

# POWER RELAY

## 1 POLE - 8A Polarized Latching Type

### JSL Series

#### ■ FEATURES

- Small footprint
  - Width: 10mm
  - Height: 12.5mm
- High insulation
  - Insulation distance: 8 mm (between coil and contacts)
  - Dielectric strength: 5,000 VAC (between coil and contacts)
  - Surge strength: 10,000 V (between coil and contacts)
- Plastic materials
  - UL 94 flame class V-0
- RoHS compliant.  
Please see page 6 for more information



#### ■ PARTNUMBER INFORMATION

**[Example]**      $\frac{\text{JSL}}{\text{(a)}}$     $\frac{\text{D}}{\text{(b)}}$     $\frac{12}{\text{(c)}}$     $\frac{\text{M}}{\text{(d)}}$     $\frac{\text{N}}{\text{(e)}}$    -    $\frac{\text{K}}{\text{(f)}}$

(a)	Relay type	JSL	: JSL-Series
(b)	Coil type	Nil D	: 1 coil : 2 coils
(c)	Coil rated voltage	12	: 3.....24 VDC Coil rating table at page 3
(d)	Contact configuration	Nil M	: 1 form C : 1 form A
(e)	Contact material	N	: AgSnO <sub>2</sub> , Au plated
(f)	Sealed type	K	: Wash tight

## ■ SPECIFICATION

Item			JSL (1 coil)	JSL (2 coils)
Contact Data	Configuration		1 form A, 1 form C	
	Construction		Single	
	Material		AgSnO <sub>2</sub> + Au plated	
	Resistance (initial)		Max. 100 mΩ at 6VDC, 1A	
	Contact rating (at resistive load)		8A, 250VAC / 24VDC	
	Max. carrying current		10A	
	Max. switching voltage		400VAC / 150VDC	
	Max. switching power		2,000VA / 192W	
	Max. switching current		10A	
Min. switching load *		100 mA, 5 VDC		
Life	Mechanical		Min. 5 x 10 <sup>6</sup> operations	
	Electrical		Min. 50 x 10 <sup>3</sup> operations	
Coil Data	Rated power (at 20 °C)		220mW (24V coil, 250mW)	480mW
	Operating temperature range		-40 °C to +85 °C (no frost)	
Timing Data	Set / reset (at nominal coil voltage)		Max. 10ms (without bounce, without diode)	
	Exitation time (at nominal coil voltage)		Min. 20ms, max. 1,000ms	
Insulation	Resistance (initial)		Min. 1,000MΩ at 500VDC	
	Dielectric strength	Open contacts	1,000VAC (50/60Hz) 1min	
		Contacts to coil	5,000VAC (50/60Hz) 1min	
	Surge strength	Coil to contacts	10,000V / 1.2 x 50μs standard wave	
	Clearance		8 mm	
	Creepage		8 mm	
Other	Vibration resistance	Misoperation>1us	10 to 55Hz double amplitude 2 mm	
		Endurance	10 to 55Hz double amplitude 3 mm	
	Shock	Misoperation>1us	Min. 200m/s <sup>2</sup> (11 ± 1ms)	
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)	
Weight		Approximately 8 g		

\* 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 RATING

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	
3	2.4	5.4	41	2.4	5.4	19
5	4	9	114	4	9	53
12	9.6	21.2	655	9.6	21.2	300
24	19.2	42.2	2,304	19.2	42.2	1,200

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

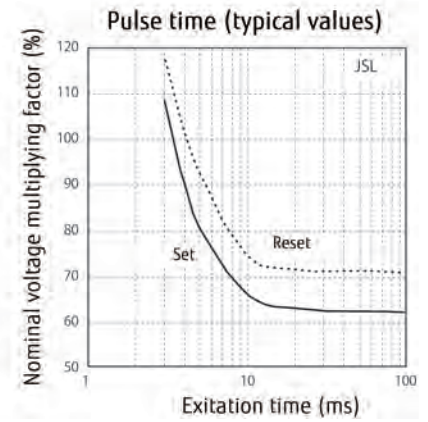
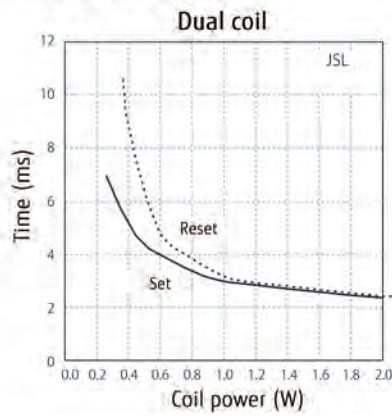
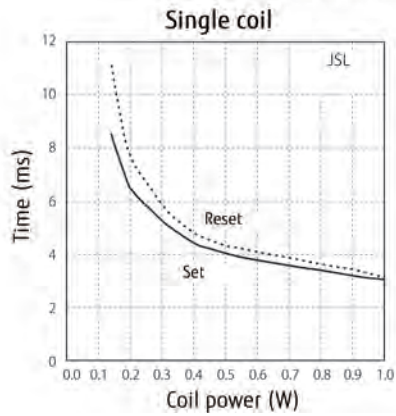
\* Specified operate values are valid for pulse wave voltage.

## ■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
		8A, 24 VDC (resistive) 8A, 250VAC (resistive)
CSA	C22.2 No. 14	
VDE	0435, 0631, 0700	8A, 24VDC (0ms) 8A, 250VAC (cosφ=0)

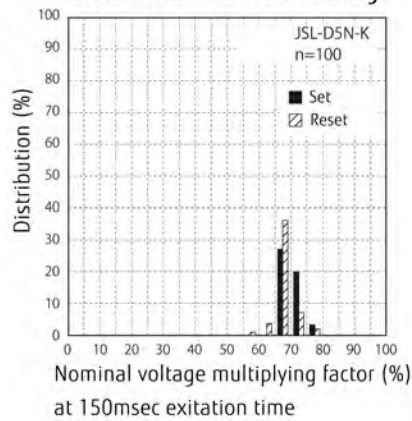
## CHARACTERISTIC DATA

Set/Reset time characteristic (typical values)

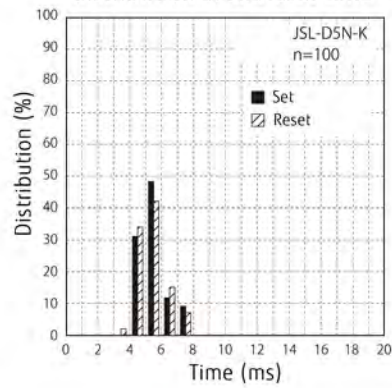


## REFERENCE DATA

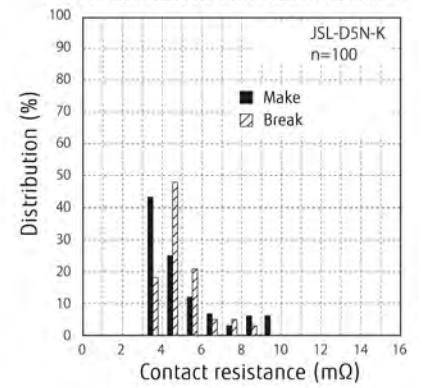
Distribution of set/reset voltage



Distribution of set/reset time



Distribution of contact resistance



## COIL POLARITY

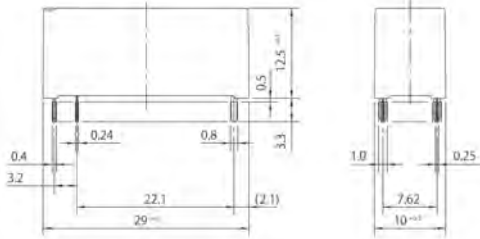
Version	1 coil		2 coils		
Terminal No.	3	5	3	4	5
Set	-	+		-	+
Reset	+	-	+	-	

## ■ DIMENSIONS Unit: mm

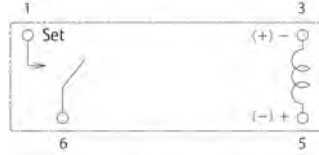
+/- = Set, (+)/(-) = Reset

### JSL-M type

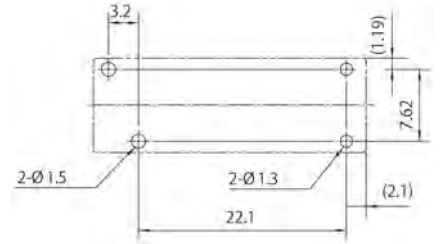
#### ● Dimensions



#### ● Schematics (BOTTOM VIEW)

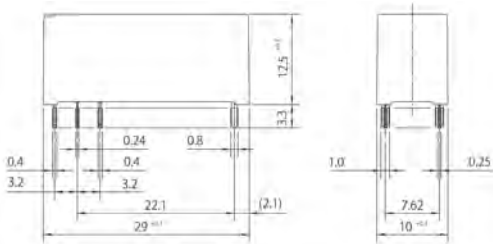


#### ● PC board mounting hole layout (BOTTOM VIEW)

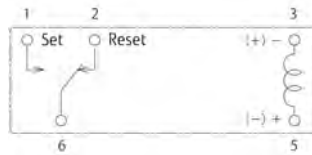


### JSL type

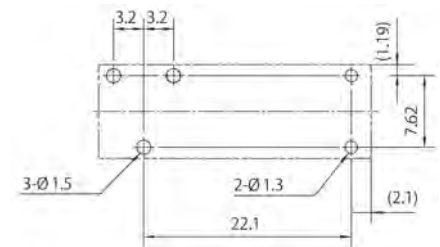
#### ● Dimensions



#### ● Schematics (BOTTOM VIEW)

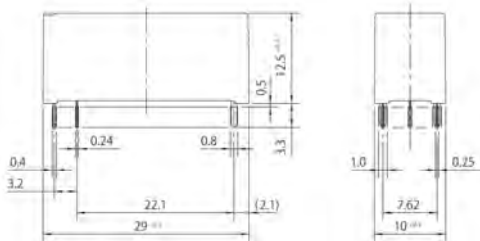


#### ● PC board mounting hole layout (BOTTOM VIEW)



### JSL-DM type

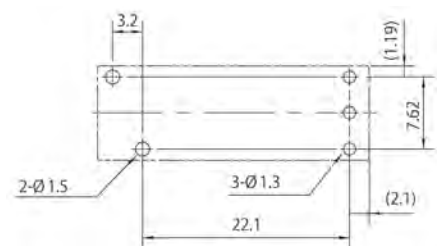
#### ● Dimensions



#### ● Schematics (BOTTOM VIEW)

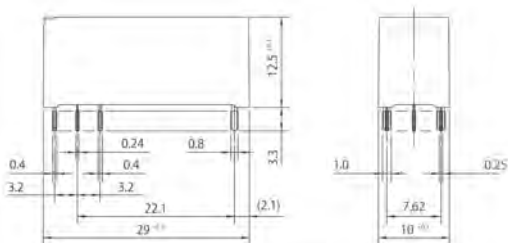


#### ● PC board mounting hole layout (BOTTOM VIEW)

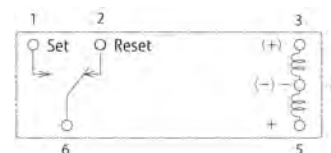


### JSL-D type

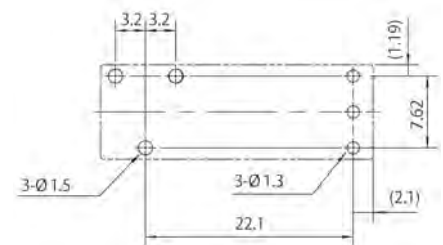
#### ● Dimensions



#### ● Schematics (BOTTOM VIEW)



#### ● PC board mounting hole layout (BOTTOM VIEW)



## RoHS Compliance and Lead Free Information

### 1. General Information

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives.  
As per Annex III of directive 2011/65/EU.
- 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>
- 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 Condition

- Recommended solder Sn-3.0Ag-0.5Cu.

#### Flow Solder Condition:

Pre-heating: maximum 120°C  
within 9 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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