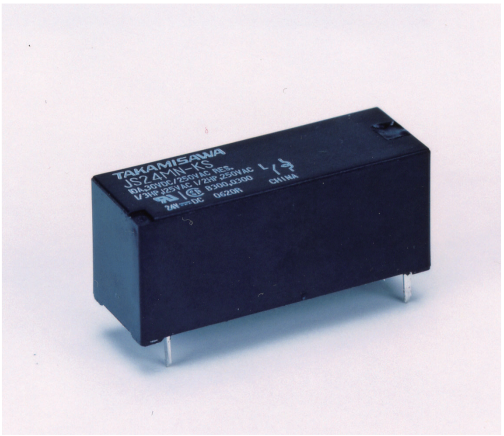
POWER RELAY
1 POLE - 8A MEDIUM LOAD CONTROL

JS-KS Series

RoHS Compliant

■ FEATURES



- Inrush current 65A, 1,000W, lamp load
- UL class B (130°C) coil wire insulation
- 1 form A (SPST-NO)
- Low profile and space saving
- Height: 12.5mm - Mounting space: 290mm^2
- High sensitivity in small package
  Operating power 84 to110mW
  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 type, RTIII
- RoHS compliant

■ APPLICATIONS

I/O modules, timer, heater control, air conditioner etc.

■ PART NUMBERS

[Example] JS - 12 M N - K S
(a) (b) (c) (d) (e) (f)

(a)	Relay type	JS series
(b)	Coil voltage	12 : 5....60VDC Please refer to coil rating table
(c)	Contact configuration	M : 1a (1 Form A, SPST-NO)
(d)	Contact material	N : Gold flash silver tin oxide
(e)	Enclosure	K : Plastic sealed type
(f)	Construction	S : 5.0mm (lamp load 1,000W, 230VAC, 25,000 operations)

Note: Actual marking omits the hyphen (-)

■ SPECIFICATIONS

Item			Specifications	Remarks/Conditions
Contact Data	Configuration		1a (1 Form A, SPST-NO)	
	Construction		Single	
	Material		$AgSnO_2$+gold flash 0.1μm	
	Resistance		Max. 100mΩ	At 1A, 6VDC
	Contact rating		8A, 250VAC/24VDC	Resistive
	Max. carrying current		10A	
	Max. inrush current		65A, 250VAC	
	Max. switching voltage		400VAC/150VDC	
	Max. switching power		2,000VA/192W	
	Min. switching load *1		100mA, 5VDC	
Coil	Rated power (20°C)		220 to 290mW	
	Operate power (20°C)		84 to 110mW	
	Operating temperature range		-40°C ~ +85°C (at rated voltage)	No frost
Time	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. 100 x 10^3 operations	At rated load
		DC contact rating	Min. 100 x 10^3 operations	At rated load
		Lamp load	1,000W 25x10^3 operations	UL TV-4
Insulation	Insulation resistance		Min. 1000MΩ	At 500VDC
	Dielectric strength	Open contacts	1,000VAC (50/60Hz), 1 minute	
		Coil to contacts	5,000VAC (50/60Hz), 1 minute	
	Surge strength	Coil to contacts	10,000V / 1.2 x 50μs standard wave	
	Clearance		8mm	
	Creepage		8mm	
	EN61810-1, VDE0435	Voltage	250V	
		Pollution	3	
		Material group	IIIa	
		Category	C / 250V (reference voltage) (VDE 01106)	
Others	Vibration resistance	Misoperation	10 to 55 to 10Hz single amplitude 0.825mm	Coil ON/OFF, 3 axis, total 6 cycles
		Endurance	10 to 55 to 10Hz single amplitude 1.65mm	Coil OFF, 3 axis, total 6 hours
	Shock resistance	Misoperation	Min. 100m/s^2 (11±1ms)	Coil ON/OFF, 3 axis, total 36 operations
		Endurance	Min. 1,000m/s^2 (6±1ms)	Coil OFF, 3 axis, total 18 operations
	Dimensions / Weight		10.0 x 29.0 x 12.5mm / 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.

■ COIL DATA

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance (Ω)±10%	Must Operate Voltage*1 (VDC)	Must Release Voltage*1 (VDC)	Rated Power (mW)
5	5	112	3.1	0.5	225
6	6	160	3.72	0.6	225
9	9	360	5.58	0.9	225
12	12	660	7.44	1.2	220
18	18	1,455	11.16	1.8	225
24	24	2,350	14.88	2.4	245
48	48	8,000	29.7	4.8	290
60	60	12,500	37.2	6.0	290

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

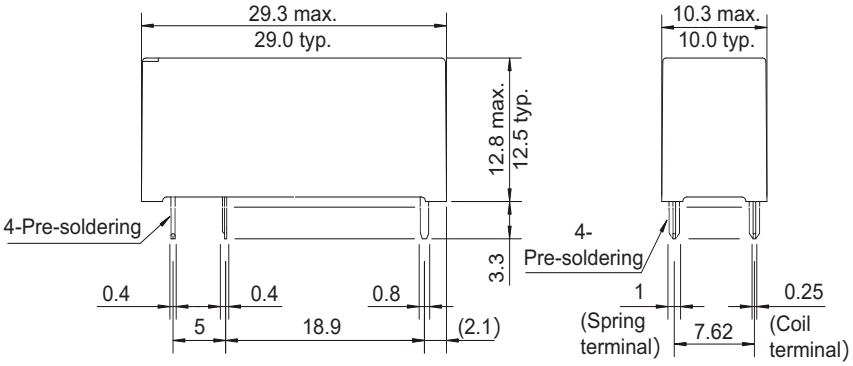
Type	Compliance	Contact Rating
UL	Flammability: UL 94-V-0 (plastics)	
	UL508 File No. E56140	10A, 30VDC (resistive) 10A, 250VAC (resistive) TV-4, 120VAC/240VAC (N.O.) 1/4hp 125VAC/250VAC 1/3hp 125VAC 1/2hp 250VAC Pilot duty: C150, A300, B300, R300
CSA	C22.2 No.14 File No. LR40304	

■ PART NUMBER LIST

Part Number	Contact Configuration	Contact Material	Enclosure	Construction	Inrush
JS-( )MN-KS	1a (1 Form A)	Gold flash silver tin oxide	Plastic sealed	5.0mm	65A

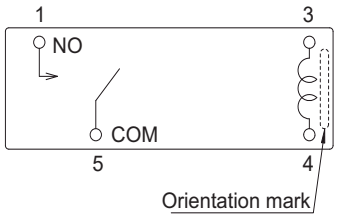
■ DIMENSIONS

●Dimensions

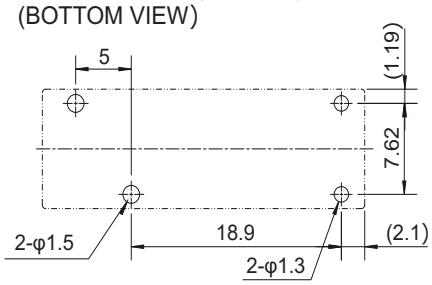


* Dimensions of the terminals do not include thickness of pre-soldering.

●Schematics
(BOTTOM VIEW)



●PC Board Mounting Hole Layout
(BOTTOM VIEW)



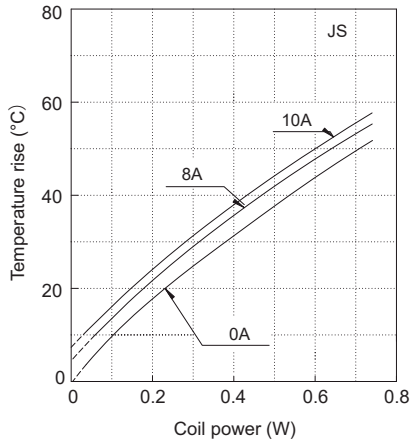
* Tolerance of PC board mounting hole layout:
* ±0.1 unless otherwise specified.

( ): Reference
Unit: mm

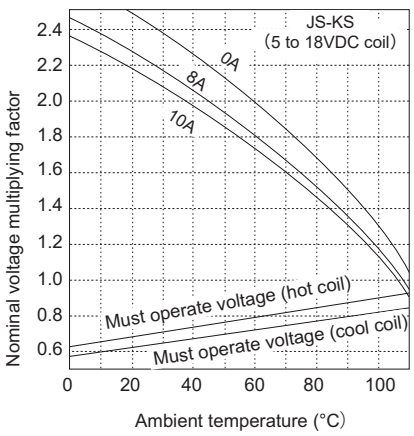
■ CHARACTERISTIC DATA

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

Coil temperature rise



Operating range



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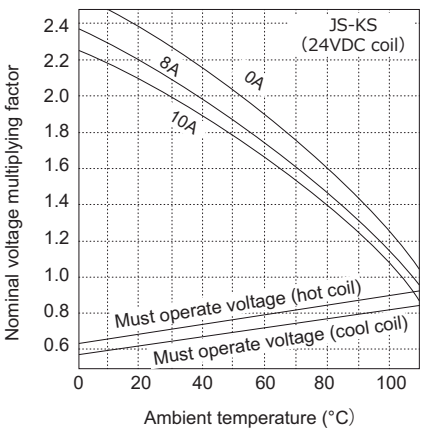

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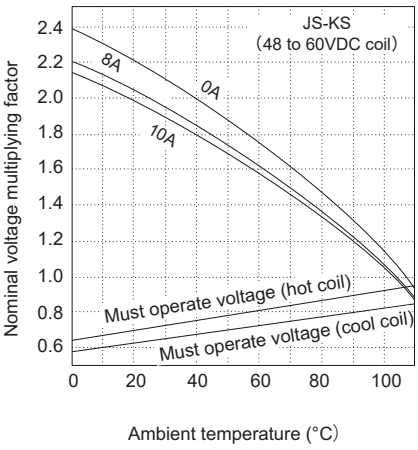
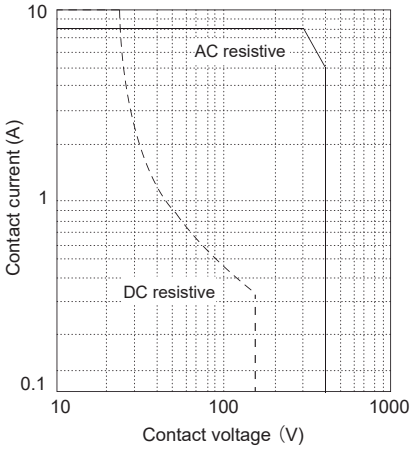
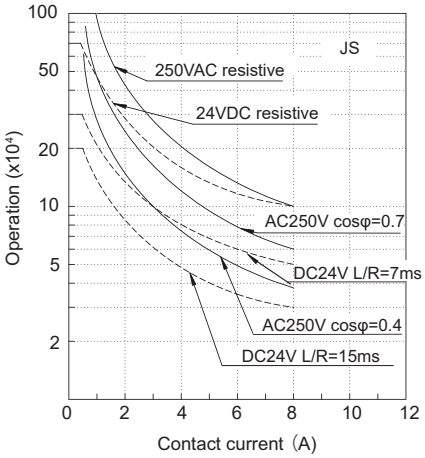


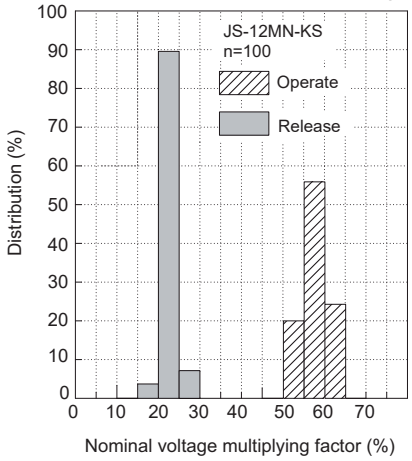
Maximum switching power



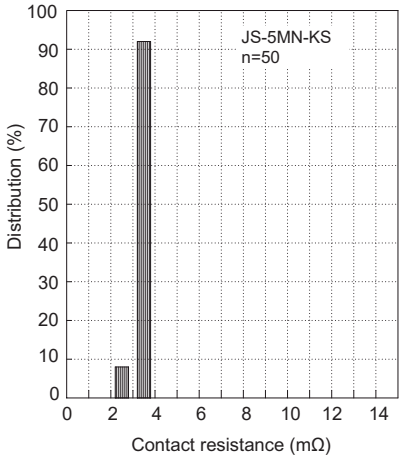
Life curve



Distribution of operate/release voltage



Distribution of contact resistance



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:	Dip 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@fcl-components.eu

Asia Pacific
FCL COMPONENTS ASIA PTE LTD.
51 Changi Business Park Central 2, #06-07
The Signature Singapore 486066
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

Hong Kong
FCL COMPONENTS HONG KONG CO., LIMITED
Unit 2313, Seapower Tower, Concordia
Plaza, No.1 Science Museum Road,
TST, Kowloon, Hong Kong
Tel: +852-2881-8495
Email: fcal@fcl-components.com

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

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