

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

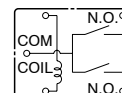
Simplified pattern design is possible because, while double make construction is employed, the external COM terminal is single.

• 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>

SPECIFICATIONS

Contact

Arrangement		Double make contact
Contact material		AgSnO ₂ type
Initial contact resistance (By voltage drop 6V DC 1A)		Max. 100 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 6. Conditions for operation, transport and storage mentioned in [AMBIENT ENVIRONMENT](#) (p. 19, [Relay Technical Information](#)).

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.

JJ-M(2w)

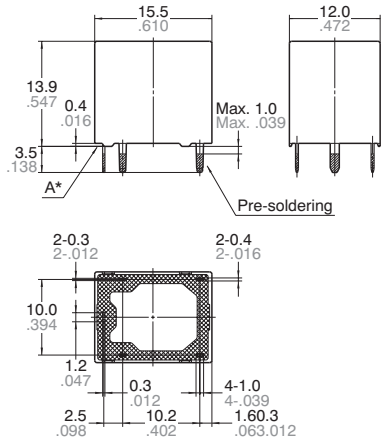
TYPES AND COIL DATA (at 20°C 68°F)

• Single side stable type

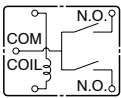
Part No.	Nominal voltage, V DC	Pick-up voltage, V DC (Initial)	Drop-out voltage, V DC (Initial)	Coil resistance Ω	Nominal operating current, mA	Nominal operating power, mW	Usable voltage range, V DC
JJM2w-12V	12	Max. 6.9	Min. 1.0	144±10%	83.3±10%	1,000	10 to 16

DIMENSIONS

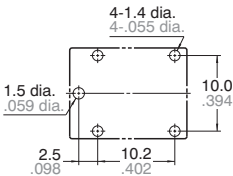
mm inch



Schematic (Bottom view)



PC board pattern (Bottom view)



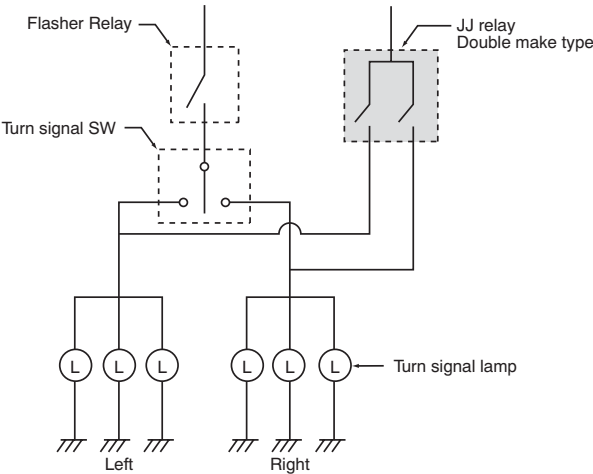
Tolerance: ±0.1 ±.004

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

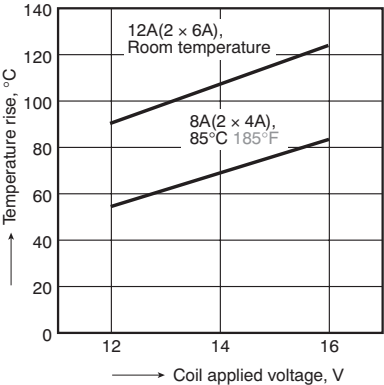
Control circuit for signal lights (security system)



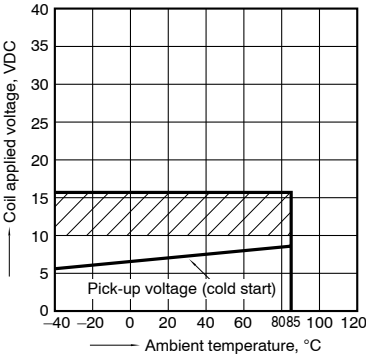
REFERENCE DATA

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

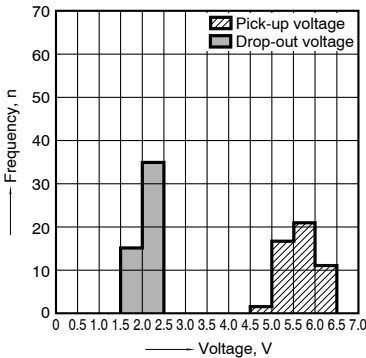


2. Ambient temperature and operating voltage range



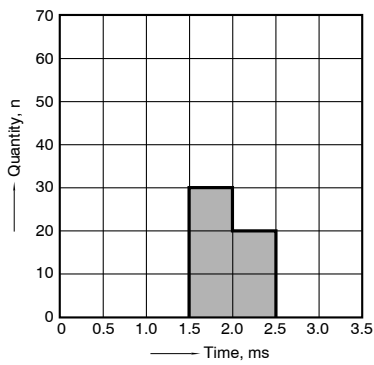
3. Distribution of pick-up and drop-out voltage

Sample: JJM2W-12V, 50pcs.



4. Distribution of operate time

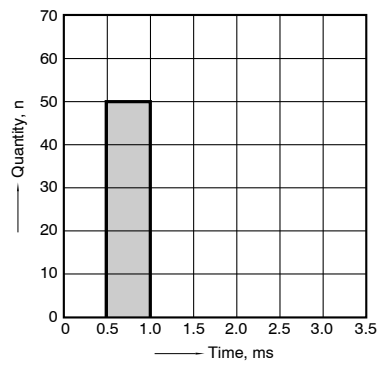
Sample: JJM2W-12V, 50pcs.



5. Distribution of release time

Sample: JJM2W-12V, 50pcs.

* Without diode



6. Electrical life test (Lamp load)

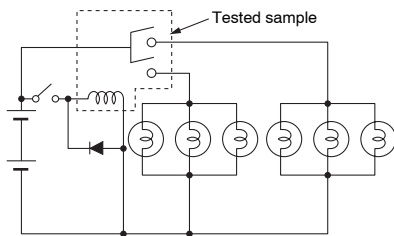
Sample: JJM2w-12V, 6pcs.

Load: 5.5A, inrush 48A, 6 × 21W

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

Ambient temperature: Room temperature

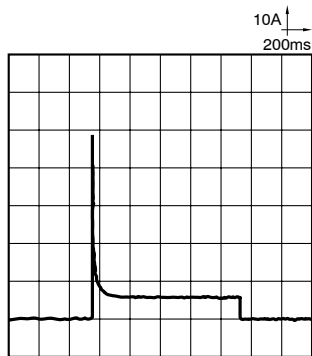
Circuit:



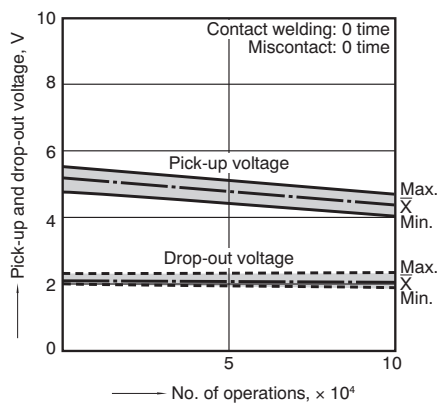
Load current waveform

Current value per contact on one side

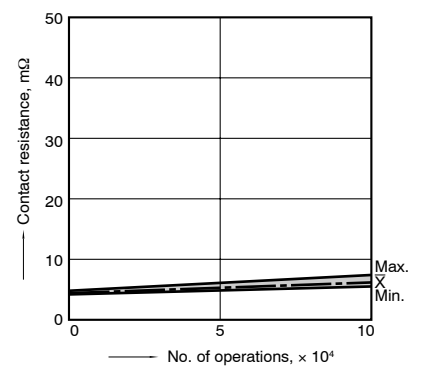
Inrush current: 48A, Steady current: 5.5A



Change of pick-up and drop-out voltage



Change of contact resistance

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