SOLID STATE RELAY

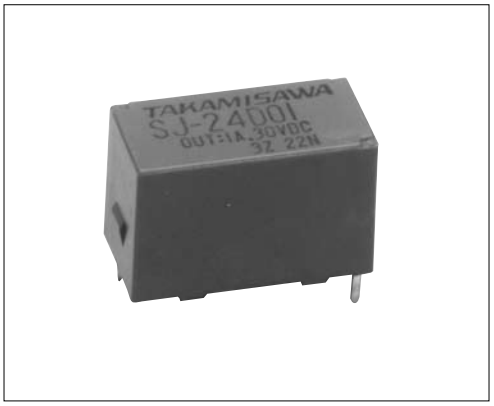
MAXIMUM LOAD CURRENT 1 A

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 stength: 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] SJ – 12 D 01 HZ R N
(a) (b) (c) (d) (e) (f) (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		Minimum1 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		

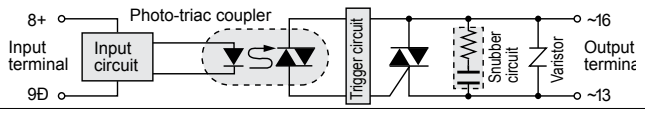
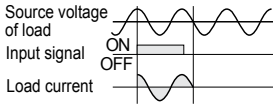
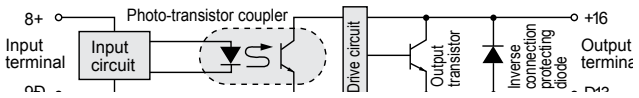
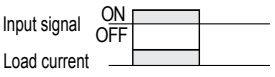
■ INSULATION

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

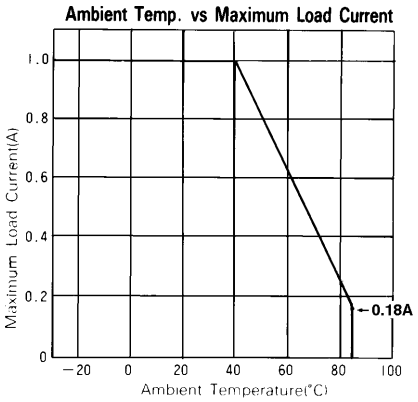
■ SAFETY STANDARD AND FILE NUMBERS

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

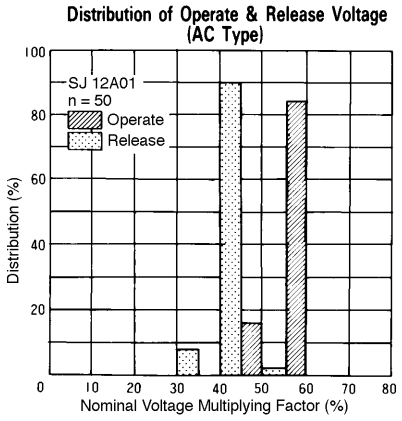
■ BLOCK DIAGRAM

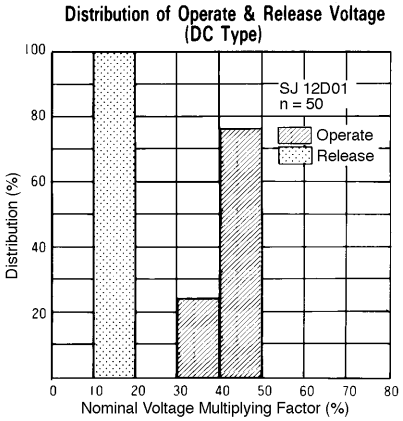
LOAD		INSULATIONCIRCUITS	Input/Output waveform (resistive load)
AC	Photo-triac coupler		
DC	Photo-transistor coupler		

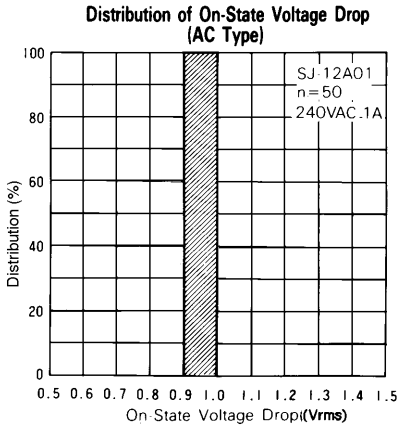
■ CHARACTERISTIC DATA

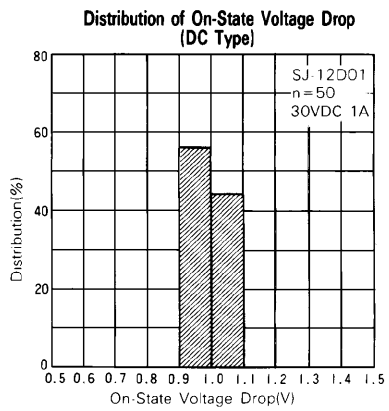


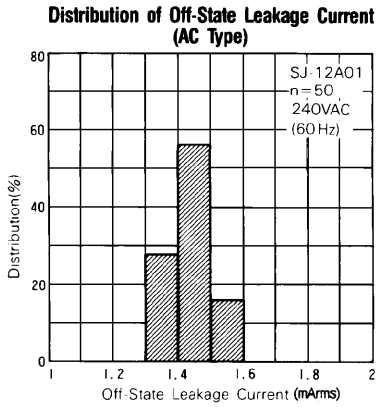
■ REFERENCE DATA

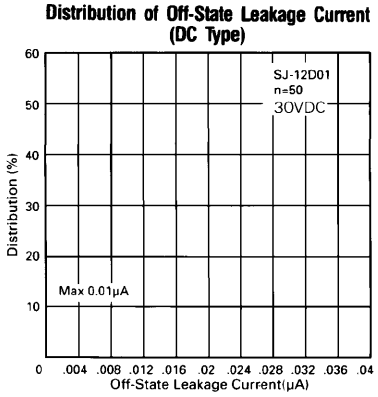


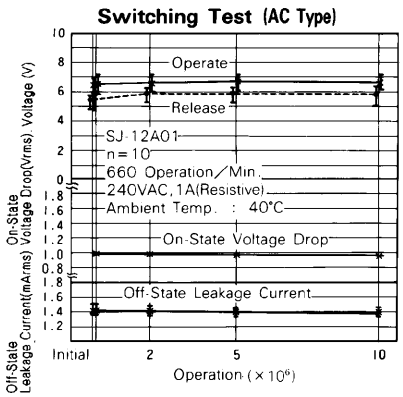


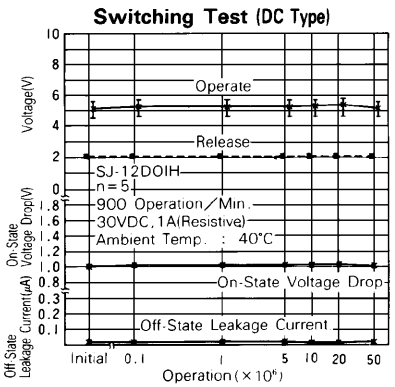


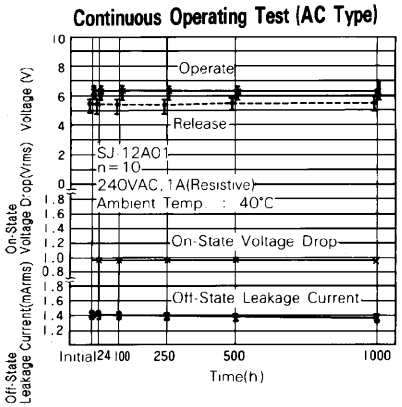


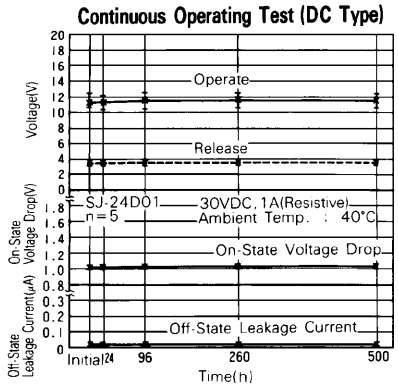








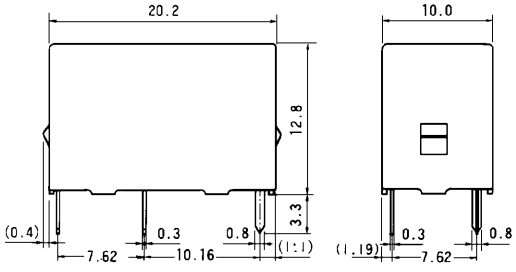




■ DIMENSIONS

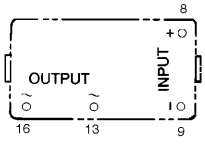
● Dimensions

SJ-( )A Type



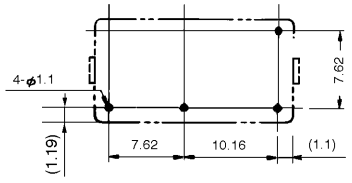
● Schematics

(BOTTOM VIEW)



● PC board mounting hole layout

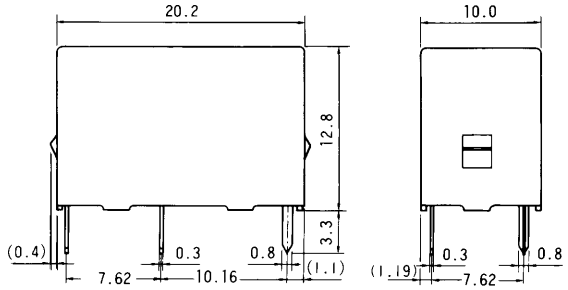
(BOTTOM VIEW)



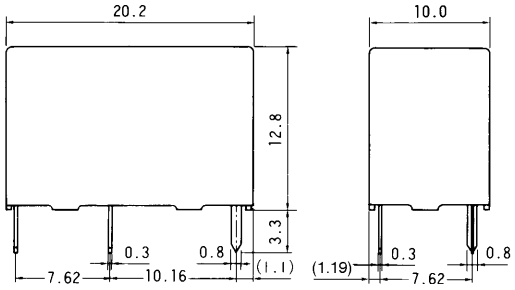
Unit: mm

● Dimensions

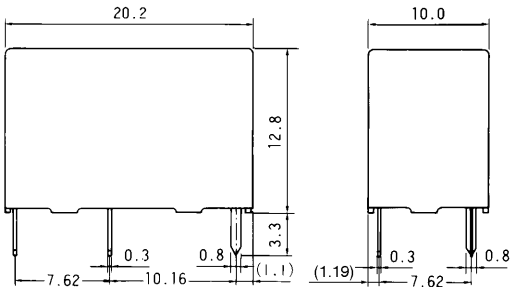
SJ-( )D type



SJ-( )AN type

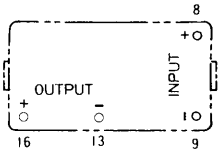


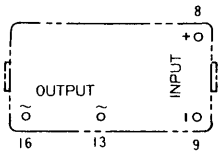
SJ-( )DN type

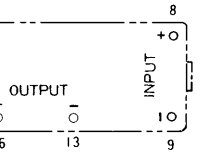


● Schematics

(BOTTOM VIEW)

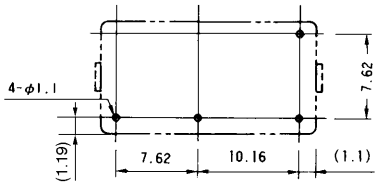


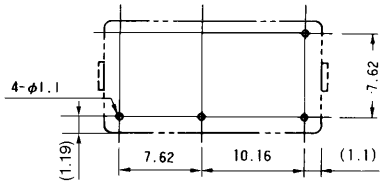


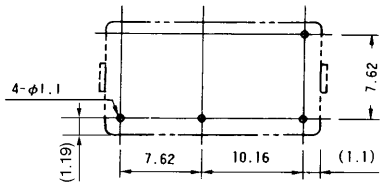


● PC board mounting hole layout

(BOTTOM VIEW)

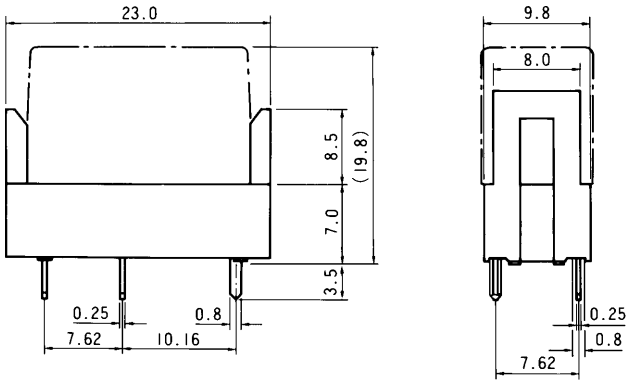






Unit: mm

■ 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 soler 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 realys.

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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