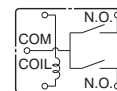


mm inch

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	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 "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*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)

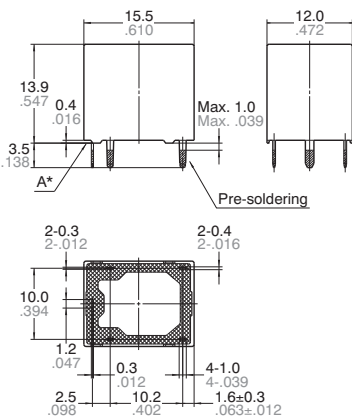
• Single side stable type

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

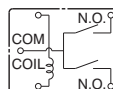
DIMENSIONS (mm inch)

Interested in CAD data? You can obtain CAD data for all products with a **CAD Data** mark from your local Panasonic Electric Works representative.

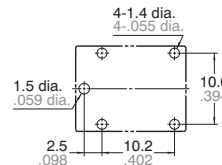
CAD Data



Schematic (Bottom view)



PC board pattern (Bottom view)



Tolerance: ±0.1 ±.004

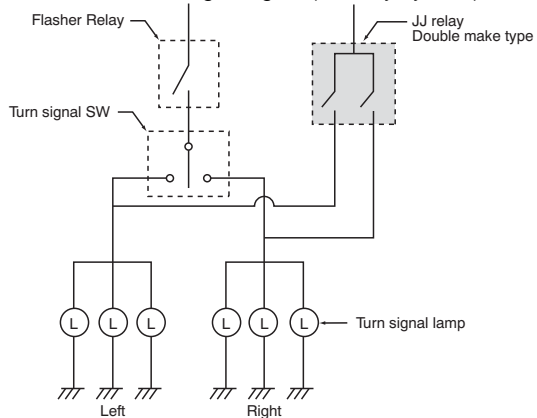
Dimension:
 Max. 1mm .039 inch: ±0.1 ±.004
 1 to 3mm .039 to .118 inch: ±0.2 ±.008
 Min. 3mm .118 inch: ±0.3 ±.012

General tolerance
 ±0.1 ±.004
 ±0.2 ±.008
 ±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

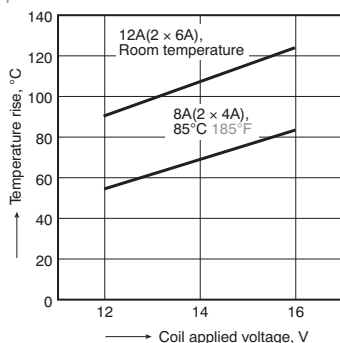
1. Coil temperature rise

Sample: JJM2w-12V, 6pcs.

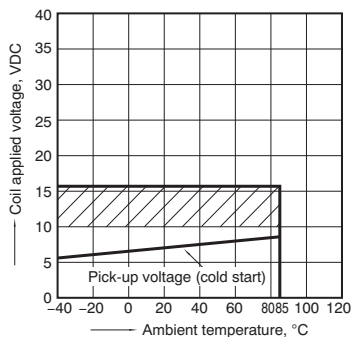
Point measured: Inside the coil

Contact carrying current: 2 × 6A, 2 × 4A

Ambient temperature: Room temperature, 85°C
185°F

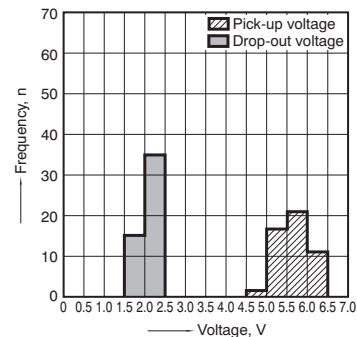


2. Ambient temperature and operating voltage range



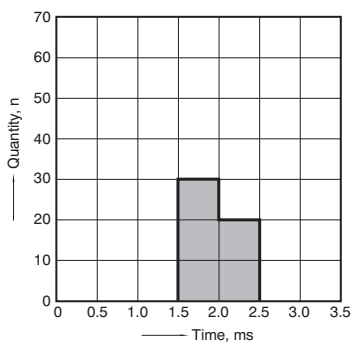
3. Distribution of pick-up and drop-out voltage

Sample: JJM2W-12V, 50pcs.



4. Distribution of operate time

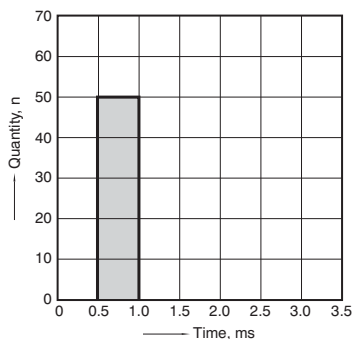
Sample: JJM2W-12V, 50pcs.



5. Distribution of release time

Sample: JJM2W-12V, 50pcs.

* Without diode

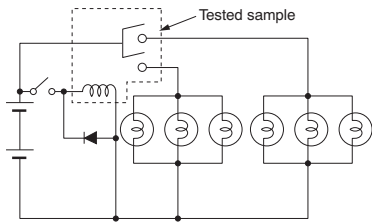


JJ-M(2w)

6. Electrical life test (Lamp load)

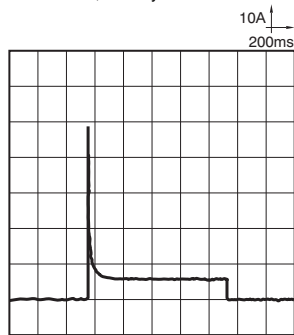
Sample: JJM2w-12V, 6pcs.
 Load: 5.5A, inrush 48A, 6 × 21W
 Operating frequency: (ON : OFF = 1s : 14s)
 Ambient temperature: Room temperature

Circuit:

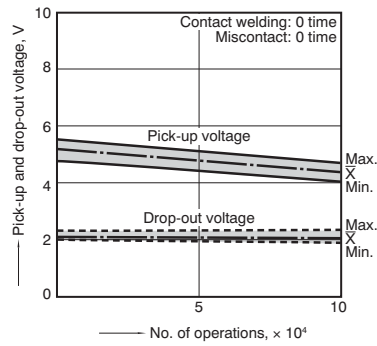


Load current waveform

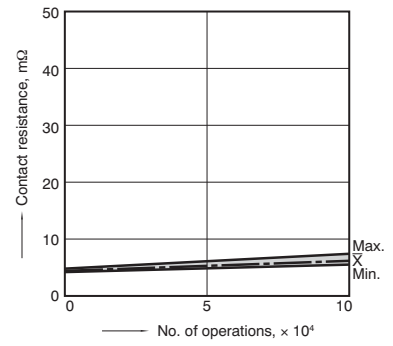
Current value per contact on one side
 Inrush current: 48A, Steady current: 5.5A



Change of pick-up and drop-out voltage



Change of contact resistance



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