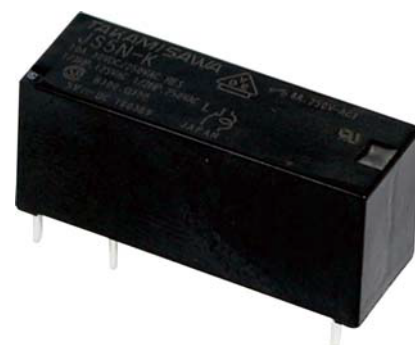


# POWER RELAY

## 1 POLE - 8A Medium Load Control

### JS Series

- 
- UL class B (130°C) coil wire insulation
- 1 form A (SPST-NO) or 1 form C (SPDT) contact
- Low profile and space saving  
Height: 12.5mm - Mounting space: 290mm<sup>2</sup>
- High sensitivity in small package  
Operating power 110 to 140mW  
Nominal power 220 to 290mW
- High insulation in small package  
Insulation distance: 8.0mm (between coil and contacts) Dielectric strength: 5,000VAC  
Surge strength: 10,000V
- Plastic materials  
UL 94 flame class V-0 UL CTI level class 2
- Plastic sealed
- Various contact material options
- RoHS compliant (Please see page 6 for more information)



#### ■ PARTNUMBERS

[Example]    JS   -   12    M    F   -   K    T   -   V3\*

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

(a)	Relay type	JS : JS series
(b)	Coil Voltage	12 : 5...60VDC (Coil rating table at page 3)
(c)	Coil configuration	Nil : 1 form C (SPDT) M : 1 form A (SPST-NO)
(d)	Contact material	D : Silver nickel F : Gold flash silver nickel N : Gold flash silver tin oxide
(e)	Enclosure	K : Plastic sealed type
(f)	Construction	Nil : 3.2mm T : 5.0mm (only JS-MN)
(g)	Gold plating	Nil : Standard V3 : 3.0μm gold plating for lower current applications (available with N contact, not available for T, 5.0mm type) V1 : 1.0μm gold plating for lower current applications (available with N contact, not available for T, 5.0mm type)

Note: Actual marking omits the hyphen (-) or (\*)  
\*: V3, V1 are marked at different position on the relay  
E.g.: Ordering code: JS-12F actual marking: JS12F-K

# JS Series

## ■ Specifications

Item		JS-( ) F/N-K	JS-( )D -K	JS-( ) N-K-V1	JS-( ) N-K-V3	Remarks / conditions	
Contact data	Configuration	1 form A (SPST-NO), 1 form C (SPDT)					
	Construction	Single					
	Plating	Au flash	-	1μm Au plated	3μm Au plated		
	Material	See partnumber information					
	Resistance	Max. 100mΩ		Max. 30mΩ		6VDC, 1A	
	Contact rating	8A, 250VAC / 24VDC				Resistive	
	Max. carrying current	10A					
	Max. switching voltage	400VAC / 300VDC					
	Max. switching power	2000VA / 192W					
	Min. switching load *1	100mA, 5VDC		10mA, 5VDC			
Coil	Rated power (20°C)	220 to 290mW					
	Operate power (20°C)	110 to 140mW					
	Operating temperature range	-40°C ~ +85°C (at rated voltage)				No frost	
Timing data	Operate	Max. 10ms				Without bounce	
	Release	Max. 5ms				Without bounce, no diode	
Life	Mechanical	Min. 20 x 10 <sup>6</sup> operations					
	Electrical (resistive)	AC contact rating	Min. 50 x 10 <sup>3</sup> operations (AgSnO <sub>2</sub> ) Min. 20 x 10 <sup>3</sup> operations (AgNi)			At rated load	
		DC contact rating	Min. 50 x 10 <sup>3</sup> operations (AgSnO <sub>2</sub> ) Min. 20 x 10 <sup>3</sup> operations (AgNi)			At rated load	
Insulation	Insulation resistance	1000VAC (50/60Hz), 1 minute					
	Dielectric strength	Open contacts	Min. 1000MΩ at 500VDC				
		Coil contact	5000VAC (50/60Hz), 1 minute				
	Surge strength	Coil to contacts	10000V / 1.2 x 50μs standard wave				
	Clearance	8mm					
	Creepage	8mm					
	EN61810-1, VDE0435	Voltage	250V				
		Pollution	3				
Material group		III a					
Category		C / 250V (reference voltage) (VDE 01106)					
Other	Vibration resistance	Misoperation	10~55~10Hz single amplitude 0.825mm				
		Endurance	10~55~10Hz single amplitude 1.65mm				
	Shock resistance	Misoperation	Min. 100m/s <sup>2</sup> (11±1ms)			Direction X, Y, Z contact ON/OFF total 36 times	
		Endurance	Min. 1,000m/s <sup>2</sup> (6±1ms)			Direction X, Y, Z contact OFF total 18 times	
	Dimensions / weight	10.0 x 29.0 x 12.5 mm / approx. 8.0g					
Sealing	Plastic sealed						

\*1: 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.

# JS Series

## ■ Coil Data

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance $\pm 10\%$ ( $\Omega$ )	Must Operate Voltage* (VDC)	Must Release Voltage* (VDC)	Rated Power (mW)
005	5	112	3.5	0.5	225
006	6	160	4.2	0.6	
009	9	360	6.3	0.9	
012	12	660	8.5	1.2	220
018	18	1,455	12.7	1.8	225
024	24	2,350	16.8	2.4	245
048	48	8,000	33.4	4.8	290
060	60	12,500	41.7	6.0	

Note: All values in the table are valid at 20°C and zero contact current, unless otherwise specified.

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

Note: Please use at rated coil voltage. Please refer to characteristic data and set up adequate voltage in case of use at over voltage.

Note: Care shall be taken on the heat generated on PC board when maximum carrying current exceeds 10A. Please perform the confirmation test with actual conditions.

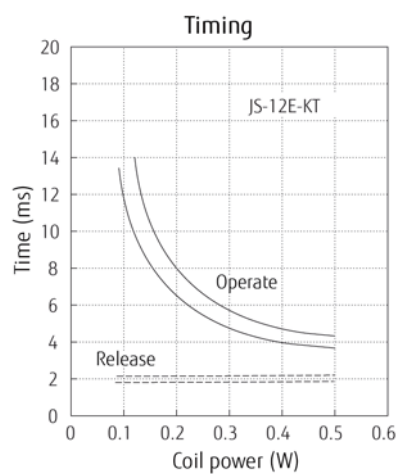
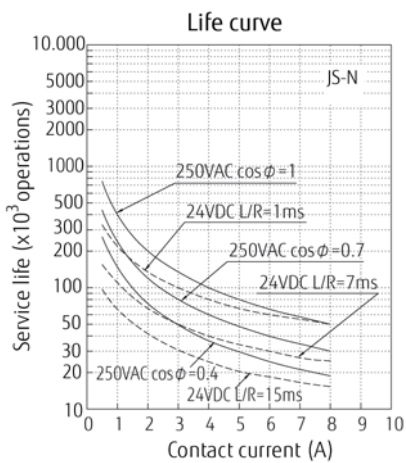
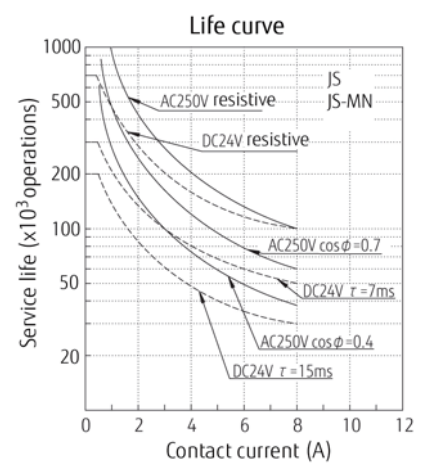
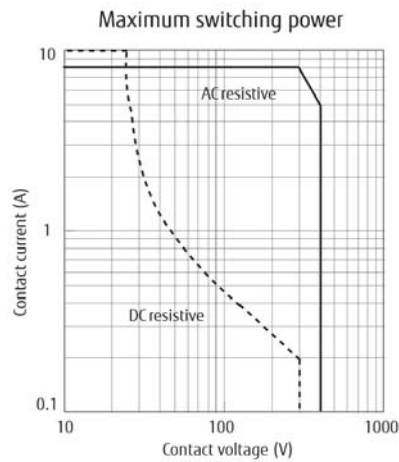
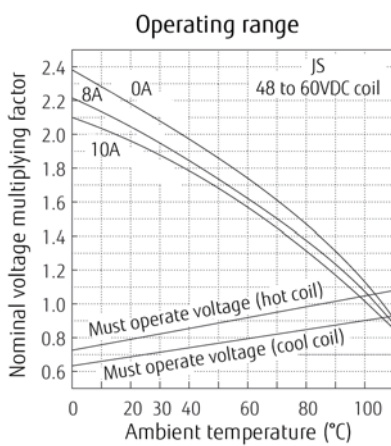
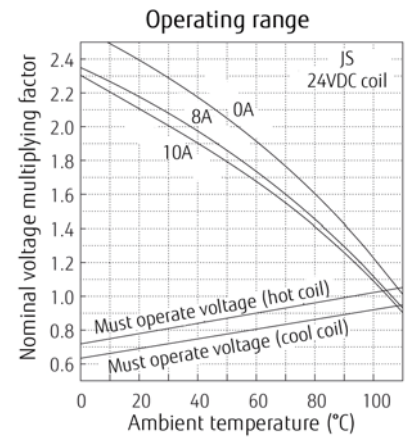
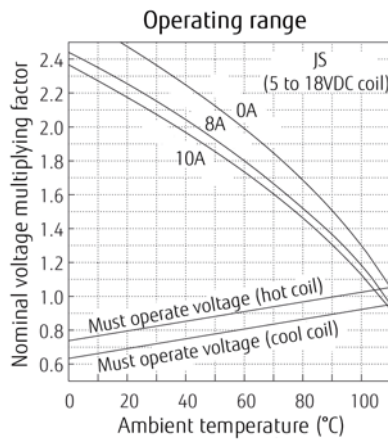
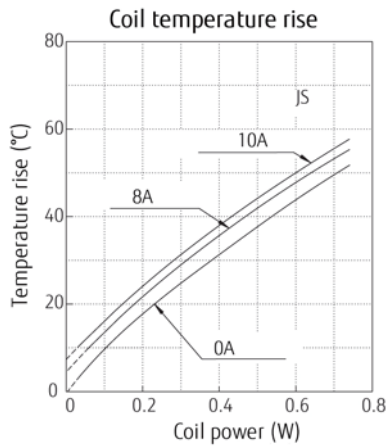
## ■ Safety Standards

Type	Compliance	Contact rating		
UL	UL508	Flammability: UL94-V-0 (plastics)		
	File No. E56140	Contact material: Nil, E	N	D, F
		8A, 24VDC (resistive) 100k 8A, 250VAC (resistive) 100k 10A, 30VDC (resistive) 10A, 250VAC (resistive) 1/4HP, 125VAC/250VAC 1/3HP, 125VAC 1/2HP, 250VAC Pilot duty: C150, B300 Pilot duty: 0.27A, 250VDC	8A, 24VDC (resistive) 100k 8A, 250VAC (resistive) 100k 10A, 30VDC (resistive) 10A, 250VAC (resistive) 1/4HP, 125VAC/250VAC 1/3HP, 125VAC 1/2HP, 250VAC Pilot duty: A300, B300, C150, R300	8A, 24VDC (resistive) 8A, 250VAC (resistive)
CSA	C22.2 No. 14  File No. LR35579			
VDE	IEC/EN61810 EN60335-1 clause 15.3; 16.3; 29.1; 29.2; 29.3 EN60730-1 clause 12.2; 13.2; 20.1; 20.2; 20.3 EN60947-5-1 Appendix C	8A, 250VAC ( $\cos\phi=1$ ) 8A, 24VDC (L/R=0ms)		JS-( )D-K, JS-( )F-K: 6A, 250VAC ( $\cos\phi=1$ ) 8A, 24VDC (L/R=0ms)  JS-( )MD-K, JS-( )MF-K: 8A, 240VAC ( $\cos\phi=1$ ) 8A, 24VDC (L/R=0ms)
CQC	GB15092.1 File No. 17001162883	10A, 30VDC/250VAC (except -V3 type)		

# JS Series

## ■ Characteristic Data (Reference)

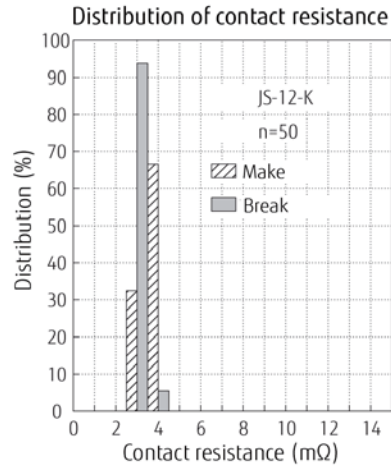
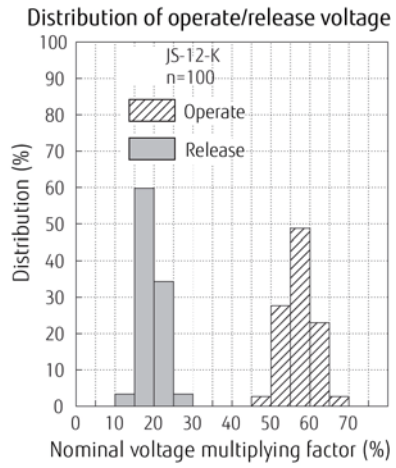
\* Characteristic data is not guaranteed value but measured values of samples from production line.



# JS Series

## ■ Characteristic Data (Reference)

\* Characteristic data is not guaranteed value but measured values of samples from production line.

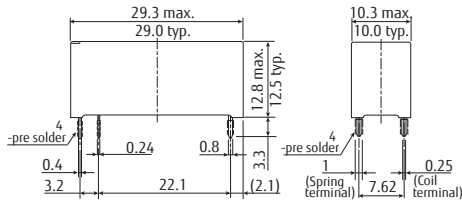


# JS Series

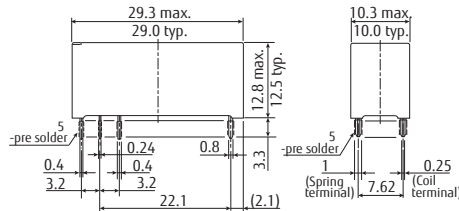
## ■ Dimensions

- Dimensions

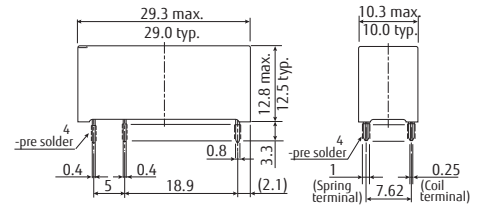
JS-M(-K)



JS(-K)



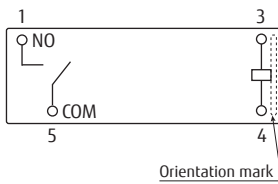
JS-MN-(K)T



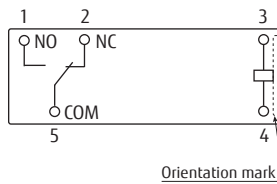
\* Dimensions of the terminals do not include thickness of pre-solder.

- Schematics (BOTTOM VIEW)

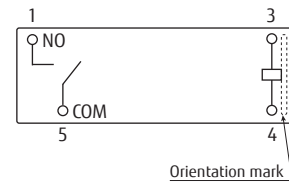
JS-M(-K)



JS(-K)

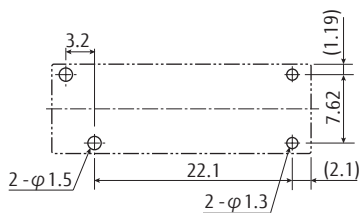


JS-MN-(K)T

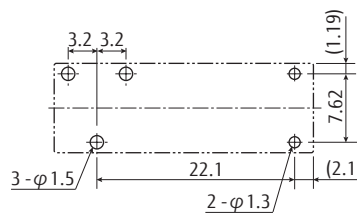


- PC Board Mounting Hole Layout (BOTTOM VIEW)

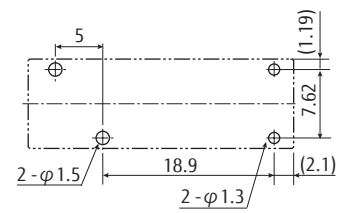
JS-M(-K)



JS(-K)



JS-MN-(K)T



\* Tolerance of PC board mounting hole layout:  $\pm 0.1$  unless otherwise specified.

( ): Reference value  
Unit: mm

## CAUTIONS

- All values mentioned in this datasheet are provided under ideal conditions. Please perform the confirmation test before actual use.
- Reflow soldering is prohibited.
- Do not use relays in the atmosphere with sulfide gas, chloride gas or nitric oxide. Contact resistance may increase.
- Do not use silicon or silicon-containing product or materials near relays. It may cause contact failure.

## GENERAL INFORMATION

### 1. ROHS Compliance

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU, including commission delegated directive 2015/863.

### 2. Recommended lead free solder condition

- 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.
- Recommended solder for assembly: Sn-3.0Ag-0.5Cu.

#### Flow Solder Condition:

Pre-Heating: Maximum 120°C within 90 sec.

Soldering: Eip within 5 sec. at 255°C±5°C solder bath

Relay must be cooled by air immediately after soldering

#### Solder by Soldering Iron:

Soldering Iron: 30-60W

Temperature: Maximum 340-360°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.

# JS Series

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## Contact

### Japan

FUJITSU COMPONENT LIMITED  
Shinagawa Seaside Park Tower  
12-4, Higashi-shinagawa 4-chome,  
Tokyo 140 0002, Japan  
Tel: (81-3) 3450-1682  
Email: fcl-contact@cs.fcl-components.com

### North and South America

FUJITSU COMPONENTS AMERICA  
350 Cobalt Way, M/S 160  
Sunnyvale, CA 94085 U.S.A.  
Tel: (1-408) 745-4900  
Email: components@gr.fcl-components.com

### Europe

FUJITSU COMPONENTS EUROPE  
Diamantlaan 25  
2132 WV Hoofddorp, Netherlands  
Tel: (31-23) 5560910  
Email: info.fceu@cs.fcl-components.com

### Asia Pacific

FUJITSU COMPONENTS ASIA.  
No. 20 Harbour Drive, #07-01B  
Singapore 117612  
Tel: (65) 6375-8560  
Email: fcal@fcl-components.com

### China

FUJITSU ELECTRONIC COMPONENTS  
(SHANGHAI)  
Unit 4306, InterContinental Center  
100 Yu Tong Road, Shanghai 200070, China  
Tel: (86 21) 3253 0998  
Email: fcsh@fcl-components.com

### Hong Kong

FUJITSU COMPONENTS HONG KONG  
Room 13, 23/F, Seapower Tower, Concordia  
Plaza, No.1 Science Museum Road, Tsim  
Sha Tsui East, Kowloon, Hong Kong  
Tel: (852) 2881 8495  
Email: fcal@fcl-components.com

### Korea

FUJITSU COMPONENTS KOREA  
Alpha Tower #403, 645 Sampoong-dong,  
Bundang-gu, Seongnam-si, Gyeonggi-do, 13524 Korea  
Tel: (82 31) 708-7108  
Email: fcal@fcl-components.com

**Web:** [www.fcl.fujitsu.com/en/](http://www.fcl.fujitsu.com/en/)

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