Panasonic ideas for life

GLOBAL STANDARD TERMINAL PITCH AUTOMOTIVE POWER RELAY

JS-M RELAYS

TYPICAL APPLICATIONS



FEATURES

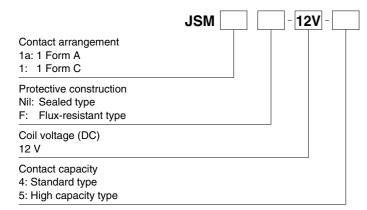
- Low pick-up voltage for high ambient use
- Sealed construction
- · Global standard terminal pitch
- Usable at high temperature: 85°C 185°F

• Power-window

- Car antenna
- Door lock
- Intermittent wiper
- Interior lighting
- Power seat
- Power sunroof
- Car stereo
- Horn
- · Lift gate, etc.

RoHS compliant

ORDERING INFORMATION



TYPES

		Standa	ard type	High capacity type		
Contact arrangement	Coil voltage	Sealed type	Flux-resistant type	Sealed type	Flux-resistant type	
		Part No.	Part No.	Part No.	Part No.	
1 Form A	12 V DC	JSM1a-12V-4	JSM1aF-12V-4	JSM1a-12V-5	JSM1aF-12V-5	
1 Form C	12 V DC	JSM1-12V-4	JSM1F-12V-4	JSM1-12V-5	JSM1F-12V-5	

Standard packing; Carton: 100 pcs.; Case: 500 pcs.

RATING

1. Coil data

Nominal coil voltage	Pick-up voltage (at 20°C 68°F) (Initial)	Drop-out voltage (at 20°C 68°F) (Initial)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power	Usable voltage range
12V DC	Max. 6.3 V DC	Min. 0.9 V DC	53.3 mA	225Ω	640 mW	10 to 16V DC

Note: Other pick-up voltage types are also available. Please contact us for details.

JS-M

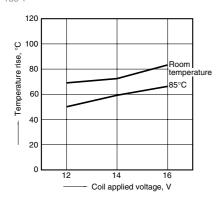
2. Specifications

Arrangement 1 Form A 1 Form C 1 Form A 1 For	Characteristics	Item		Specifications				
Contact Contact resistance (Initial) Max. 200 mΩ (Measured after operating 5 times, 6V DC 1A) Max. 100 mΩ (By voltage drop 6V DC 1A) Contact voltage drop Max. 0.2 V DC (at 10 A 12 VDC) Contact material Ag alloy (Cadmium free) Nominal switching capacity (resistive load) 10A 16V DC 15A 16V DC Max. carrying current*3 25 A (at 20°C 68°F for 2 minutes), 15 A (at 20°C 68°F for 1 hour), 20 A (at 85°C 185°F for 2 minutes), 10 A (at 85°C 185°F for 1 hour) Max. switching power (resistive load) 160 mW 240 W Max. switching current 10 A 15 A (Max. 10 A at 85°C 185°C 185°	Characteristics			Standard type		High capacity type		
Contact Contact resistance (Initial) (Measured after operating 5 times, 6V DC 1A) (By voltage drop 6V DC 1A) Contact voltage drop Max. 0.2 V DC (at 10 A 12 VDC) Contact material Ag alloy (Cadmium free) Nominal switching capacity (resistive load) 10A 16V DC 15A 16V DC Max. carrying current*3 25 A (at 20°C 68°F for 2 minutes), 15 A (at 20°C 68°F for 1 hour), 20 A (at 85°C 185°F for 2 minutes), 10 A (at 85°C 185°F for 1 hour) Max. switching power (resistive load) 160 mW 240 W Max. switching voltage 16V DC Max. switching current 10 A 15 A (Max. 10 A at 85°C 185°C		Arrangement		1 Form A	1 Form C	1 Form A	1 Form C	
Contact material Ag alloy (Cadmium free)	Contact	Contact resistance (Initial)				Max. 100 mΩ (By voltage drop 6V DC 1A)		
Nominal switching capacity (resistive load) 10A 16V DC 15A 16V DC		Contact voltage drop			Max. 0.2 V DC (at 10 A 12 VDC)			
Rating Max. carrying current*3 25 A (at 20°C 68°F for 2 minutes), 15 A (at 20°C 68°F for 1 hour), 20 A (at 85°C 185°F for 2 minutes), 10 A (at 85°C 185°F for 1 hour) Max. switching power (resistive load) 160 mW 240 W Max. switching voltage 16V DC Max. switching current 10 A 15 A (Max. 10 A at 85°C 185°C 18		Contact material			Ag alloy (Ca	dmium free)		
Max. carrying current 20 A (at 85°C 185°F for 2 minutes), 10 A (at 85°C 185°F for 1 hour) Max. switching power (resistive load) 160 mW 240 W Max. switching voltage 16V DC Max. switching current 10 A 15 A (Max. 10 A at 85°C 185°C		Nominal switching cap	acity (resistive load)	10A 16V DC		15A 1	6V DC	
Max. switching voltage 16V DC Max. switching current 10 A 15 A (Max. 10 A at 85°C 185 Nominal operating power Nominal operating power 640 mW Min. switching capacity (resistive load)*1 1 A 12 V DC Insulation resistance (Initial) Min. 100 MΩ (at 500V DC)		Max. carrying current*3						
Max. switching voltage Max. switching current Nominal operating power Min. switching capacity (resistive load)*1 Insulation resistance (Initial) Min. 100 MΩ (at 500V DC)		Max. switching power	(resistive load)	160) mW	= 1 7 11	W	
Nominal operating power 640 mW Min. switching capacity (resistive load)*1 1 A 12 V DC Insulation resistance (Initial) Min. 100 MΩ (at 500V DC)		Max. switching voltage		16V DC				
Min. switching capacity (resistive load)*1 1 A 12 V DC Insulation resistance (Initial) Min. 100 MΩ (at 500V DC)		Max. switching current		10 A 15 A (15 A (Max. 10 A	5 A (Max. 10 A at 85°C 185°F)	
Insulation resistance (Initial) Min. 100 MΩ (at 500V DC)		Nominal operating power		640 mW				
		Min. switching capacity	y (resistive load)*1 1 A 12 V DC	V DC				
		Insulation resistance (Initial)		Min. 100 MΩ (at 500V DC)				
Breakdown voltage Between open contacts 750 Vrms for 1 min. (Detection current: 10mA)		Breakdown voltage	Between open contacts	750 Vrms for 1 min. (Detection current: 10mA)				
Electrical characteristics (Initial) Between contacts and coil 1,500 Vrms for 1 min. (Detection current: 10mA)		(Initial)	Between contacts and coil		1,500 Vrms for 1 min. (D			
Operate time (at 20°C 68°F) Max. 10ms (at nominal voltage) (excluding contact bounce time)	citatacteristics	Operate time (at 20°C 68°F)		Max. 1	0ms (at nominal voltage)	15A 16V DC tes), 15 A (at 20°C 68°F for 1 hour), tes), 10 A (at 85°C 185°F for 1 hour) 240 W 6V DC 15 A (Max. 10 A at 85°C 185°F 40 mW 12 V DC (Q (at 500V DC) (Detection current: 10mA) (Detection current: 10mA) (e) (excluding contact bounce time) uding contact bounce time, without diode) of sine wave: 11ms; detection time: 10µs) f-wave pulse of sine wave: 6ms) ude of 1.6 mm (Detection time: 10µs) buble amplitude of 2.0 mm N.O.: Min. 10⁵ (at 15 cpm), N.C.: Min. 5 × 10⁴ (at 15 cpm)	ce time)	
Release time (at 20°C 68°F) Max. 10ms (at nominal voltage) (excluding contact bounce time, without diod		Release time (at 20°C	68°F)	Max. 10ms (at	nominal voltage) (exclud	High capacity type 1 Form A 1 Form A 1 Form A 1 Max. 100 mΩ (By voltage drop 6V DC 1/2 at 10 A 12 VDC) Idmium free) 15A 16V DC 1, 15 A (at 20°C 68°F for 1 hour), s), 10 A (at 85°C 185°F for 1 hour) 240 W 2 DC 15 A (Max. 10 A at 85°C 185°C 1	, without diode)	
Shock resistance Functional Min. 98 m/s² {10G} (Half-wave pulse of sine wave: 11ms; detection time: 10p	Mechanical characteristics	Charle registeres	Functional	Min. 98 m/s ² {10G} (Half-wave pulse of sine wave: 11ms; detection time: 10μs)			ion time: 10μs)	
		Snock resistance	Destructive	Min. 980 m/s² {100G} (Half-wave pulse of sine wave: 6ms)			6ms)	
characteristics Vibration resistance Functional 10 Hz to 55 Hz, at double amplitude of 1.6 mm (Detection time: 10μs)		\((\) \(\	Functional	10 Hz to 55 Hz, at double amplitude of 1.6 mm (Detection time: 10μs)			ime: 10μs)	
Destructive 10 Hz to 55 Hz, at double amplitude of 2.0 mm		VIDIALION TESISLANCE	Destructive		10 Hz to 55 Hz, at doub			
Flectrical (at nominal switching capacity)	Expected life	Electrical (at nominal switching capacity)		Min. 10 ⁵ (
Mechanical Min. 10 ⁷ (at 180 cpm)		Mechanical			Min. 10 ⁷ (a	f sine wave: 11ms; detection time: 10µs) vave pulse of sine wave: 6ms) de of 1.6 mm (Detection time: 10µs) ble amplitude of 2.0 mm N.O.: Min. 10 ⁵ (at 15 cpm), N.C.: Min. 5 × 10 ⁴ (at 15 cpm) at 180 cpm)		
Conditions	Conditions	Conditions for operation, transport and storage*2		Ambient temperature: -40°C to +85°C -40°F to +185°F, Humidity: 5% R.H. to 85% R.H. (Not freezing and condensing at low temperature)				
Max. operating speed 15 cps. (at nominal switching capacity)		Max. operating speed		15 cps. (at nominal switching capacity)				

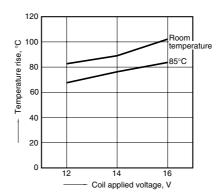
Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

REFERENCE DATA

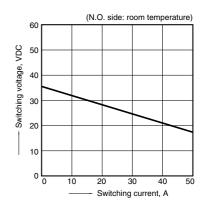
1-(1). Coil temperature rise (10A)
Measured portion: Inside the coil
Contact carrying current, 10A
Ambient temperature: Room temperature, 85°C



1-(2). Coil temperature rise (15A)
Measured portion: Inside the coil
Contact carrying current, 15A
Ambient temperature: Room temperature, 85°C



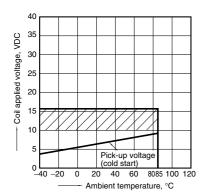
2. Max. switching capability (Resistive load, initial)



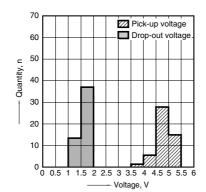
^{*2.} The upper operation ambient temperature limit is the maximum temperature that can satisfy the coil temperature rise value. Please refer to "Usage ambient condition" in CAUTIONS FOR USE OF AUTOMOTIVE RELAYS.

^{*3.} Depends on connection conditions. Also, this does not guarantee repeated switching. We recommend that you confirm operation under actual conditions.

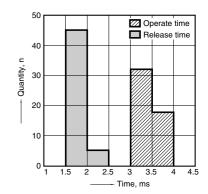
3. Ambient temperature and oprating voltage range



4. Distribution of pick-up and drop-out voltage Sample: JSM1-12V-5, 50pcs.

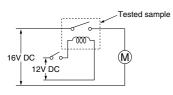


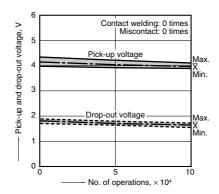
5. Distribution of operate and release time Sample: JSM1-12V-5, 50pcs. Coil both side without diode



6-(1). Electrical life test (Motor load) Sample: JSM1-12V-5, 3pcs. Load: 50A (Inrush), 10A 16V DC (Steady) Switching frequency: (ON: OFF = 1s: 9s)

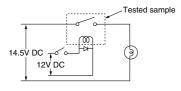
Circuit:

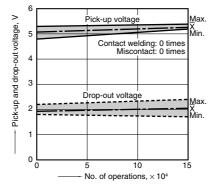




6-(2). Electrical life test (Lamp load) Sample: JSM1a-12V-5, 4pcs. Load: 55.2A (Inrush), 9.6A 14.5V DC (Steady) Switching frequency: (ON: OFF = 1s: 3s)

Circuit:





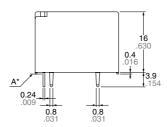
DIMENSIONS (mm inch)

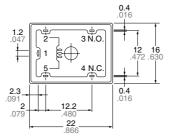
The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e

CAD Data



External dimensions





 Dimension:
 General tolerance

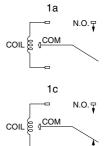
 Max. 1mm .039 inch:
 ±0.1 ±.004

 1 to 3mm .039 to .118 inch:
 ±0.2 ±.008

 Min. 3mm .118 inch:
 ±0.3 ±.012

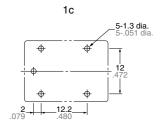
* Dimensions (thickness and width) of terminal specified in this catalog is measured before pre-soldering. Intervals between terminals is measured at A surface level.

Schematic (Bottom view)



PC board pattern (Bottom view)

4-1.3 dia. 4-.051 dia. 4-.051 dia.



Tolerance: ±0.1 ±.004

For Cautions for Use, see Relay Technical Information.

单击下面可查看定价,库存,交付和生命周期等信息

>>Panasonic(松下)