

SOLID STATE RELAY

MAXIMUM LOAD CURRENT 1 A

SJ SERIES

RoHS compliant



■ FEATURES

- UL, CSA recognized
- 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 since date code: 6703 (July 3rd, 2006)
Please see page 6 for more information



■ ORDERING INFORMATION

[Example] $\frac{SJ}{(a)} - \frac{12}{(b)} \frac{D}{(c)} \frac{01}{(d)} \frac{HZ}{(e)} \frac{R}{(f)} \frac{N}{(g)}$

(a)	Series Name	SJ : SJ Series
(b)	Nominal Voltage (Input side)	3: 3 VDC (only AC type) 5: 5 VDC 12: 12 VDC 24: 24 VDC
(c)	Load Voltage	A: AC type D: DC type
(d)	Load Current	01: 1 A
(e)	Kinds of Inverse Connection Protecting Element (only DC type)	Nil : Diode HZ : Zener diode type
(g)	Terminal Classification	Nil: Socket mounting N : PC Board mounting type
(f)	Output Polarity (DC Type)	Nil: Standard Polarity R: Reverse Polarity

■ SPECIFICATIONS

Item		AC	DC	Remarks
		TYPE 1A	TYPE 1A	
INPUT side	Nominal Voltage (DC)	3 V, 5 V, 12 V, 24 V	5 V, 12 V, 24 V	
	Operate Range	±20% of nominal voltage		
	Must Operate Voltage	80% of nominal voltage		
	Must Release Voltage	Minimum 1 V (minimum 0.5 V*)		*3 VDC type
	Input Impedance	3 VDC Type	120Ω ±10%	—
		5 VDC Type	360Ω ±10%	430Ω ±10%
		12 VDC Type	1.0 kΩ ±10%	1.2 kΩ ±10%
		24 VDC Type	2.0 kΩ ±10%	2.4 kΩ ±10%
OUTPUT side	Load Voltage Range	24 to 265 Vrms	3 to 30 VDC	see CHARACTERISTIC DATA
	Maximum Load Current	1.0 Arms	1.0 A	
	Minimum Load Current	10 mArms	1 mA	
	1 Cycle Surge Current	50 A (60 Hz)	3 A (10 ms)	
	Max. Off-state Leakage Current	0.75 mArms (at 100 Vrms 60Hz) 1.50 mArms (at 200 Vrms 60Hz)	0.1 mA (at 30 VDC)	
	Max. Off-state Voltage Drop	1.2 Vrms	1.2 V	at max. load current
Max. Operate Time		1 ms		
Max. Release Time		1/2 cycle + 1 ms	1 ms	
Operating Temperature Range		−30°C to + 85°C		
Storage Temperature Range		−40°C to + 100°C		
Case Color		Black	Green	
Weight		Approximately 5.5 g		

■ INSULATION

Item	AC	DC	Note
Resistance (initial)	Minimum 1,000 MΩ (500VDC)		Input - Output
Surge Voltage	2,500V rms 1 min.		

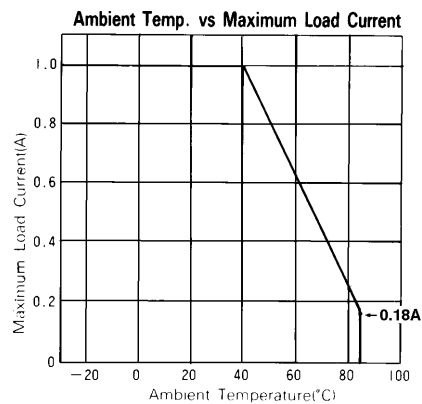
■ SAFETY STANDARD AND FILE NUMBERS

Type	Compliance	Contact rating
UL	UL 478, UL 508 E 45026	Flammability: UL 94-V0 (plastics) [SJ-C () A01] 1A, 265VAC (resistive) [SJ-() D01]
CSA	C22.2 No. 14 LR 35579	1A, 30VDC (resistive)

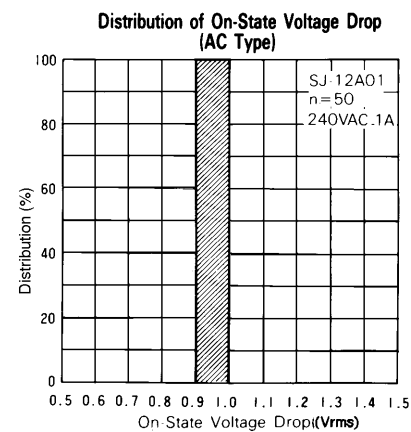
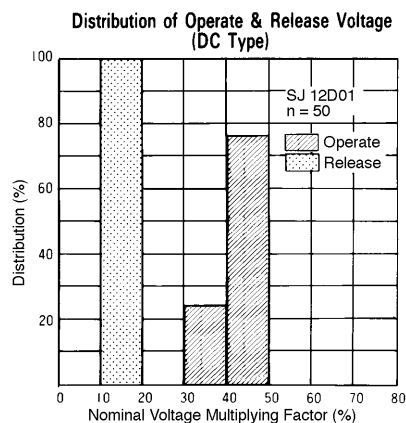
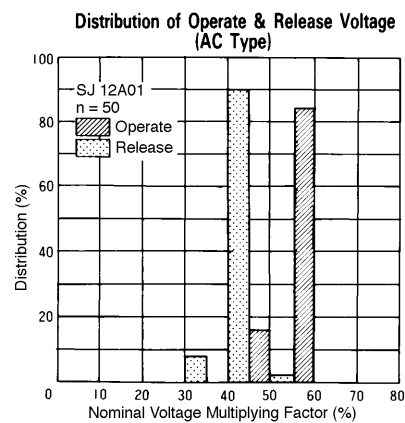
BLOCK DIAGRAM

LOAD		INSULATIONCIRCUITS	Input/Output waveform (resistive load)
AC	Photo-triac coupler		
DC	Photo-transistor coupler		

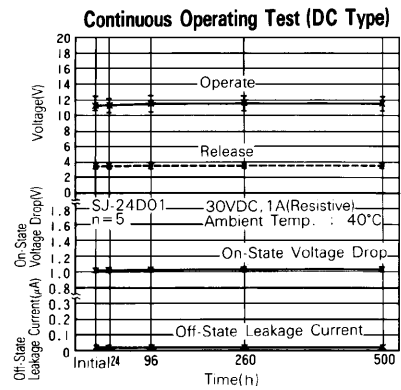
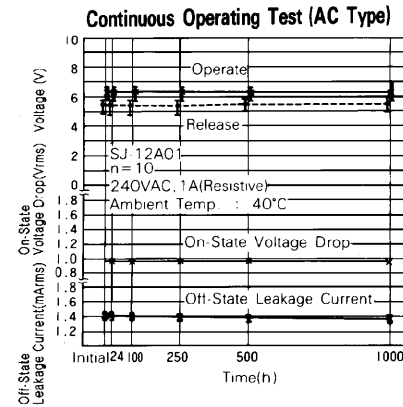
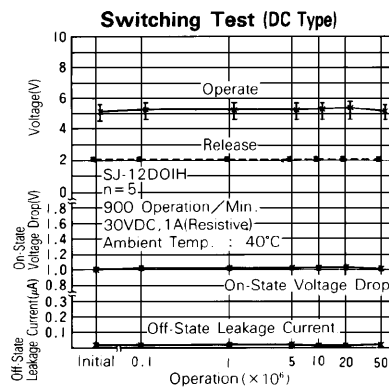
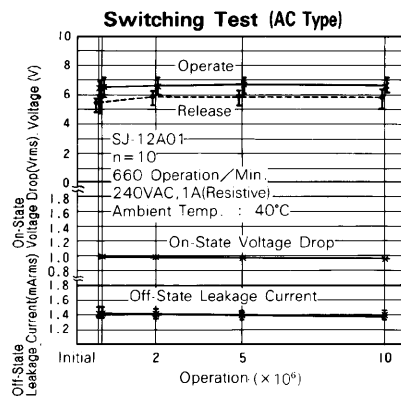
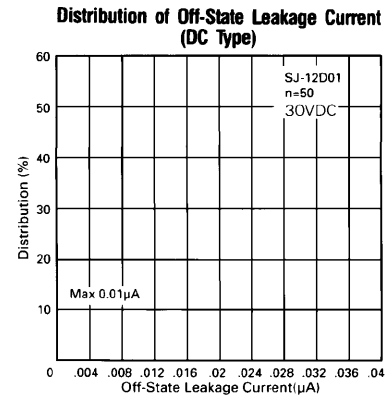
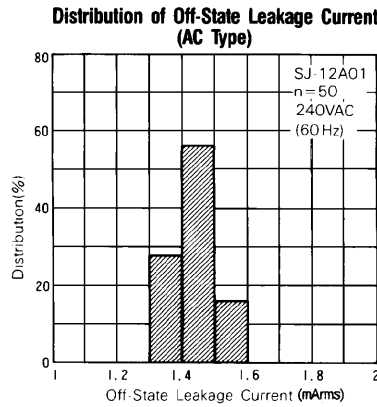
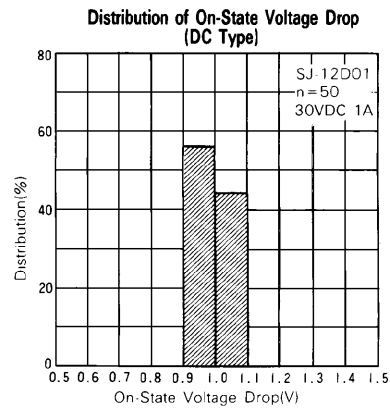
CHARACTERISTIC DATA



REFERENCE DATA



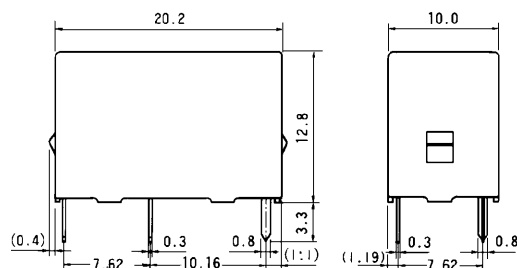
SJ SERIES



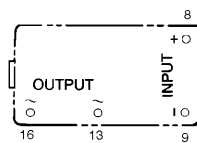
DIMENSIONS

● Dimensions

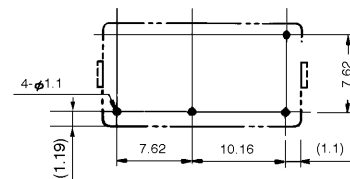
SJ-()A Type



● Schematics (BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)

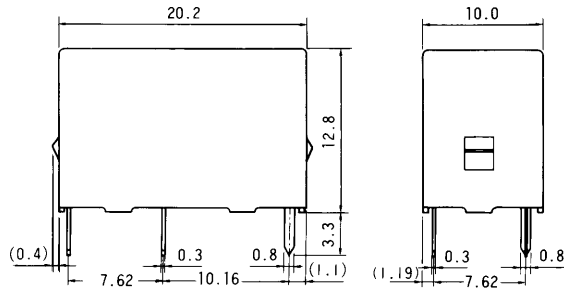


Unit: mm

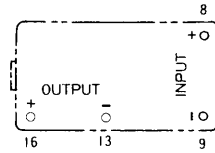
SJ SERIES

● Dimensions

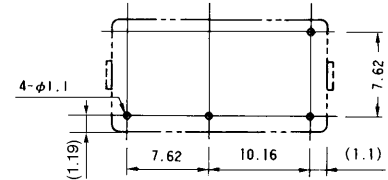
SJ-()D type



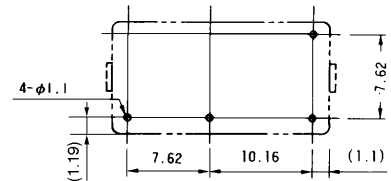
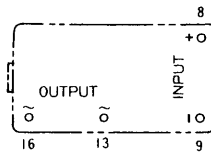
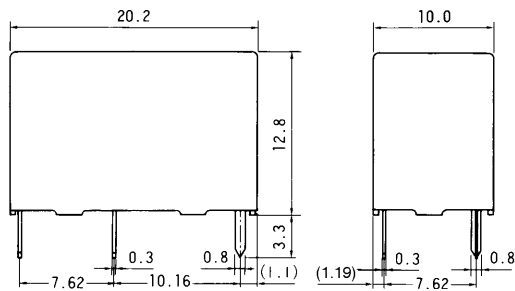
● Schematics (BOTTOM VIEW)



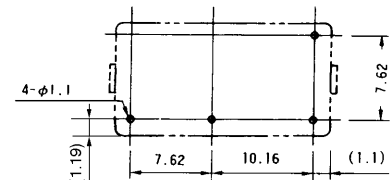
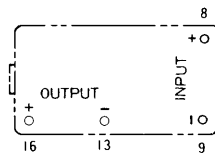
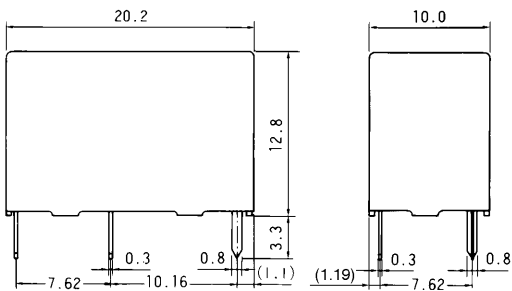
● PC board mounting hole layout (BOTTOM VIEW)



SJ-()AN type

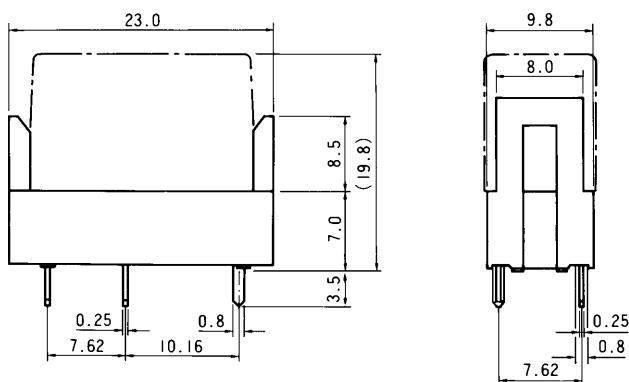


SJ-()DN type



Unit: mm

■ 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"

RoHS Compliance and Lead Free Relay Information

1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (<http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and most power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- "LF" is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu.

Reflow Solder condition

Flow Solder condition:

Pre-heating: maximum 120°C
Soldering: dip within 5 sec. at
260°C solder bath

Solder by Soldering Iron:

Soldering Iron
Temperature: maximum 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.

4. Tin Whisker

- Dipped SnAgCu solder is known as low risk tin whisker. No considerable length whisker was found by our in house test.

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