

SOLID STATE RELAY

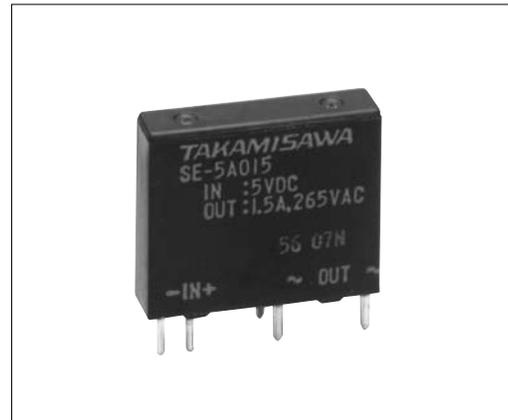
MAXIMUM LOAD CURRENT 1.5 A / 2A SE SERIES

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] $\frac{SE}{(a)} - \frac{12}{(b)} \frac{A}{(c)} \frac{02}{(d)} \frac{V}{(e)} \frac{F}{(f)}$

| | | |
|-----|------------------------------|--|
| (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 |

SE SERIES

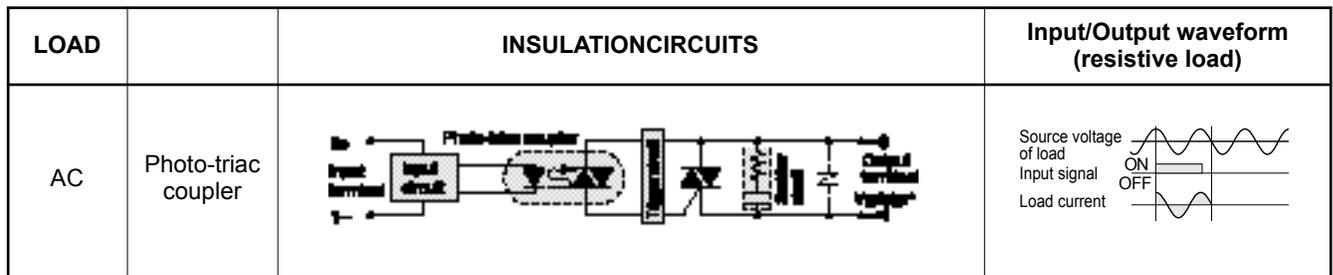
■ SPECIFICATIONS

| 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 |
| 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 rms | | | | |
| | 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. | | |

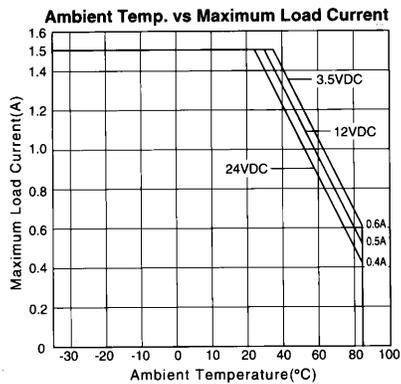
■ BLOCK DIAGRAM



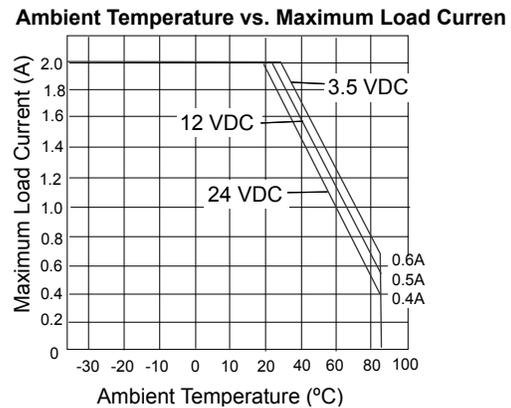
*: only 2A type had varistor

■ CHARACTERISTIC DATA

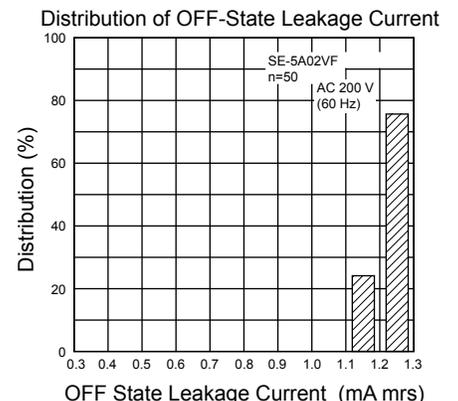
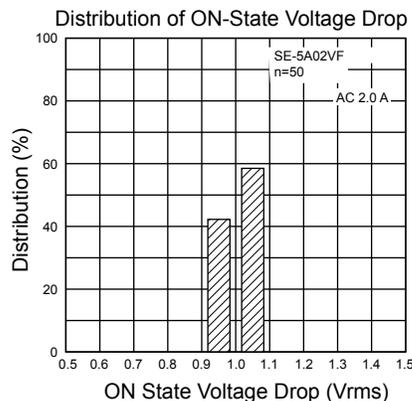
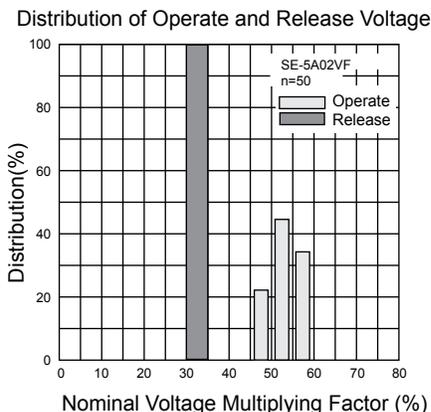
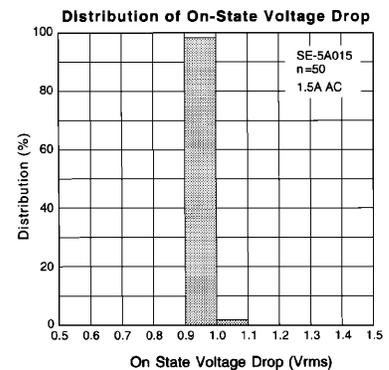
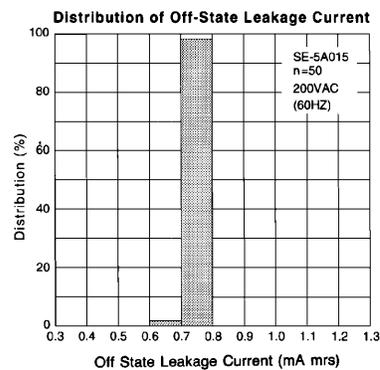
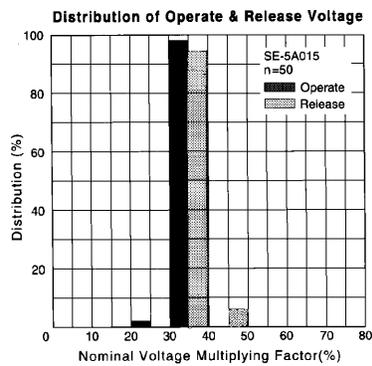
SE-()A015 type (1.5 A type)



SE-()A02 type (2.0A type)



■ REFERENCE DATA



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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