FUJITSU THE POSSIBILITIES ARE INFINITE

SOLID STATE RELAY

MAXIMUM LOAD CURRENT 3 A

SG Series

RoHS compliant

■ FEATURES

- Conforms to UL, CSA Standards
- Slim, SIL Terminal Type
  —Size: 9.0 (W) × 40.0 (L) × 20.0(H) mm
  —Weight: approximately 13g
- High reliability, long life and maintenance free
- High isolation (between input and output)
  —Dielectric stength: 2,500 Vrms
- Internal zero cross circuit type available
- Internal output surge absorber (varistor) type available.
- RoHS compliant since date code: 6703 (July 3rd, 2006)
  Please see page 5 for more information

■ ORDERING INFORMATION

	SG	–	12	A	03	C	V	L
[Example]	(a)		(b)	(c)	(d)	(e)	(f)	(g)

(a)	Series Name	SG: SG 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	03: 3 A rms
(e)	Zero Cross Circuit	Nil: No zero cross tyoe C: Zero cross type
(f)	Varistor	Nil: No varistor type V : Internal varistor type
(g)	Input Terminal Distance	Nil: 7.62 mm L: 5.08 mm

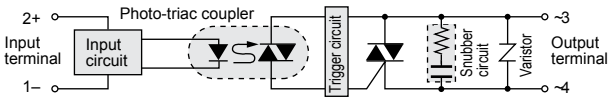
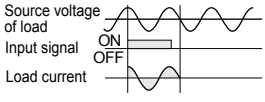
■ SPECIFICATIONS

Item			AC TYPE 3 A	Remarks
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 V	
	Input Impedance	3 VDC Type	130Ω ±10%	
		5 VDC Type	330Ω ±10%	
		12 VDC Type	1.0 kΩ ±10%	
		24 VDC Type	2.2 kΩ ±10%	
OUTPUT side	Load Voltage Range		75 to 265 Vrms	
	Maximum Load Current		3.0 Arms	CHARACTERISTIC DATA
	Minimum Load Current		10 mArms	
	1 Cycle Surge Current		132 A (60 Hz)	
	Max. Off-state Leakage Current		2.5 mArms (at 100 Vrms 60 Hz) 5.0 mArms (at 200 Vrms 60 Hz)	
	Max. Off-state Voltage Drop		1.5 Vrms	at max. load current
Max. Operate Time		at no zero cross type	1 ms	
		at zero cross type	1/2 cycle + 1 ms	
Max. Release Time			1/2 cycle + 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	
Weight			Approximately 13g	

■ INSULATION

Item	AC 3.0A type	Note
Resistance (initial)	Minimum 1,000 MΩ (500VDC)	Input-output
Surge Voltage	2,500V rms 1 min.	

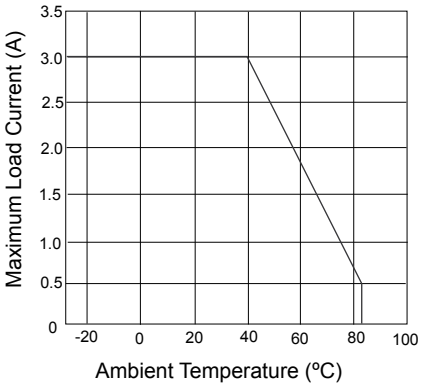
■ BLOCK DIAGRAM

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

■ CHARACTERISTIC DATA

SG-A03 (3.0A type)

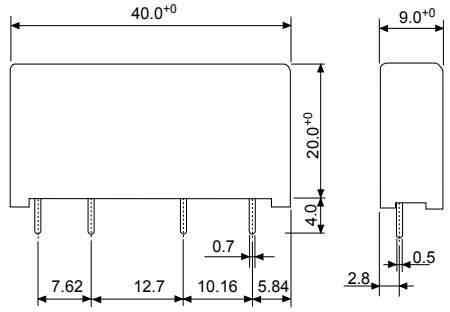
Ambient Temperature vs. Maximum Load Current



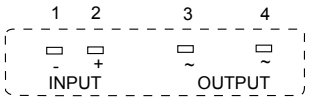
■ DIMENSIONS

● Dimensions

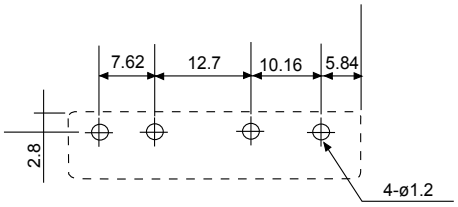
SG-( ) A03 Type



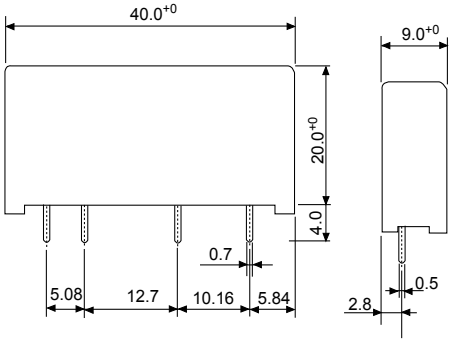
● Schematics
(BOTTOM VIEW)

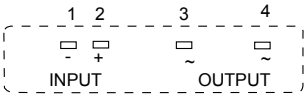


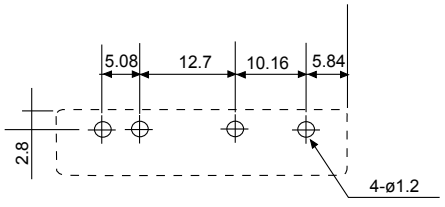
● PC board mounting hole layout
(BOTTOM VIEW)



SG-( ) A03L Type



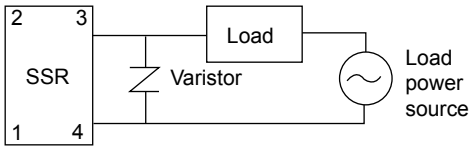




Unit: mm

■ NOTES

1. Polarity of terminals are pre-determined. Please design accordingly.
2. If using non-Varistor enclosure type please use Varistor type as in Figure 1.



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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