



! Partly to Be Discontinued:
10A type (Made in Thailand)
Last time buy: September 30, 2016

1a/1c 5A/10A small power relays

JQ RELAYS



RoHS compliant

FEATURES

- High electrical noise immunity
- High switching capacity in a compact package
- High sensitivity: 200 mW (1a), 400 mW (1c)
- High surge voltage: 8,000 V between contacts and coil
- UL, CSA, VDE, SEMKO approved and TÜV available
- Class B coil insulation type also available.

TYPICAL APPLICATIONS

- Air conditioners
- Refrigerators
- Microwave ovens
- Heaters

ORDERING INFORMATION

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Contact arrangement
1a: 1 Form A
1 : 1 Form C

Contact capacity
Nil: Standard (5A)
P: High capacity (10A)

Coil insulation class
Nil: Class E coil insulation
B: Class B coil insulation (UL)

Nominal coil voltage (DC)
5V, 6V, 9V, 12V, 18V, 24V, 48V*

Contact material
F: AgSnO₂ type

Certified by UL, CSA, VDE and SEMKO
Note: *Available only for 1 Form C type

TYPES

1) Standard type

Nominal coil voltage	Standard type		High capacity type	
	1 Form A	1 Form C	1 Form A	1 Form C
	Part No.	Part No.	Part No.	Part No.
5V DC	JQ1a-5V-F	JQ1-5V-F	JQ1aP-5V-F	JQ1P-5V-F
6V DC	JQ1a-6V-F	JQ1-6V-F	JQ1aP-6V-F	JQ1P-6V-F
9V DC	JQ1a-9V-F	JQ1-9V-F	JQ1aP-9V-F	JQ1P-9V-F
12V DC	JQ1a-12V-F	JQ1-12V-F	JQ1aP-12V-F	JQ1P-12V-F
18V DC	JQ1a-18V-F	JQ1-18V-F	JQ1aP-18V-F	JQ1P-18V-F
24V DC	JQ1a-24V-F	JQ1-24V-F	JQ1aP-24V-F	JQ1P-24V-F
48V DC	—	JQ1-48V-F	—	JQ1P-48V-F

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

RATING

1. Coil data

Contact arrangement	Nominal coil voltage	Pick-up voltage (at 20°C 68°F)	Drop-out voltage (at 20°C 68°F)	Nominal operating current [±10%] (at 20°C 68°F)	Coil resistance [±10%] (at 20°C 68°F)	Nominal operating power (at 20°C 68°F)	Max. applied voltage
1 Form A	5V DC	Standard type: 75%V or less of nominal voltage (Initial)	5%V or more of nominal voltage (Initial)	40.0mA	125 Ω	200mW	180% of nominal voltage (at 20°C 68°F)
	6V DC			33.3mA	180 Ω		
	9V DC			22.2mA	405 Ω		
	12V DC	High capacity type: 80%V or less of nominal voltage (Initial)		16.7mA	720 Ω		130% of nominal voltage (at 70°C 158°F) [When using relays at 85°C 185°F, see Notes*4]
	18V DC			11.1mA	1,620 Ω		
	24V DC			8.3mA	2,880 Ω		
1 Form C	5V DC	Standard type: 75%V or less of nominal voltage (Initial)	5%V or more of nominal voltage (Initial)	80 mA	62.5Ω	400mW	150% of nominal voltage (at 20°C 68°F)
	6V DC			66.7mA	90 Ω		
	9V DC			44.4mA	202.5Ω		
	12V DC	High capacity type: 80%V or less of nominal voltage (Initial)		33.3mA	360 Ω		110% of nominal voltage (at 70°C 158°F) [When using relays at 85°C 185°F, see Notes*4]
	18V DC			22.2mA	810 Ω		
	24V DC			16.7mA	1,440 Ω		
	48V DC			8.3mA	5,760 Ω		

2. Specifications

Characteristics	Item		Specifications			
			Standard type		High capacity type	
Contact	Arrangement		1 Form A	1 Form C	1 Form A	1 Form C
	Contact resistance (Initial)		Max. 100mΩ (By voltage drop 6 V DC 1 A)			
	Contact material		AgSnO ₂ type			
Rating	Nominal switching capacity (resistive load)		5 A 125 V AC, 2 A 250 V AC, 5 A 30 V DC	N.O. side: 5 A 125 V AC, 2 A 250 V AC, 3 A 30 V AC N.C. side: 2 A 125 V AC, 1 A 250 V AC, 1 A 30 V DC	10 A 125 V AC, 5 A 250 V AC, 5 A 30 V DC	N.O. side: 10 A 125 V AC, 5 A 250 V AC, 5 A 30 V AC N.C. side: 3 A 125 V AC, 2 A 250 V AC, 1 A 30 V DC
	Max. switching power (resistive load)		625 VA, 150 W	N.O. side: 625 VA, 90 W N.C. side: 250 VA, 30 W	1,250 V AC, 150 W	N.O. side: 1,250 VA, 150 W N.C. side: 500 V AC, 30 W
	Max. switching voltage		250 V AC, 110 V DC (0.3A)			
	Max. switching current		N.O.: 5 A, N.C.: 2 A		N.O.: 10 A, N.C.: 3 A	
	Nominal operating power		200 mW	400 mW	200 mW	400 mW
	Min. switching capacity (reference value)*1		100 mA, 5 V DC			
	Insulation resistance (Initial)		Min. 1,000 MΩ (at 500 V DC) Measurement at same location as “Breakdown voltage” section.			
Electrical characteristics	Breakdown voltage (Initial)	Between open contacts	1,000 Vrms for 1 min.	750 Vrms for 1 min.	1,000 Vrms for 1 min.	750 Vrms for 1 min.
		Between contact and coil	4,000 Vrms for 1 min. (Detection current: 10 mA)			
	Temperature rise (coil)		Max. 45°C 113°F (By resistive method, nominal coil voltage applied to the coil; contact carrying current: 5A, at 70°C 158°F)		Max. 45°C 113°F (By resistive method, nominal coil voltage applied to the coil; contact carrying current: 10A, at 70°C 158°F)	
	Surge breakdown voltage*2 (Between contact and coil) (Initial)		8,000 V			
	Operate time (at nominal voltage) (at 20°C 68°F) (Initial)		Max. 20 ms (excluding contact bounce time.)			
	Release time (at nominal voltage) (at 20°C 68°F) (Initial)		Max. 10 ms (excluding contact bounce time) (Without diode)			
	Mechanical characteristics	Shock resistance	Functional	294 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)		
Destructive			980 m/s ² (Half-wave pulse of sine wave: 6 ms.)			
Vibration resistance		Functional	10 to 55 Hz at double amplitude of 1.6 mm (Detection time: 10μs.)			
		Destructive	10 to 55 Hz at double amplitude of 2.0 mm			
Expected life	Mechanical (at 180 times/min.)		Min. 10 ⁷			
Conditions	Conditions for operation, transport and storage*3		Ambient temperature: -40°C to +70°C -40°F to +158°F (class E insulation), -40°C to +85°C -40°F to +185°F*4 (class B insulation) Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)			
	Max. operating speed		20 times/min. (at nominal switching capacity)			
Unit weight			Approx. 7 g .25 oz			

* Specifications will vary with foreign standards certification ratings.

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.

*2. Wave is standard shock voltage of $\pm 1.2 \times 50 \mu$ s according to JEC-212-1981

*3. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.

*4. When using relays in a high ambient temperature, consider the pick-up voltage rise due to the high temperature (a rise of approx. 0.4% V for each 1°C 33.8°F with 20°C 68°F as a reference) and use a coil impressed voltage that is within the maximum applied voltage range.