

*To be discontinued in March 2020*

# POWER RELAY

## 1 POLE - 8A Polarized Latching Type

### JSL Series

#### ■ FEATURES

- Small footprint  
Width: 10mm  
Height: 12.5mm
- High insulation  
Insulation distance : 8.0 mm (between coil and contacts)  
Dielectric strength : 5,000 VAC  
Surge strength : 10,000 V
- Plastic materials  
UL 94 flame class V-0
- RoHS compliant  
Please see page 7 for more information



#### ■ Part Numbers

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

(a)	Relay type	JS : JSL series
(b)	Coil type	Nil : 1 coil D : 2 coils
(c)	Coil rated voltage	12 : 3....24VDC Contact rating table at page 3
(d)	Contact configuration	Nil : 1 form c M : 1 form a
(e)	Contact material	N : AgSnO <sub>2</sub> , Au plated
(f)	Sealed type	K : Plastic sealed type
(g)	Special type	Nil : Standard

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

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# JSL Series

## ■ Specifications

Item			JSL (1 coil)	JSL-D (2 coils)	Remarks / conditions
Contact data	Configuration		1 form A, 1 form C		
	Construction		Single		
	Material		AgSnO <sub>2</sub> + Au plated		
	Resistance		Max. 100mΩ at 6VDC, 1A		
	Contact rating		8A, 250VAC / 24VDC		Resistive
	Max. carrying current		10A		
	Max. switching voltage		400VAC / 150VDC		
	Max. switching power		2000VA / 192W		
	Max. switching current		10A		
	Min. switching load <sup>*1</sup>		100 mA, 5VDC		
Coil	Rated power (20°C)		220 - 290mW	480mW	
	Operating temperature range		-40°C ~ +85°C (at rated voltage)		No frost
Timing data	Set / reset (at nominal coil voltage)		Max. 10ms		without bounce, no diode
	Applied pulse width		20ms to 1000ms		
Life	Mechanical		Min. 5 × 10 <sup>6</sup> operations		
	Electrical (resistive)		Min. 50 × 10 <sup>3</sup> operations		At rated load
Insulation	Insulation resistance		Min. 1000MΩ at 500VDC		
	Dielectric strength	Open contacts	1000VAC (50/60Hz), 1 minute		
		Coil contact	5000VAC (50/60Hz), 1 minute		
	Surge strength	Coil to contacts	10000V / 1.2 × 50μs standard wave		
	Clearance		8mm		
	Creepage		8mm		
Other	Vibration resistance	Misoperation	10Hz ~ 55Hz ~ 10Hz single amplitude 1mm		
		Endurance	10Hz ~ 55Hz ~ 10Hz single amplitude 1.5mm		
	Shock resistance	Misoperation	Min. 100m/s <sup>2</sup> (11 ± 1ms)		
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)		
	Dimensions / weight		10.0 × 29.0 × 12.5 mm / approx. 8.0g		
	Sealing		Plastic sealed		

<sup>\*1</sup>: 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.

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# JSL Series

## ■ Coil Data

Coil code	1 coil			2 coils		
	Operating range		Coil Resistance +/- 10% (Ohm)	Operating range		Coil Resistance +/- 10% (Ohm)
	Min. VDC	Max. VDC		Min. VDC	Max. VDC	
003	2.4	5.4	41	2.4	5.4	19
005	4	9	114	4	9	53
012	9.6	21.2	655	9.6	21.2	300
024	19.2	42.2	2304	19.2	42.2	1200

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

\*: Specified operated 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.

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.

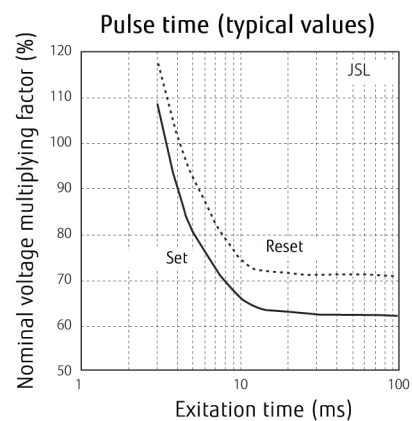
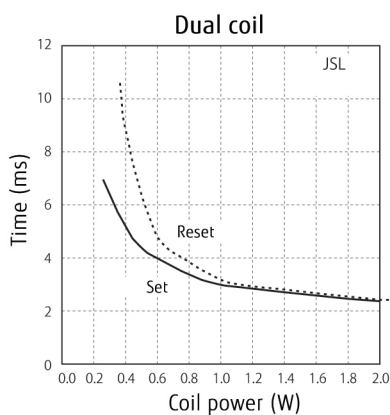
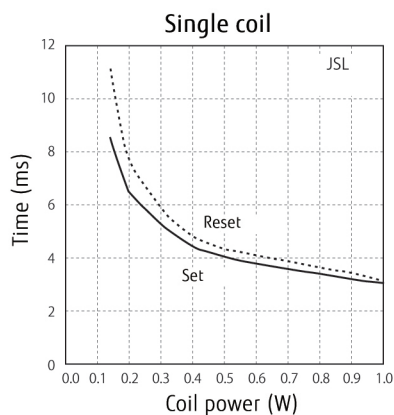
## ■ Safety Standards

Type	Compliance	Contact rating
UL	UL 508 File No. E63614	Flammability: UL 94-V-0 (plastics) 8A, 24 VDC (resistive) 8A, 250VAC (resistive)
CSA	C22.2 No. 14 File No. LR 40304	
VDE	IEC/EN61810-1 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; 17.5; 17.7; 17.8 EN60974-1 Appendix C	8A, 24VDC (0ms) 8A, 250VAC (cosφ=1)

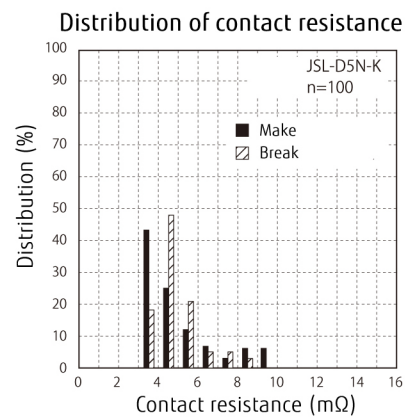
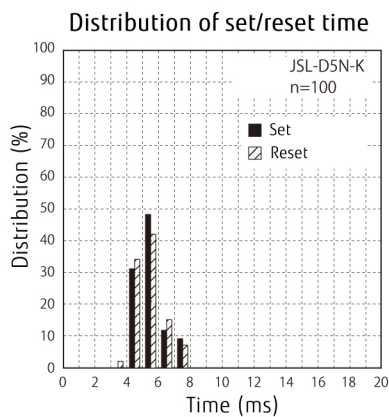
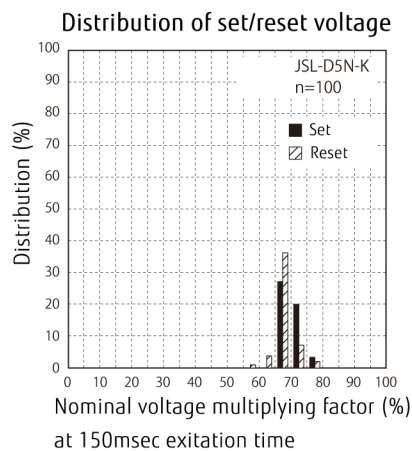
## ■ Characteristic Data (Reference)

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

Set/Reset time characteristic (typical values)



## ■ Reference Data



## ■ Reference Data

Version	1 coil		2 coil		
Terminal No.	3	5	3	4	5
Set	-	+		-	+
Reset	+	-	+	-	

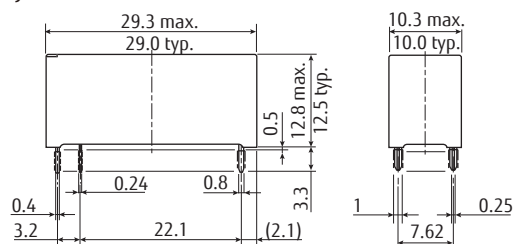
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# JSL Series

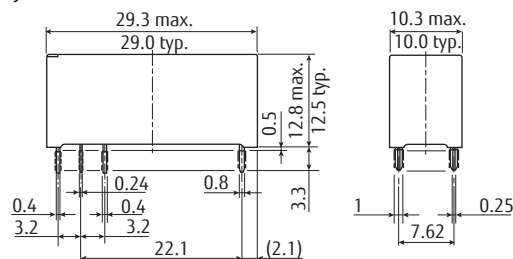
## ■ Dimensions

- Dimensions

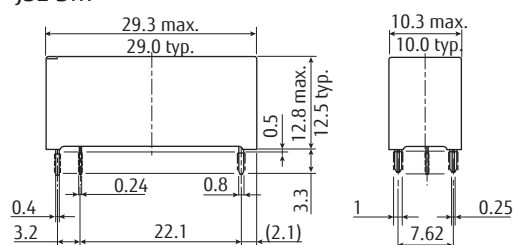
JSL-M



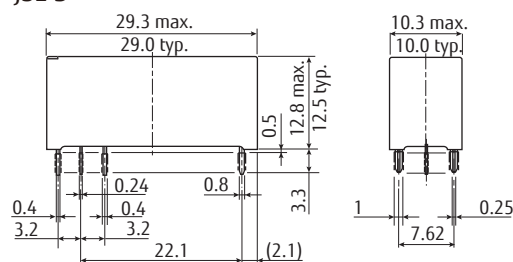
JSL



JSL-DM



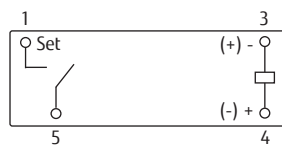
JSL-D



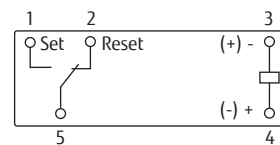
\* Dimensions of the terminals do not include thickness of pre-solder.

- Schematics  
(BOTTOM VIEW)

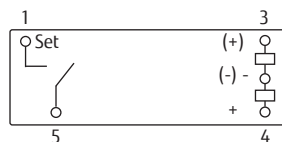
JSL-M



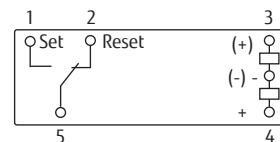
JSL



JSL-DM



JSL-D

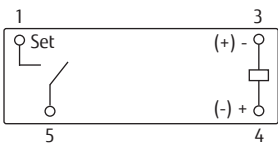


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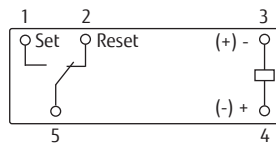
# JSL Series

- PC Board Mounting Hole Layout  
(BOTTOM VIEW)

JSL-M



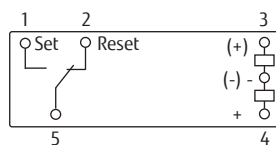
JSL



JSL-DM



JSL-D



( ): Reference value

Unit: mm

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

## GENERAL INFORMATION

### 1. ROHS Compliance

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU including amendments.
- Use of Cadmium in electrical contacts is exempted as per Annex III of the RoHS directive 2011/65/EU. Please consider expiry date of exemption. Relays with Cadmium containing contacts are not to be used for new designs.
- All relays are lead-free. Please refer to Lead-Free Status Info for older date codes at: <http://www.fujitsu.com/downloads/MICRO/fcai/relays/lead-free-letter.pdf>
- Characteristic data is not guaranteed values, but measured values of samples from production line.

### 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 350-360°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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