

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

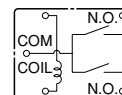
Simplified pattern design is possible
because, while double make construction
is employed, the external COM terminal
is single.

• 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
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#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
	Between contact and coil
	500 Vrms for 1min.
	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
	Destructive*6
	Min. 100 m/s ² {10 G}
	Min. 1,000 m/s ² {100 G}
Vibration resistance	Functional*7
	Destructive*8
	10 Hz to 100 Hz, Min. 44.1 m/s ² {4.5 G}
	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.
	Humidity
	−40°C to +85°C −40°F to +185°F
	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.

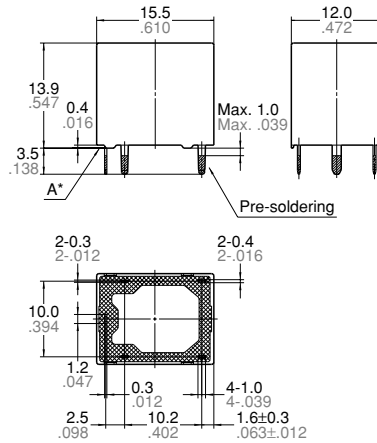
TYPES AND COIL DATA (at 20°C 68°F)

• Single side stable type

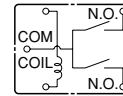
Part No.	Nominal voltage, V DC	Pick-up voltage, V DC (Initial)	Drop-out voltage, V DC (Initial)	Coil resistance Ω	Nominal operating current, mA	Nominal operating power, mW	Usable voltage range, V DC
JJM2w-12V	12	Max. 6.9	Min. 1.0	144 $\pm$ 10%	83.3 $\pm$ 10%	1,000	10 to 16

DIMENSIONS

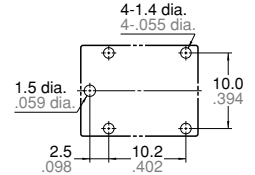
mm inch



Schematic (Bottom view)



PC board pattern (Bottom view)

Tolerance: $\pm 0.1 \pm .004$

Dimension:

Max. 1mm .039 inch:

1 to 3mm .039 to .118 inch: $\pm 0.2 \pm .008$

Min. 3mm .118 inch:

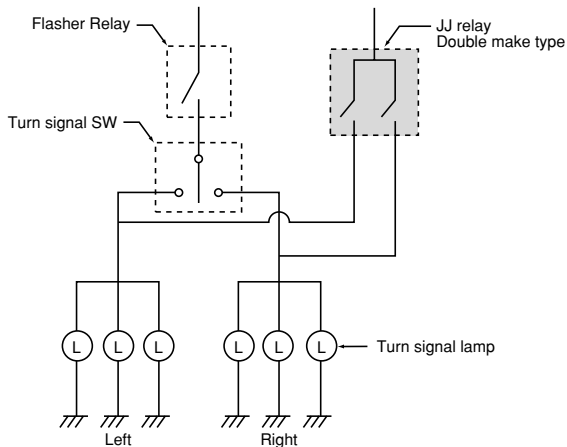
General tolerance

 $\pm 0.1 \pm .004$ $\pm 0.2 \pm .008$ $\pm 0.3 \pm .012$

* 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

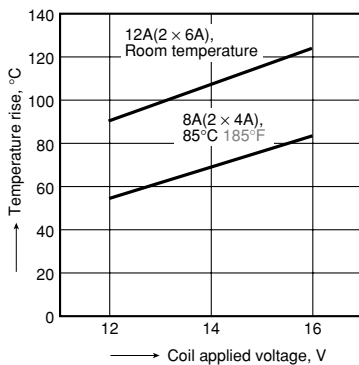
Sample: JJM2w-12V, 6pcs.

Point measured: Inside the coil

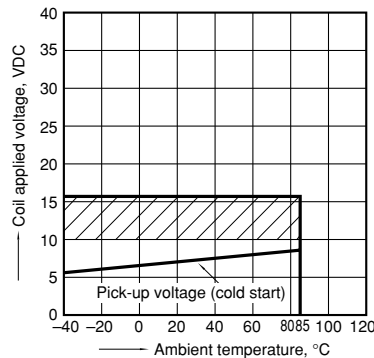
Contact carrying current: 2 $\times$ 6A, 2 $\times$ 4A

Ambient temperature: Room temperature, 85°C

185°F

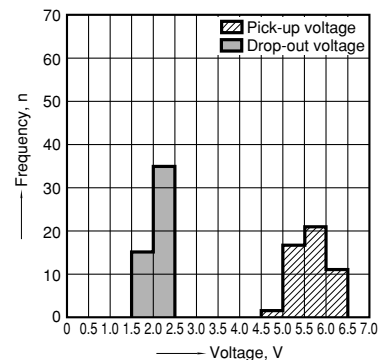


2. Ambient temperature and operating voltage range



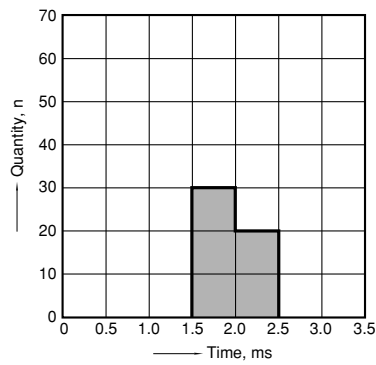
3. Distribution of pick-up and drop-out voltage

Sample: JJM2W-12V, 50pcs.

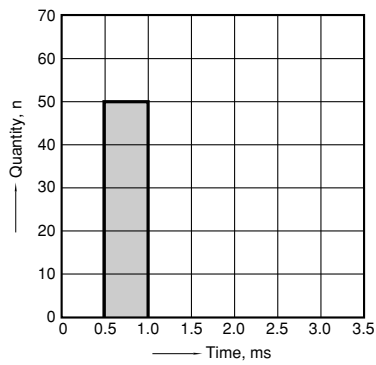


JJ-M(2w)

4. Distribution of operate time
Sample: JJM2W-12V, 50pcs.

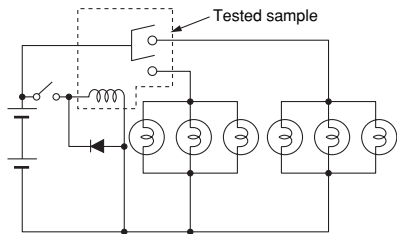


5. Distribution of release time
Sample: JJM2W-12V, 50pcs.
* Without diode

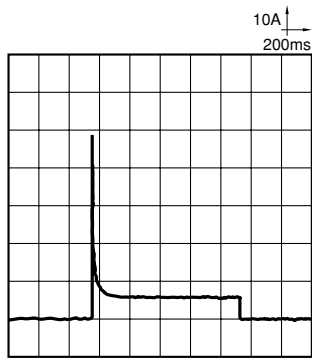


6. Electrical life test (Lamp load)
Sample: JJM2w-12V, 6pcs.
Load: 5.5A, inrush 48A, 6 × 21W
Operating frequency: (ON : OFF = 1s : 14s)
Ambient temperature: Room temperature

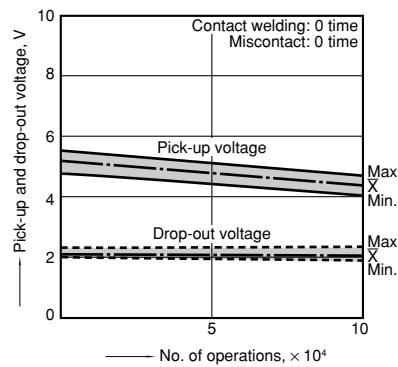
Circuit:



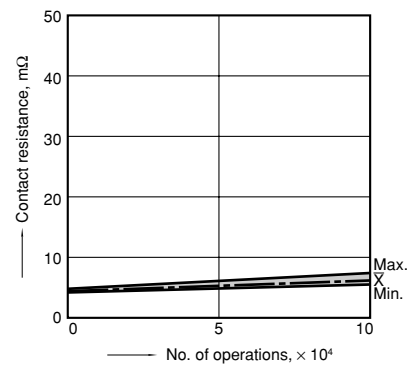
Load current waveform
Current value per contact on one side
Inrush current: 48A, Steady current: 5.5A



Change of pick-up and drop-out voltage



Change of contact resistance



For Cautions for Use, see Relay Technical Information.