

SOLID STATE RELAY

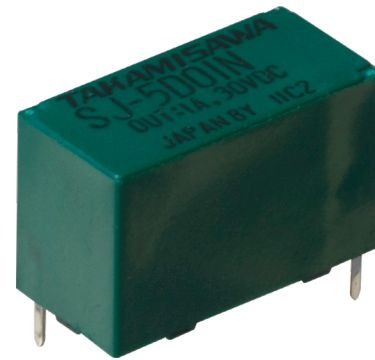
Maximum Load Current 1A

SJ Series

RoHS Compliant

■ FEATURES

- Extremely small and light weight
 - Size: 10.0 (W) × 20.2 (L) × 12.8 (H) mm
 - Weight: approximately 5.5g
 - High reliability, long life and maintenance free
 - High isolation (between input and output)
 - Dielectric strength: 2,500 Vrms
 - Compatible with JY Relay in size and terminal arrangement
 - RoHS compliant
- Please see page 6 for more information



■ PARTNUMBER INFORMATION

[Example]

 SJ - 12 D 01 HZ R N -NV

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

(a)	Relay type	SJ	: SJ Series
(b)	Nominal Voltage (input side)	03: 05: 12: 24:	: 3 VDC (only AC type) : 5VDC : 12VDC : 24VDC
(c)	Load voltage	A D	: AC type : DC type
(d)	Load current	01	: 1A
(e)	Kinds of inverse connection protecting element (only dc type)	Nil HZ	: Diode : Zener diode type
(f)	Output polarity (DC type)	Nil R	: Standard polarity : Reverse poalrity
(g)	Terminal classification	Nil N	: Socket mounting : PC board mounting type
(h)	Kinds of inverse connection protecting element (AC type)	NV	: Without varistor

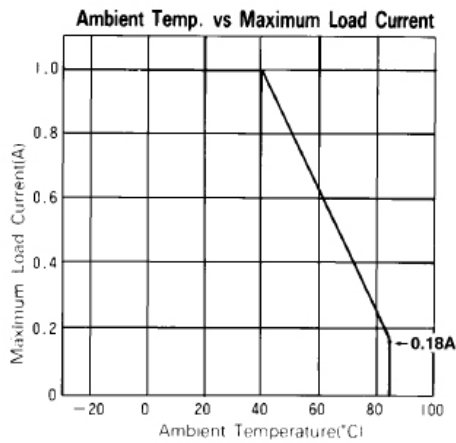
■ SPECIFICATION

Item			AC	DC	Remarks
			Type 1A	Type 1A	
Input side	Nominal voltage (DC)		3V, 5V, 12V, 24V	5V, 12V, 24V	
	Operate range		± 20% of nominal voltage		
	Must operate voltage		80% of nominal voltage		
	Must release voltage		Min. 1V (min. 0.5V*)		*3 VDC type
	Input Impedance	3VDC Type		130Ω ± 10%	-
5VDC Type		330Ω ± 10%	430Ω ± 10%		
12VDC Type		1.0kΩ ± 10%	1.2KΩ ± 10%		
24VDC Type		2.2KΩ ± 10%	2.4KΩ ± 10%		
Output side	Load voltage range		24 to 265V rms	3 to 30VDC	
	Maximum load current		1.0A rms	1.0A	See reference data
	Minimum load current		10mA rms	1 mA	Reference
	1 cycle surge current		50A (60Hz)	3A (10 ms)	
	Max. off-state leakage current		0.75mA rms max. (at 100V rms 60Hz) 1.50mA rms max. (at 200V rms 60Hz)	0.1mA max. (at 30VDC)	
	Max. off-state voltage drop		1.2V rms	1.2V	At max. load current
Coil Data	Operating temperature range		-30 °C to +85 °C		
	Storage temperature range		-40 °C to +100 °C		
Timing Data	Maximum operate time		1ms		
	Maximum release time		1/2 cycle + 1ms	1 ms	
Insulation	Initial resistance		Min. 1,000MΩ (500VDC) (input-output)		
	Surge voltage		2,500V rms 1 min. (input-output)		
Other	Case color		Black	Green	
	Weight		Approximately 5.5 g		

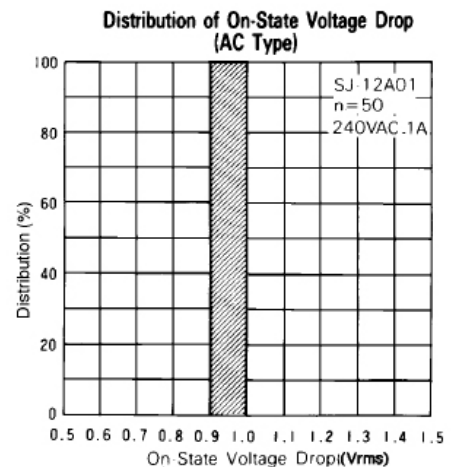
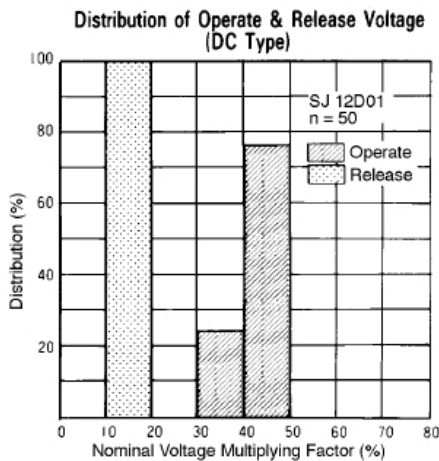
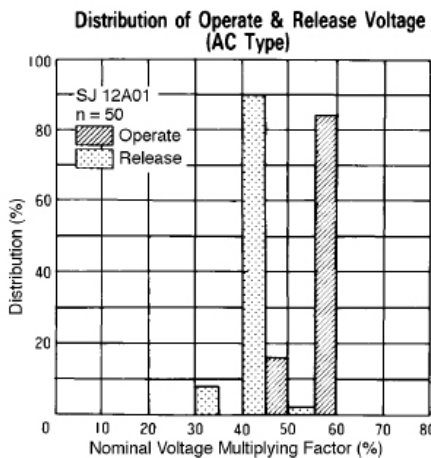
■ BLOCK DIAGRAM

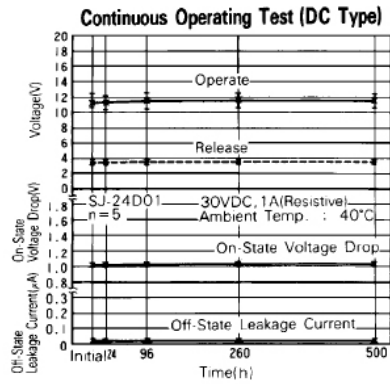
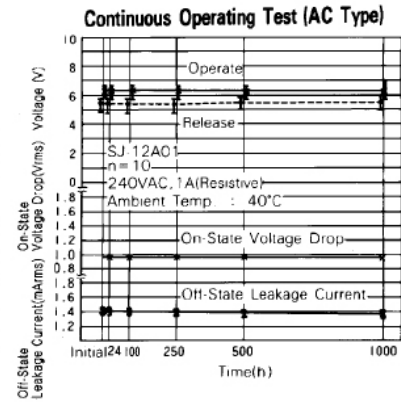
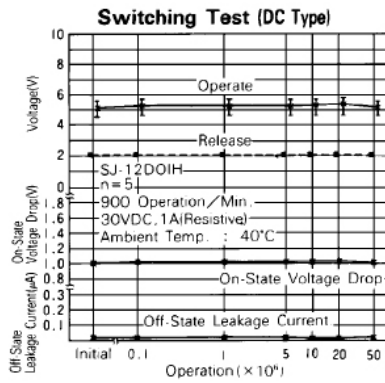
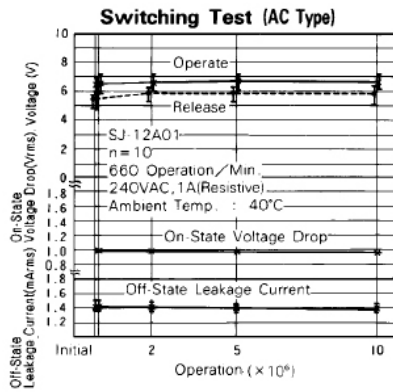
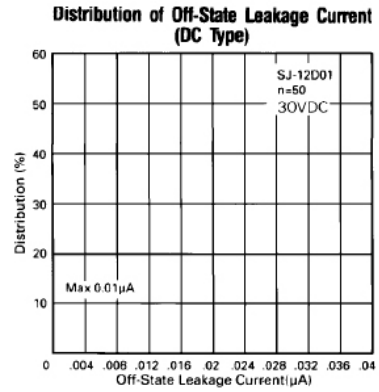
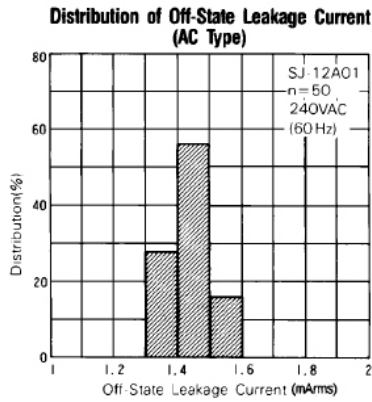
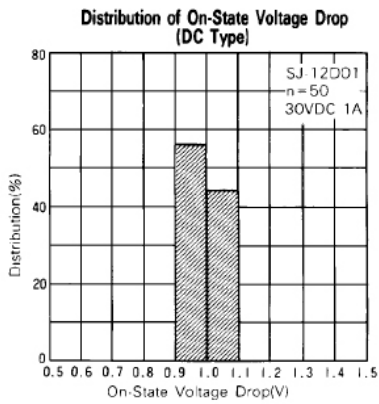
Load	Insulation	Circuit	Input/Output Waveform (resistive load)
AC type	Phototriac coupler		
DC type	Photo transistor coupler		

■ CHARACTERISTIC DATA



■ REFERENCE DATA

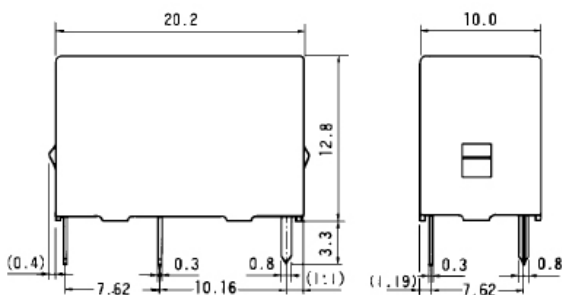




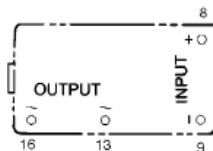
DIMENSIONS

- Dimensions

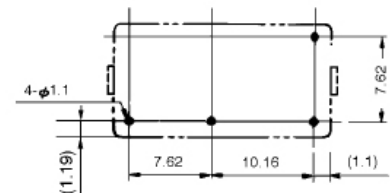
SJ- () A type (socket mounting)



- Schematic (bottom view)



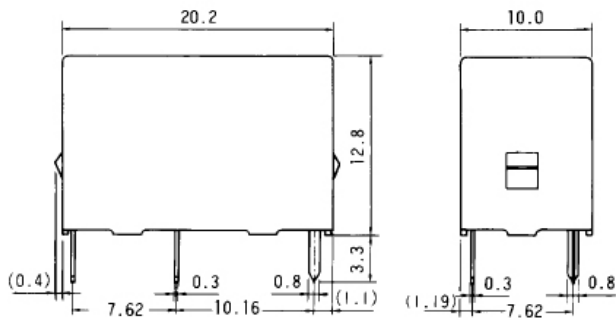
- PC board mounting hole layout (bottom view)



Unit: mm

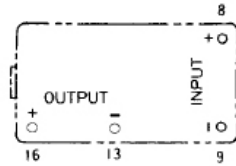
• Dimensions

SJ- () D type (socket mounting)



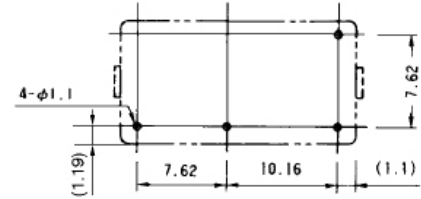
• Schematic

(bottom view)

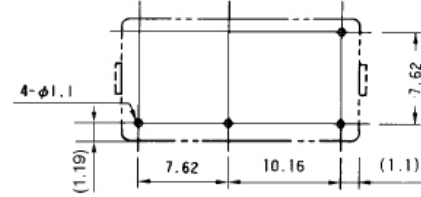
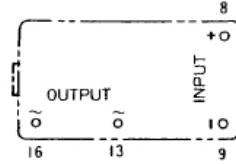
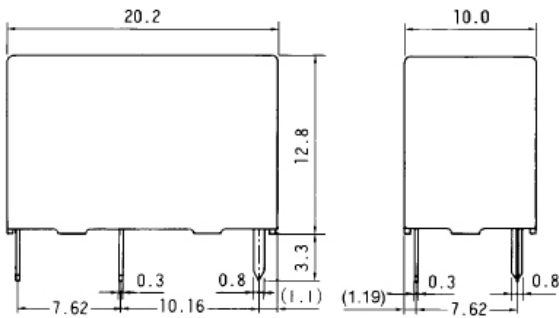


• PC board mounting hole layout

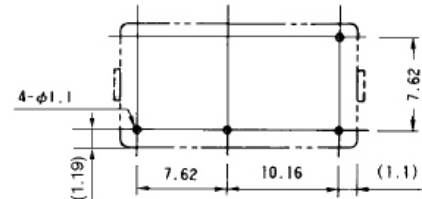
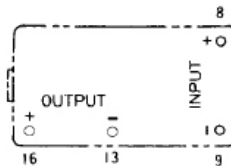
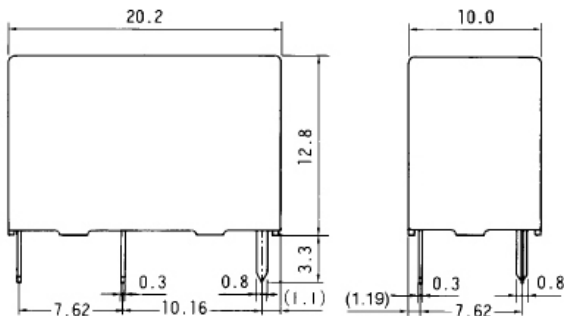
(bottom view)



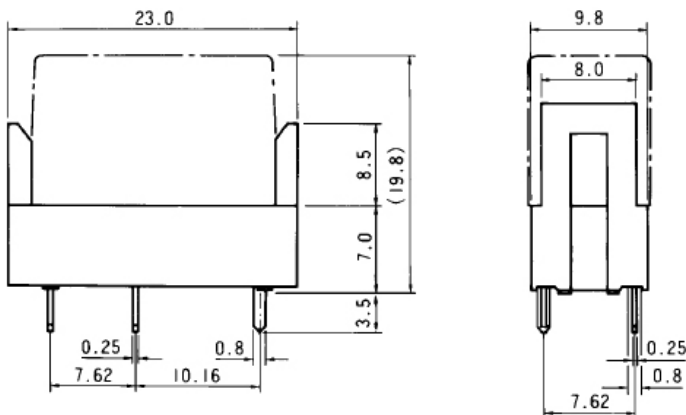
SJ- () AN type



SJ- () DN type



■ SOCKET DIMENSIONS



Unit: mm

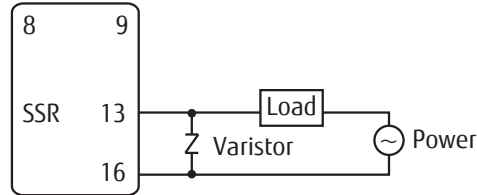
■ NOTES

1. Polarity of terminals are pre-determined.
Please design your circuit accordingly.
2. Socket ordering code: JK-4N
3. Standard IC socket is not recommended.
Please use socket "JK-4N"
4. Dimensions of the terminals do not include thickness of pre-solder.

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.
- Please connect a varistor as below to switch inductive load with SJ AC type without varistor relays.

Recommended varistor
 Varistor voltage : 470V to 510V
 Maximum energy : Minimum 4J
 Maximum allowable voltage : 300VACrms



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 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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