

# POWER RELAY

## 1 POLE - 3, 5A Medium Load Control

### JY Series

#### ■ FEATURES

- UL, CSA, VDE recognized
- High sensitivity and low power consumption
- High insulation
- Wide operating range
- DIL pitch terminals
- Plastic sealed type, RTIII
- Socket mounting type and socket available
- Compatible with solid state relays type SJ
- RoHS compliant.

Please see page 7 for more information



#### ■ PARTNUMBER INFORMATION

[Example]      JY - 12 H E - K P\*

                  (a)  (b)  (c)  (d)  (e)  (f)

(a)	Relay type	JY	: JY Series
(b)	Coil rated voltage	12	: 4.5...48VDC Coil rating table at page 3
(c)	Contact style	Nil H W	: 3A (Single contact) : 5A (Single contact) : 3A (Bifurcated contact)
(d)	Contact material	Nil Nil E	: Gold-plate silver cadmium oxide (single contact type) : Gold overlay silver alloy (bifurcated contact type) : Silver cadmium oxide (single contact type)
(e)	Enclosure	K	: Plastic sealed type, RTIII
(f)	Terminal type	Nil P	: PC board mounting type : Socket mounting type (without JY-W)

Note: Actual marking omits the hyphen (-) of (\*)

# JY SERIES

## ■ SPECIFICATION

Item	3A Type			5A Type		
	JY - ( ) W	JY - ( )	JY - ( ) E	JY - ( ) H	JY - ( ) HE	
Contact Data	Configuration	1 form A (SPST-NO)				
	Construction	Bifurcated	Single			
	Material	Gold-over-lay silver alloy AgNi	Gold-plate silver cadmium oxide	Silver cadmium oxide	Gold-plate silver cadmium oxide	Silver cadmium oxide
	Resistance (initial) (at 6 VDC, 1A)	Max. 30 mOhm		Max. 100 mOhm	Max. 30 mOhm	Max. 100 mOhm
	Contact rating	3A, 250VAC / 30VDC		5A, 250VAC / 30VDC		
	Max. carrying current	5A				
	Max. switching voltage	250VAC / 150 VDC				
	Max. switching power	750VA, 90W		1,250VA, 150W		
	Max. switching current	3A				
	Min. switching load *	0.1mA 100 mVDC	10mA 5VDC	100mA 5VDC	10mA 5VDC	100mA 5VDC
Life	Mechanical	Min. 20 x 10 <sup>6</sup> operations				
	Electrical	Min. 100 x 10 <sup>3</sup> operations (contact rating)				
Coil Data	Rated power (at 20 °C)	200 mW (48V type: 360 mW)				
	Operate power (at 20 °C)	100 mW (48V type: 170 mW)				
	Operating temperature range	-40 °C to +90 °C (no frost) (48V type: +80 °C)				
Timing Data	Operate (at nominal voltage)	Max. 6 ms (without bounce)				
	Release (at nominal voltage)	Max. 3 ms (no diode)				
Insulation	Resistance (initial)	Min. 1,000MOhm at 500VDC				
	Dielectric strength	Open contacts	750VAC, 1min			
		Contacts to coil	2,000VAC, 1min			
	Surge strength	Coil to contacts	4,000V / 1.2 x 50µs standard wave			
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5 mm			
		Endurance	10 to 55Hz double amplitude 4.5 mm			
	Shock	Misoperation	Min. 100m/s <sup>2</sup> (11 ± 1ms)			
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)			
	Weight	Approximately 5 g				
	Sealing	Plastic sealed, RTIII				

\* Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

# JY SERIES

## ■ COIL RATING

Coil Code	Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Rated Power (mW)
5A type	3A type					
4.5	4.5	4.5	100	3.1	0.23	200
5	5	5	125	3.5	0.25	
6	6	6	180	4.2	0.3	
9	9	9	405	6.3	0.45	
12	12	12	720	8.4	0.6	
18	18	18	1,620	12.6	0.9	
24	24	24	2,880	16.8	1.2	
48	48	48	6,400	32.6	2.4	360
101	-	23.5	2,760	15.5	1.18	200
105	-	12	720	8.4	0.6	
107	-	5	125	3.5	0.25	

Note: All values in the table are valid for 20°C and zero contact current.

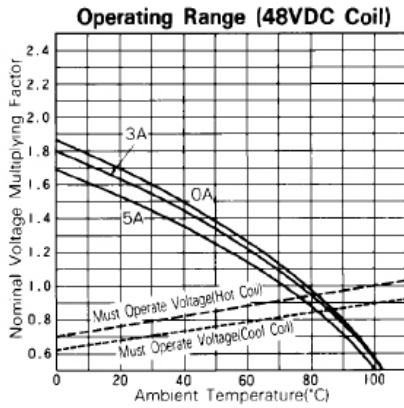
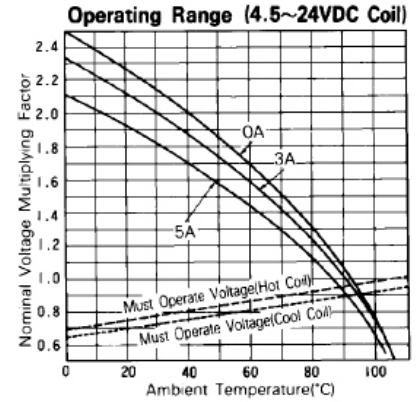
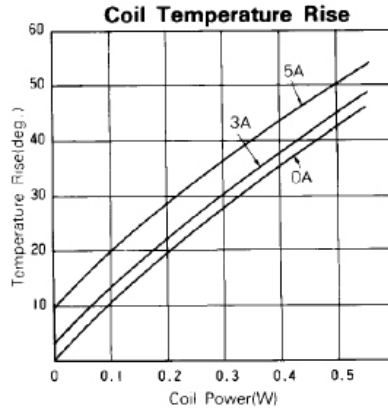
\* Specified operate values are valid for pulse wave voltage.

## ■ SAFETY STANDARDS

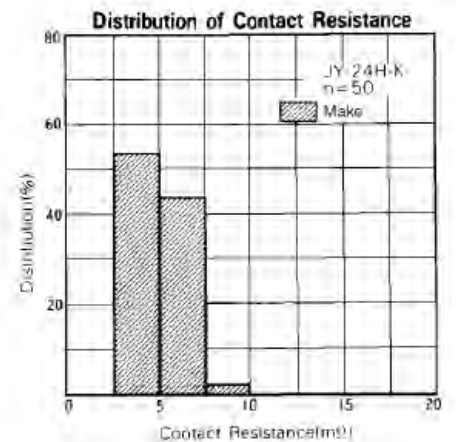
Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	E56140	[JY-H, JY-HE] 5A, 250 VAC / 30 VDC (resistive)
CSA	C22.2 No. 14 LR 35579	1/8 HP, 125VAC, 250 VAC Pilot duty code C150
		[JY, JY-W, JY-E] 3A, 250 VAC / 30 VDC (resistive) 1/10 HP, 125VAC, 250 VAC Pilot duty: C150
VDE (JY..W-K type)	VDE 0435 part 201	3A, 250VAC, cos φ1, 100K 3A, 30VDC, 0msec. 100K

# JY SERIES

## CHARACTERISTIC DATA

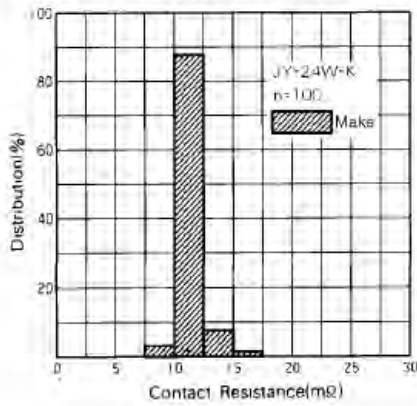


## REFERENCE DATA

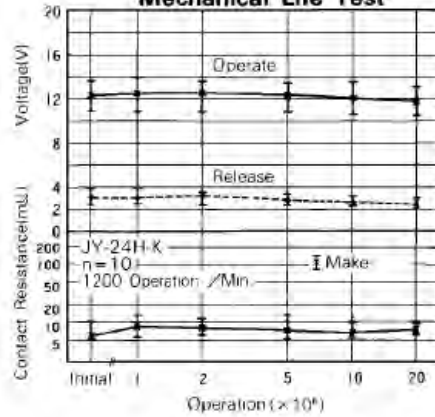


# JY SERIES

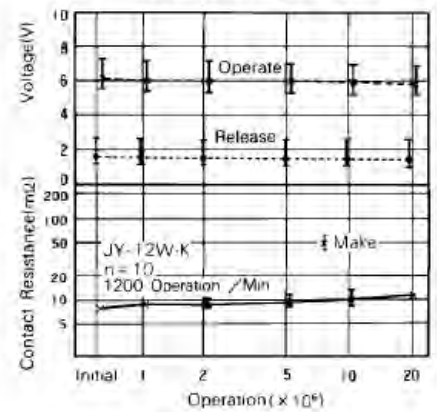
**Distribution of Contact Resistance**



**Mechanical Life Test**



**Mechanical Life Test**



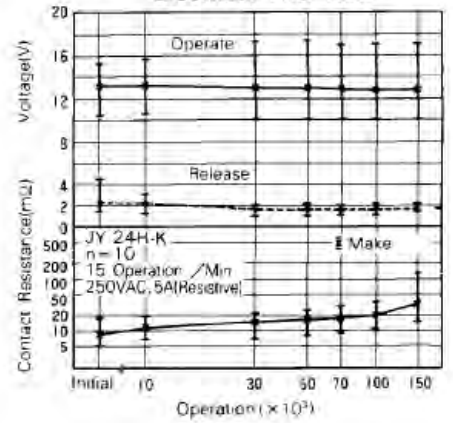
**Electrical Life Test**



**Electrical Life Test**



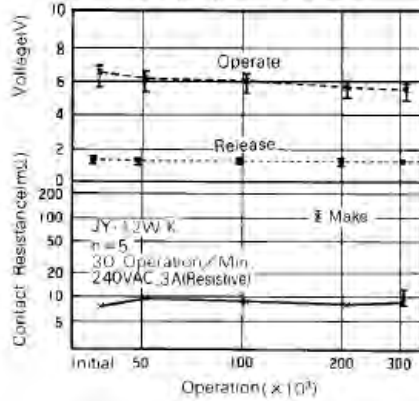
**Electrical Life Test**



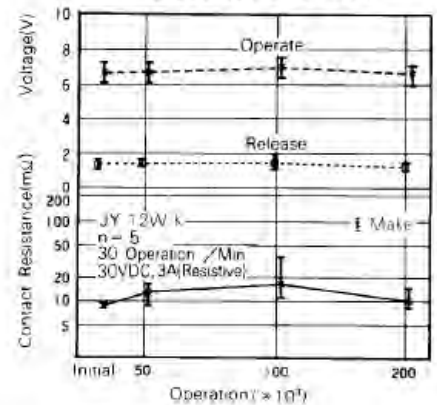
**Electrical Life Test**



**Electrical Life Test**



**Electrical Life Test**



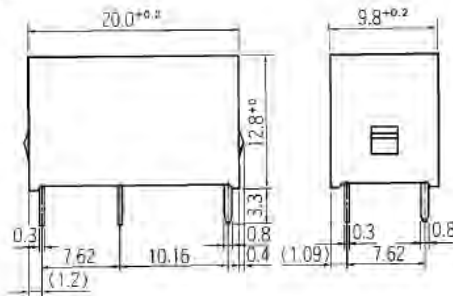
**Electrical Life Test**



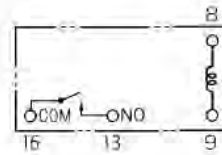
# JY SERIES

## ■ DIMENSIONS

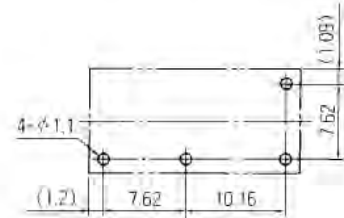
● Dimensions  
JY Type



● Schematics  
(BOTTOM VIEW)

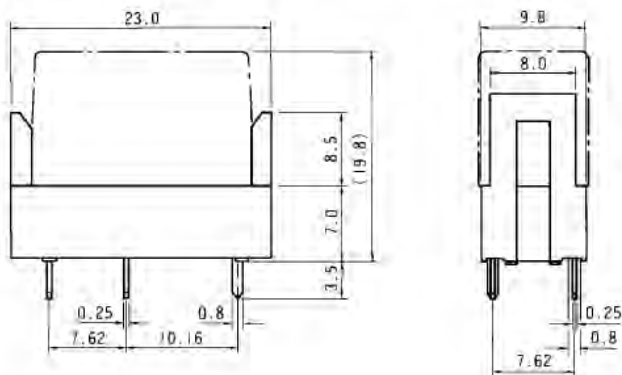


● PC board mounting  
hole layout  
(BOTTOM VIEW)

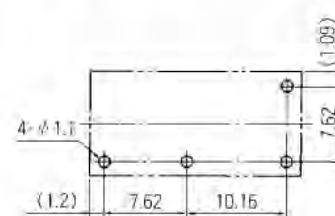


Unit: mm

## ■ SOCKET DIMENSIONS



● PC board mounting hole layout



Unit: mm

## ■ NOTES

1. Socket ordering code : JK-4N
2. Standard IC socket is not recommended.  
Please use socket "JK-4N".

## RoHS Compliance and Lead Free Information

### 1. General Information

- All signal and power relays produced by Fujitsu Components are compliant with RoHS directive 2002/95/EC including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives on October 21st, 2005. (Amendment to Directive 2002/95/EC)
- All of our signal and power relays are lead-free. Please refer to Lead-Free Status Info for older date codes at: <http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>
- Lead free solder plating on relay terminals is Sn-3.0Ag-0.5Cu, unless otherwise specified. This material has been verified to be compatible with PbSn assembly process.

### 2. Recommended Lead Free Solder Profile

- Recommended solder Sn-3.0Ag-0.5Cu.

**Flow Solder condition:**

Pre-heating: maximum 120°C  
Soldering: dip within 5 sec. at  
260°C solder bath

**Solder by Soldering Iron:**

Soldering Iron  
Temperature: maximum 360°C  
Duration: maximum 3 sec.

**We highly recommend that you confirm your actual solder conditions**

### 3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical relays, unless otherwise indicated.

### 4. Tin Whiskers

- Dipped SnAgCu solder is known as presenting a low risk to tin whisker development. No considerable length whisker was found by our in house test.

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