

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
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

■ SAFETY STANDARD AND FILE NUMBERS

UL508 (File No. E45026)

C22.2 No. 0, No.14 (File No. LR35579)

Please request when the approval markings are required on the cover

Type	INPUT Nominal Voltage	OUTPUT Load Voltage
SJ-() A01	5 VDC to 24 VDC	1 A 265 VAC resistive
SJ-() D01	5 VDC to 24 VDC	1 A 30 VDC resistive

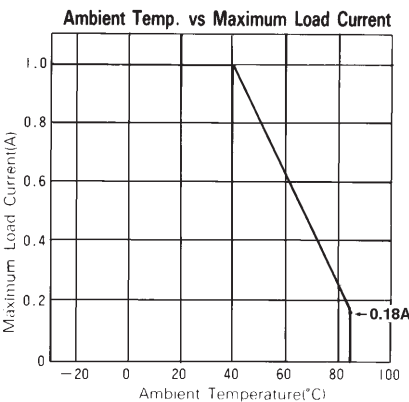
■ SPECIFICATIONS

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 60 Hz) 1.50 mArms (at 200 Vrms 60 Hz)	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	
Insulation Resistance		Minimum 1,000 MΩ (at 500 VDC)		for input-output
Dielectric Strength		2,500 Vrms for 1 minute		for input-output
Operating Temperature Range		-30°C to + 85°C		
Storage Temperature Range		-40°C to + 100°C		
Case Color		Black	Green	

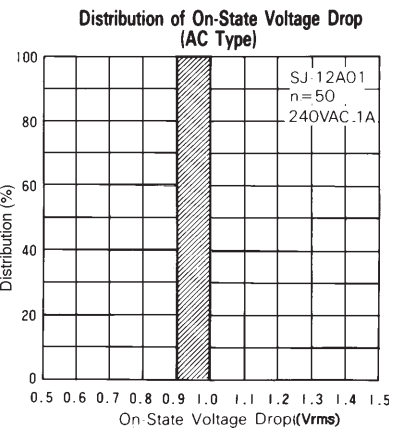
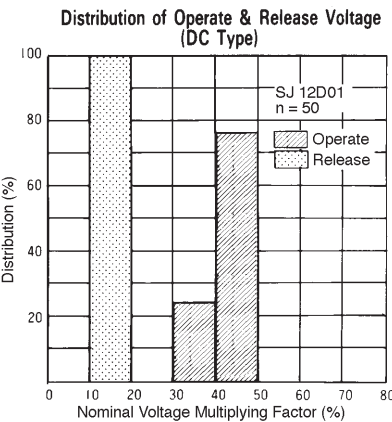
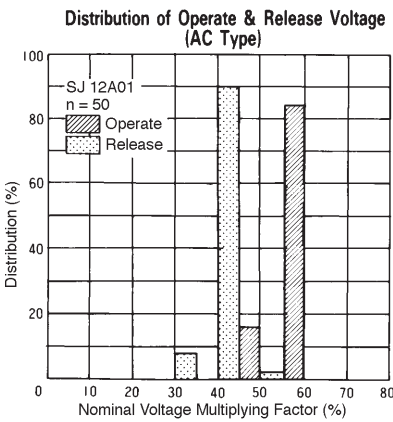
BLOCK DIAGRAM

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

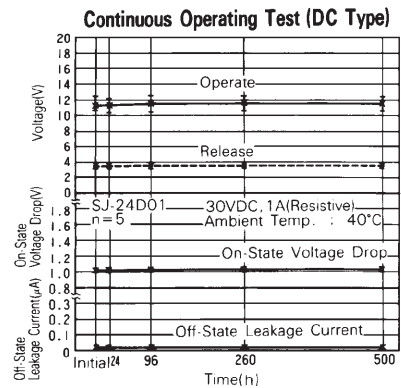
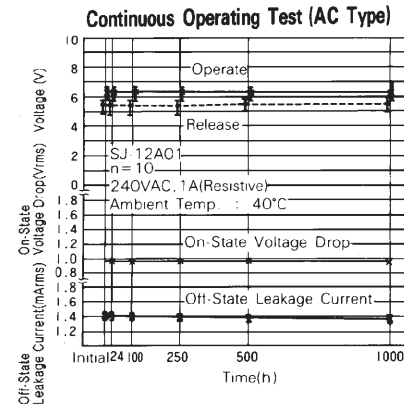
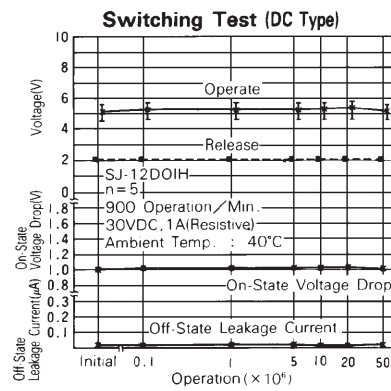
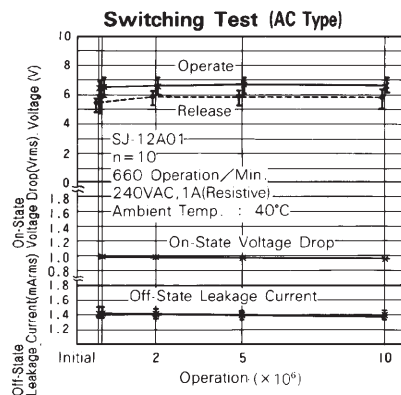
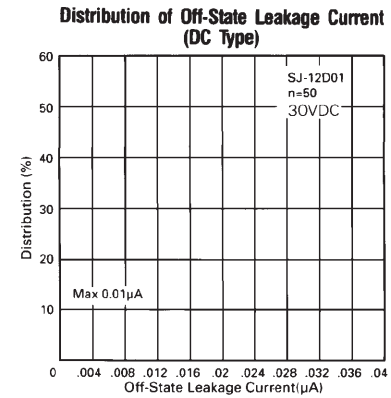
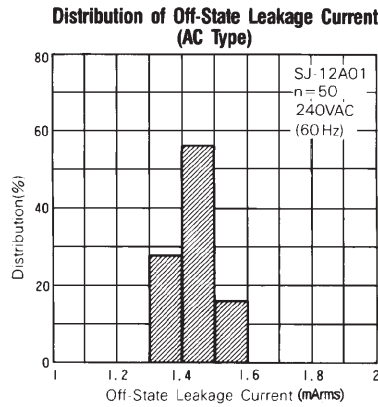
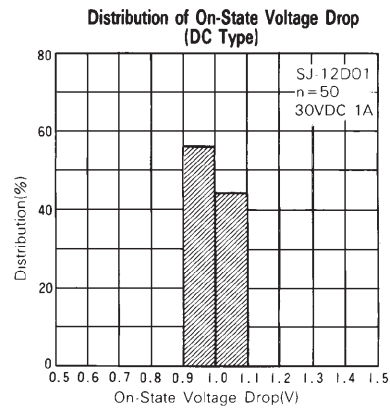
CHARACTERISTIC DATA



REFERENCE DATA



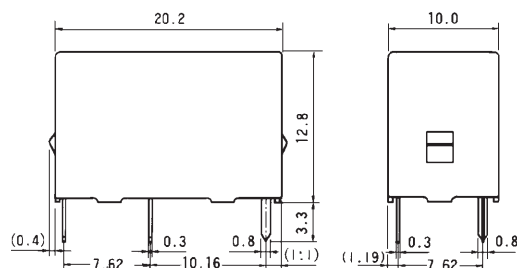
SJ SERIES



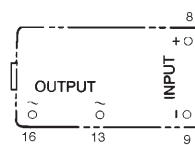
DIMENSIONS

● Dimensions

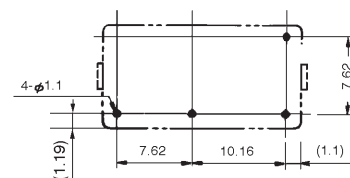
SJ-()A Type



● Schematics (BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)

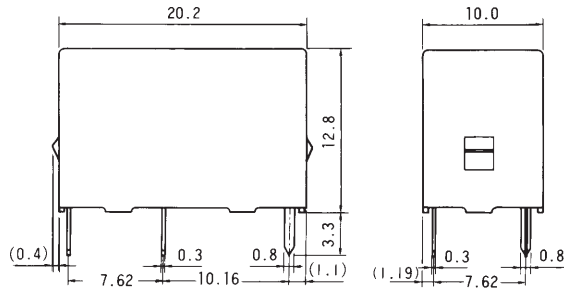


Unit: mm

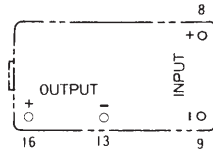
SJ SERIES

● Dimensions

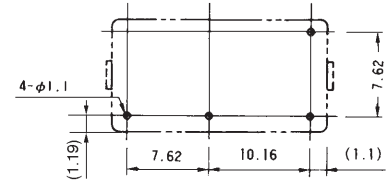
SJ-()D type



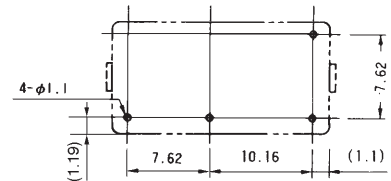
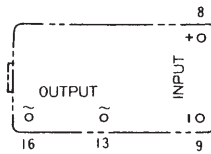
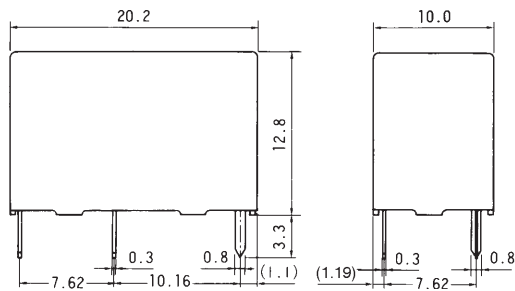
● Schematics (BOTTOM VIEW)



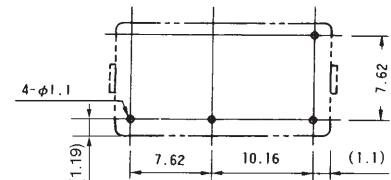
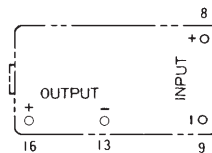
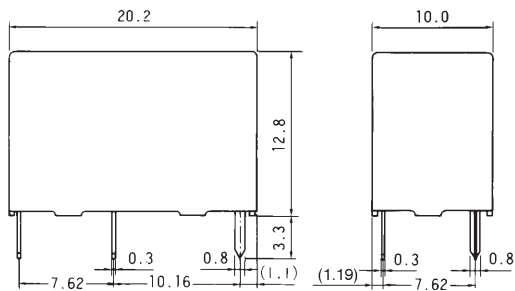
● PC board mounting hole layout (BOTTOM VIEW)



SJ-()AN type

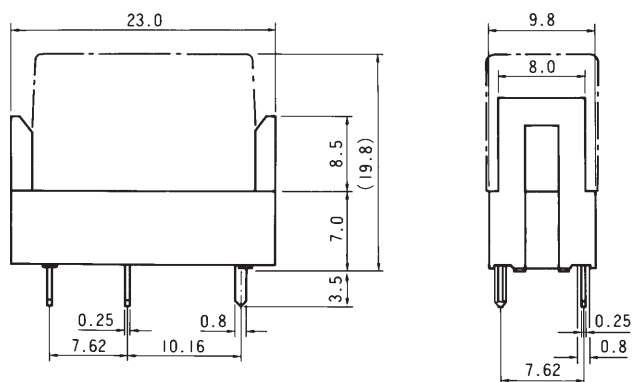


SJ-()DN type



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 lead assembly process will not cause any problems (compatible).
- "LF" is marked on each outer and inner carton. (No marking on individual relays).
- To avoid lead relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship lead relays as long as the lead 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.

Fujitsu Components International Headquarter Offices

Japan

Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141 8630, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@fcl.fujitsu.com
Web: www.fcl.fujitsu.com

North and South America

Fujitsu Components America, Inc.
250 E. Caribbean Drive
Sunnyvale, CA 94089 U.S.A.
Tel: (1-408) 745-4900
Fax: (1-408) 745-4970
Email: components@us.fujitsu.com
Web: <http://www.fujitsu.com/us/services/edevices/components/>

Europe

Fujitsu Components Europe B.V.
Diamantlaan 25
2132 WV Hoofddorp
Netherlands
Tel: (31-23) 5560910
Fax: (31-23) 5560950
Email: info@fceu.fujitsu.com
Web: emea.fujitsu.com/components/

Asia Pacific

Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#01-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcsl@fcsl.fujitsu.com
Web: <http://www.fujitsu.com/sg/services/micro/components/>

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Rev. August 1/2006