

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: 290mm²
- 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 ⁶ operations					
	Electrical (resistive)	AC contact rating	Min. 50 x 10 ³ operations (AgSnO ₂) Min. 20 x 10 ³ operations (AgNi)			At rated load	
		DC contact rating	Min. 50 x 10 ³ operations (AgSnO ₂) Min. 20 x 10 ³ 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 ² (11±1ms)			Direction X, Y, Z contact ON/OFF total 36 times	
		Endurance	Min. 1,000m/s ² (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 $\pm 10\%$ (Ω)	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.

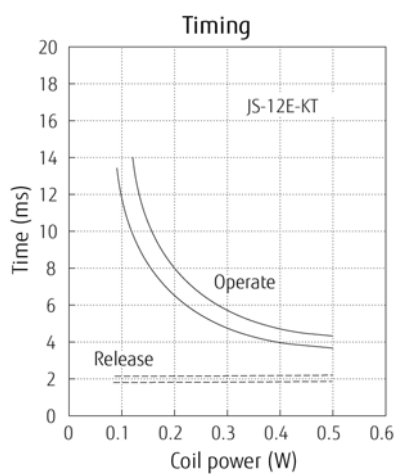
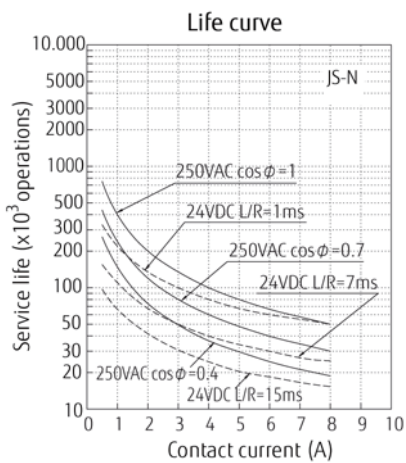
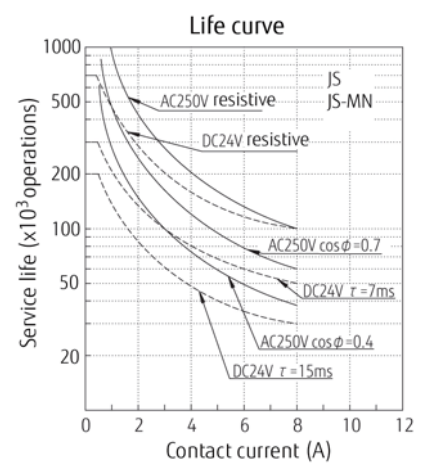
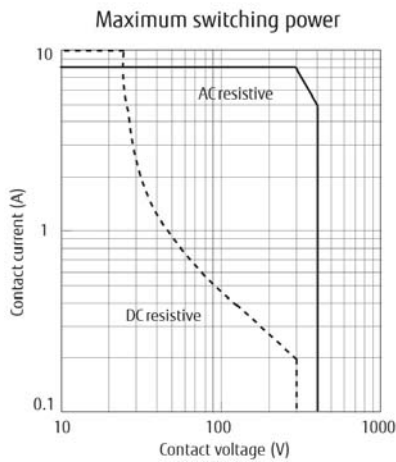
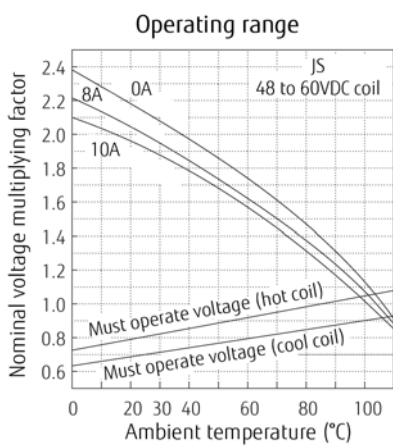
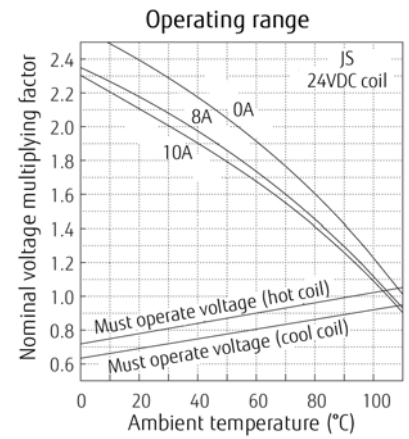
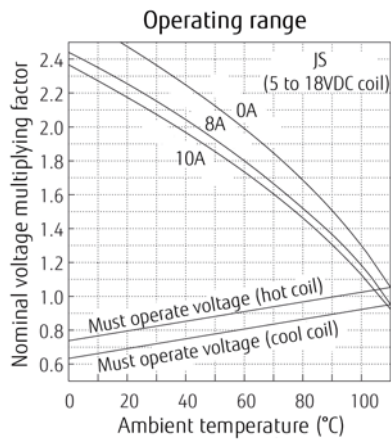
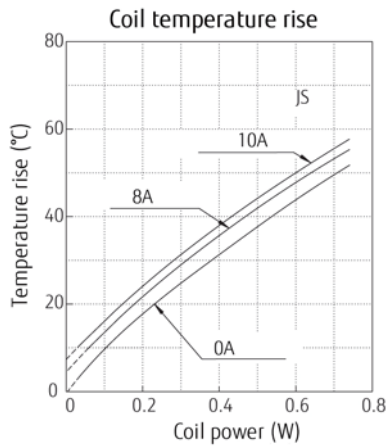
■ Safety Standards

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)

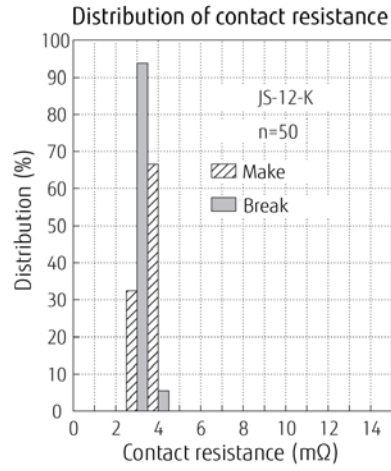
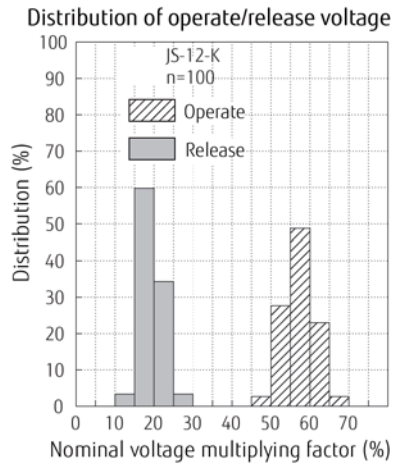
* Characteristic data is not guaranteed value but measured values of samples from production line.



JS Series

■ Characteristic Data (Reference)

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

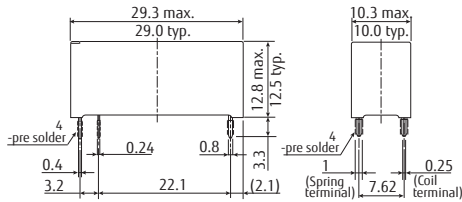


JS Series

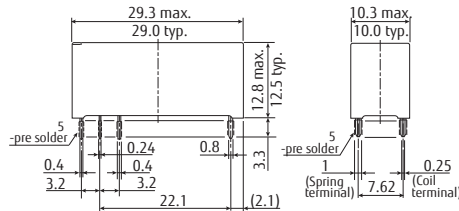
■ Dimensions

- Dimensions

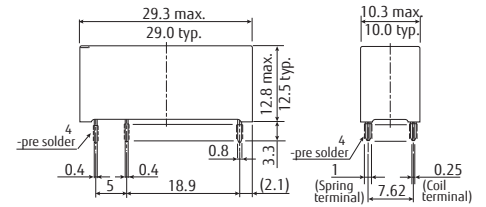
JS-M(-K)



JS(-K)



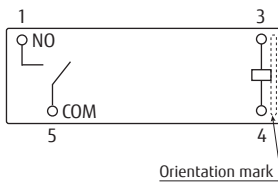
JS-MN-(K)T



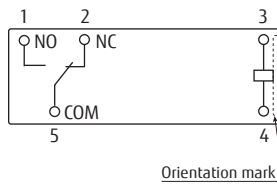
* Dimensions of the terminals do not include thickness of pre-solder.

- Schematics (BOTTOM VIEW)

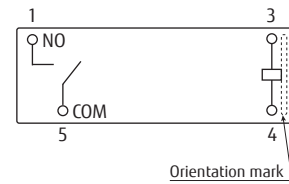
JS-M(-K)



JS(-K)

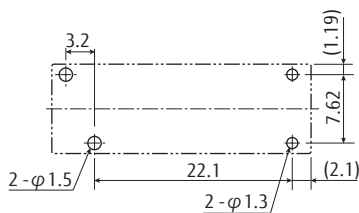


JS-MN-(K)T

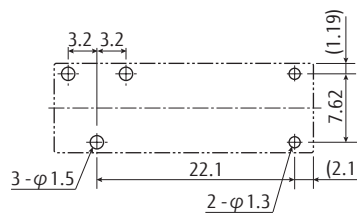


- PC Board Mounting Hole Layout (BOTTOM VIEW)

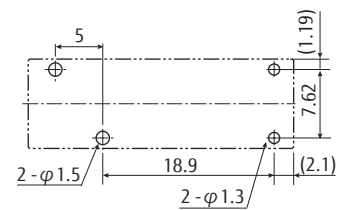
JS-M(-K)



JS(-K)



JS-MN-(K)T



* Tolerance of PC board mounting hole layout: ± 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 FCL 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.

Contact

Japan

FCL COMPONENTS 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

FCL COMPONENTS AMERICA, INC.
2055 Gateway Place Suite 480,
San Jose, CA 95110 USA
Tel: +1-408-745-4900
Email: fcai.components@fcl-components.com

Europe

FCL COMPONENTS EUROPE B.V.
Diamantlaan 25
2132 WV Hoofddorp, Netherlands
Tel: +31-23-556-0910
Email: info.fceu@cs.fcl-components.com

Asia Pacific

FCL COMPONENTS ASIA PTE LTD.
No. 20 Harbour Drive, #07-01B
Singapore 117612
Tel: +65-6375-8560
Email: fcal@fcl-components.com

China

FCL COMPONENTS (SHANGHAI) CO., LTD.
Unit 1105, Central Park - Jing An,
No.329 Heng Feng Road, Shanghai 200070,
China
Tel: +86-21-3253 0998
Email: fcsh@fcl-components.com

Web: www.fcl-components.com/en/

© 2024 FCL Components Limited. All rights reserved. All trademarks or registered trademarks are the property of their respective owners.

FCL Products are intended for general use, including without limitation, in personal, household and office environments, in buildings and for ordinary use in the industry. FCL Products are not intended to be used in applications where extremely high safety is required ("High Safety Required Applications"), such as, but not limited to, applications in nuclear facilities, in aircraft automatic flight control, in air traffic control, in mass transit system control, in missile launch system, in weapon systems, in medical equipment for life support or any application involving a direct serious risk of physical injury or death.

Please do not use FCL Products without securing the sufficient safety and reliability required for the High Safety Required Applications. In addition, FCL shall not be liable against the customer and/or any third party for any claims or damages arising in connection with the use of FCL Products in the High Safety Required Applications.

FCL warrants that its Products, if properly used and services, will conform to their specification and will be free from defects in material and workmanship for twelve months from delivery.

The implied warranties of merchantability and fitness for a particular purpose and all other warranties, representations and conditions, express or implied by statute, trade usage or otherwise, except as set forth in this warranty, are excluded and shall not apply to the Products delivered.

The contents, data and information in this datasheet are provided by FCL Components Limited as a service only to its user and only for general information purposes. The use of the contents, data and information provided in this datasheet is at the users' own risk.

FCL has assembled this datasheet with care and will endeavor to keep the contents, data and information correct, accurate, comprehensive, complete and up to date.

FCL Components Limited and affiliated companies do however not accept any responsibility or liability on their behalf, nor on behalf of its employees, for any loss or damage, direct, indirect or consequential, with respect to this datasheet, its contents, data, and information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof.

Nor do FCL Components Limited and affiliated companies accept on their behalf, nor on behalf of its employees, any responsibility or liability with respect to these datasheets, its contents, data, information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof. Rev. February 1, 2024.
