FUJITSU THE POSSIBILITIES ARE INFINITE

SOLID STATE RELAY

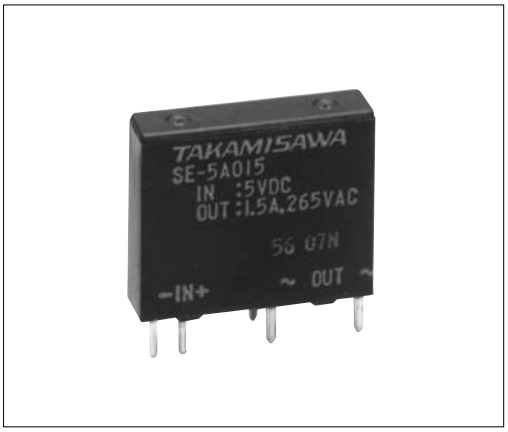
MAXIMUM LOAD CURRENT 1.5 A / 2A

SE SERIES

RoHS compliant

■ FEATURES

- Conforms to UL, CSA standards
- Ultra slim and light weight, SIL terminals type
  —Size: 5.0 (W) × 20.0 (L) × 17.0 (H)mm
  —Weight: approximately 4.0 g
- High reliability, long life and maintenance free
- High isolation (between input and output)
  —Dielectric strength: 2,500 Vrms
- Internal zero cross circuit type available
- RoHS compliant since date code: 6522 (May 22nd, 2006)
  Please see page 5 for more information



■ ORDERING INFORMATION

[Example] SE – 12 A 02 V F
(a) (b) (c) (d) (e) (f)

(a)	Series Name	SE : SE Series
(b)	Nominal Voltage (Input side)	3: 3 VDC 5: 5 VDC 12: 12 VDC 24: 24 VDC
(c)	Load Voltage	A : AC type
(d)	Load Current	015 : 1.5 A 02 : 2.0 A
(e)	Output Protection	Nil: No varistor V : Varistor type (2.0A type only)
(f)	Zero Cross Circuit	F: No zero cross type C: Zero cross type

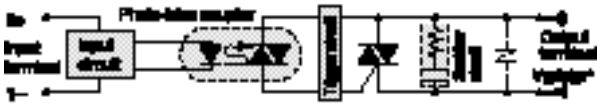
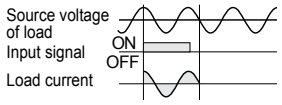
■ SPECIFICATIONS

Item			AC 1.5 A		AC 2.0 A		Remarks
			no zero cross	zero cross	no zero cross	zero cross	
INPUT side	Nominal Voltage (DC)		3 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 VDC				
	Input Impedance	3 VDC Type	130Ω	180Ω	130Ω	180Ω	±10%
		5 VDC Type	330Ω	470Ω	330Ω	470Ω	±10%
		12 VDC Type	1.0 kΩ	1.5 kΩ	1.0 kΩ	1.5 kΩ	±10%
		24 VDC Type	2.2 kΩ	3.0 kΩ	2.2 kΩ	3.0 kΩ	±10%
OUTPUT side	Load Voltage Range		AC 24 to 265V rns				
	Maximum Load Current		1.5 Arms		2.0 Arms		see CHARACTERISTIC DATA
	Minimum Load Current		10 mArms				
	1 Cycle Surge Current		50 A (60 Hz 1 cycle)				
	Max. Off-State Leakage Current		0.5 mA rms		1.0 mA rms		(at 100 V rms 60 Hz)
			1.0 mA rms		2.0 mA rms		(at 200 V rms 60 Hz)
	Max. On-State Voltage Drop		1.2 V rms		1.3 V rms		at maximum load current
Maximum Operate Time			1 ms	1/2 cycle + max.1 ms	1 ms	1/2 cycle + max.1 ms	
Maximum Release Time			1/2 cycle +1ms max.				
Operating Temperature Range			–30°C to + 85°C				
Storage Temperature Range			–40°C to +100°C				
Case Color			Black				
Weight			Approximately 3.5 g		5.1 g		

■ INSULATION

Item	AC 1.5A type	AC 2.0A type	Note
Resistance (initial)	Minimum 1,000 MΩ (500VDC)		Input - Output
Surge Voltage	2,500V rms 1min.		

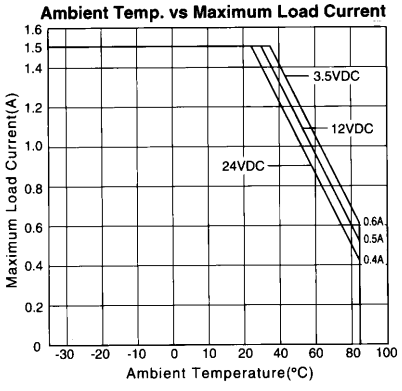
■ BLOCK DIAGRAM

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

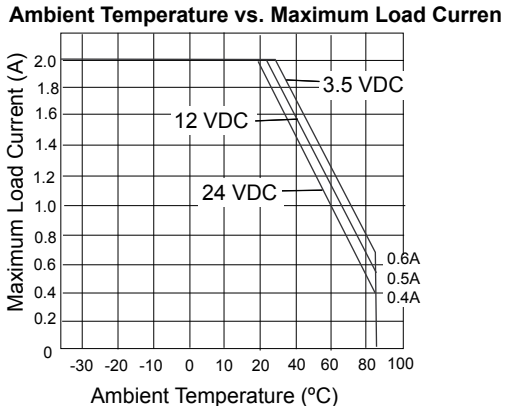
*: only 2A type had varistor

■ CHARACTERISTIC DATA

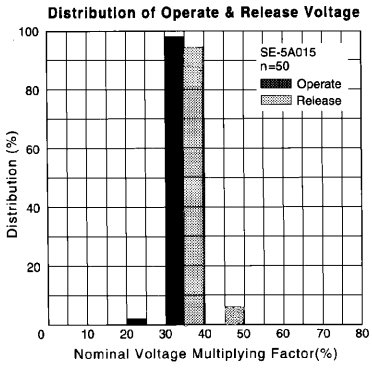
SE-( )A015 type (1.5 A type)

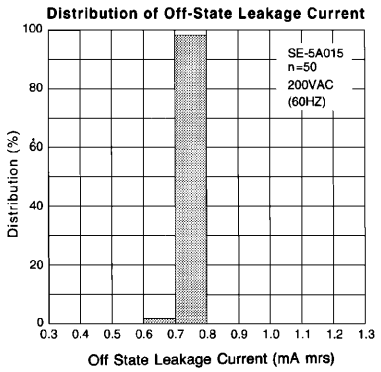


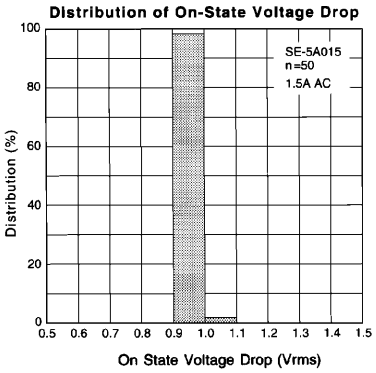
SE-( )A02 type (2.0A type)



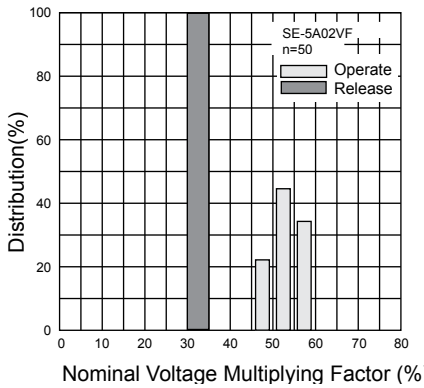
■ REFERENCE DATA



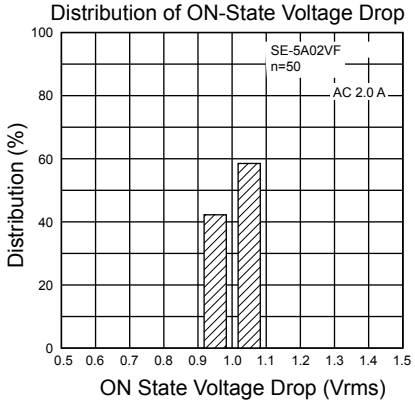




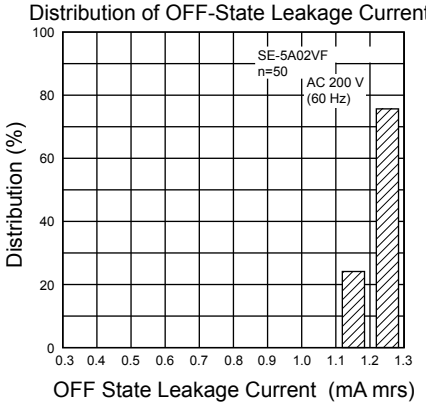
Distribution of Operate and Release Voltage



Distribution of ON-State Voltage Drop



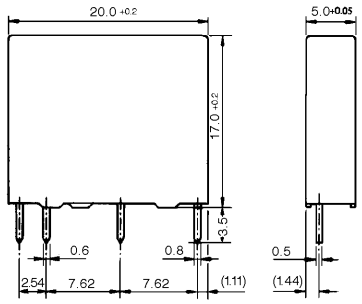
Distribution of OFF-State Leakage Current



■ DIMENSIONS

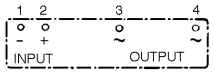
● Dimensions

SE- ( ) A015 type



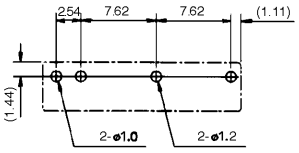
● Schematics

(BOTTOM VIEW)



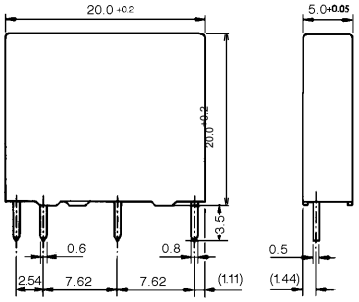
● PC board mounting hole layout

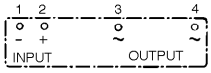
(BOTTOM VIEW)

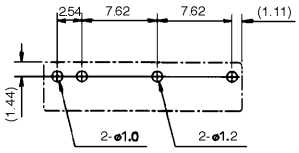


Unit: mm

SE- ( ) A02 type

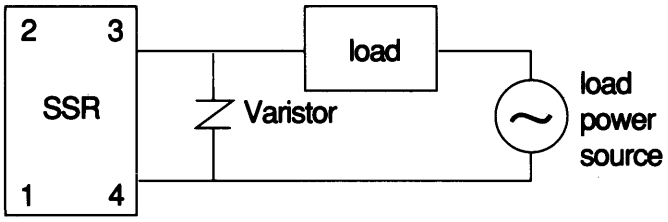






■ NOTES

When large noise and surge are impressed on the load side, there is the possibility of the occurence of malfunction or damage.In such a case, a varistor should be inserted in the circuit.



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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