14V DC (lamp), operating frequency: 1s ON, 14s OFF

*2 Measurement at same location as "initial breakdown voltage" section.

*3 Detection current: 10mA

*4 Excluding contact bounce time.

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

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

*7 Detection time: 10 μs

*8 Time of vibration for each direction; X, Y direction: 2 hours Z direction: 4 hours



*9 Refer to Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT
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*2	Min. 100 MΩ (at 500 V DC)	
Initial breakdown voltage*3	Between open contacts	500 Vrms for 1min.
	Between contact and coil	500 Vrms for 1min.
Operate time*4 (at nominal voltage)(at 20°C 68°F)	Max. 10 ms (Initial)	
Release time (without diode)*4 (at nominal voltage)(at 20°C 68°F)	Max. 10 ms (Initial)	
Shock resistance	Functional*5	Min. 100 m/s ² {10 G}
	Destructive*6	Min. 1,000 m/s ² {100 G}
Vibration resistance	Functional*7	10 Hz to 100 Hz, Min. 44.1 m/s ² {4.5 G}
	Destructive*8	10 Hz to 500 Hz, Min. 44.1 m/s ² {4.5 G}
Conditions in case of operation, transport and storage*9 (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.

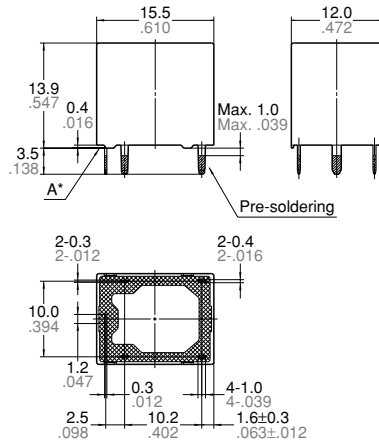
TYPES AND COIL DATA (at 20°C 68°F)

• Single side stable type

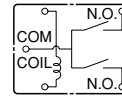
Part No.	Nominal voltage, V DC	Pick-up voltage, V DC (Initial)	Drop-out voltage, V DC (Initial)	Coil resistance Ω	Nominal operating current, mA	Nominal operating power, mW	Usable voltage range, V DC
JJM2w-12V	12	Max. 6.9	Min. 1.0	144±10%	83.3±10%	1,000	10 to 16

DIMENSIONS

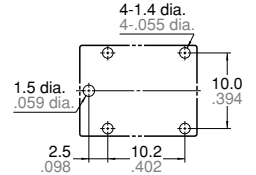
mm inch



Schematic (Bottom view)



PC board pattern (Bottom view)



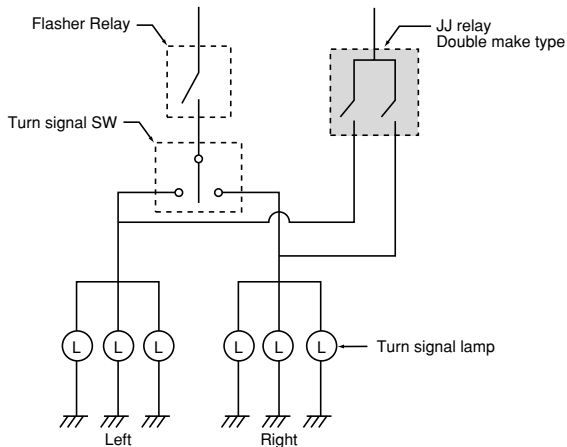
Tolerance: ±0.1 ±.004

Dimension:	General tolerance
Max. 1mm .039 inch:	±0.1 ±.004
1 to 3mm .039 to .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.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

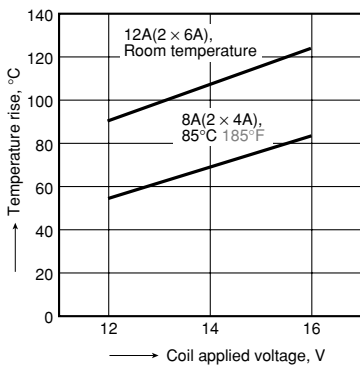
Control circuit for signal lights (security system)



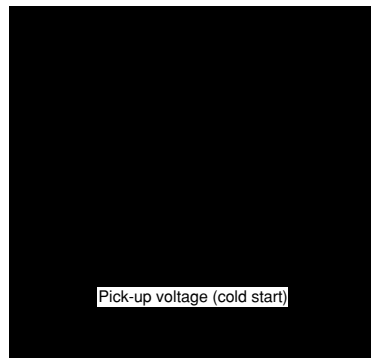
REFERENCE DATA

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

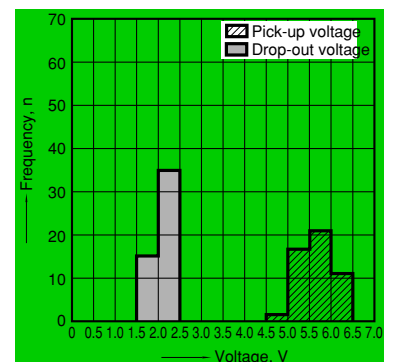


2. Ambient temperature and operating voltage range



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

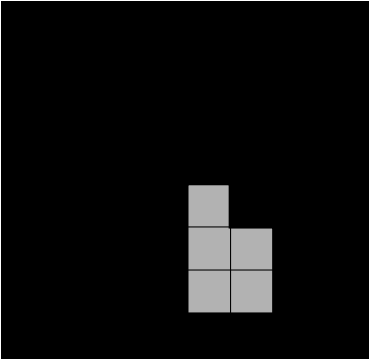
Sample: JJM2W-12V, 50pcs.



JJ-M(2w)

4. Distribution of operate time

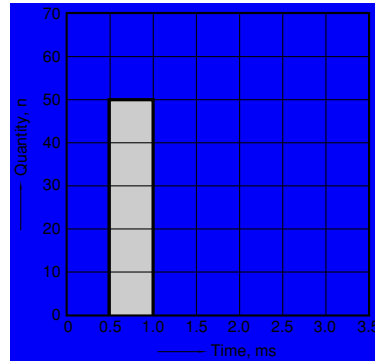
Sample: JJM2W-12V, 50pcs.



5. Distribution of release time

Sample: JJM2W-12V, 50pcs.

* Without diode



6. Electrical life test (Lamp load)

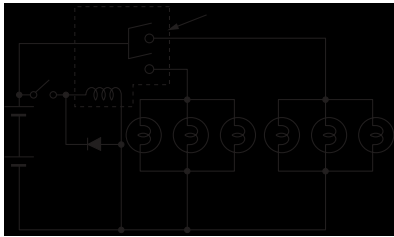
Sample: JJM2w-12V, 6pcs.

Load: 5.5A, inrush 48A, 6 × 21W

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

Ambient temperature: Room temperature

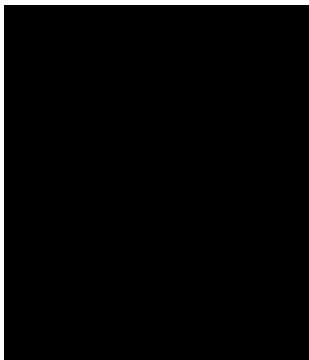
Circuit:



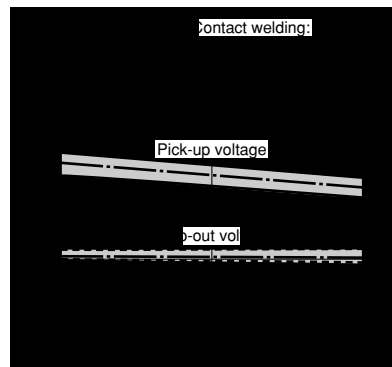
Load current waveform

Current value per contact on one side

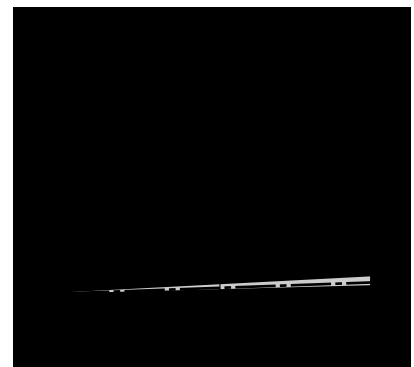
Inrush current: 48A, Steady current: 5.5A



Change of pick-up and drop-out voltage



Change of contact resistance



For Cautions for Use, see Relay Technical Information.