S102S03/S202S03

SIP Type SSR with Mounting Capability for External Heat Sink

■ Features

1. High radiation resin mold package
2. RMS ON-state current I_T : MAX. 8 Arms at $T_C \leqq 80℃$ (With heat sink)
3. Isolation voltage between input and output (V_{iso} : 4 000V_{rms})
4. Low input driving current (I_{FT}: MAX. 5mA)
5. Approved by CSA, No. LR63705
   Recognized by UL, file No. E94758

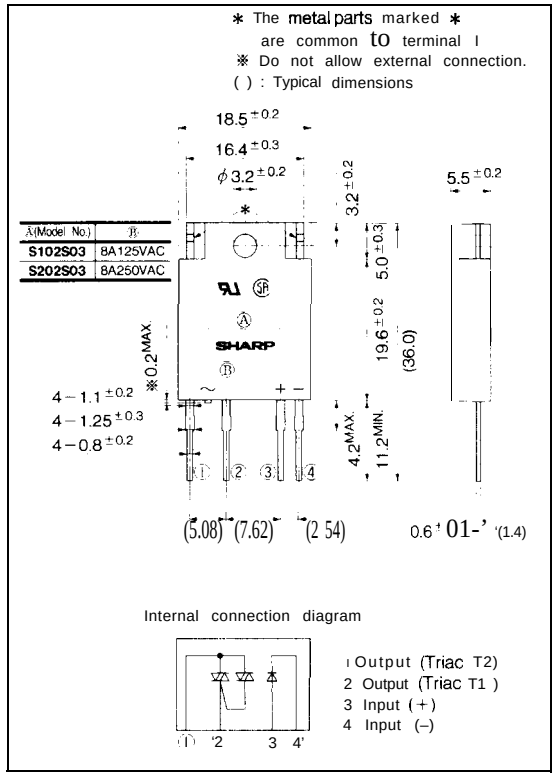
■ Applications

1. Automatic vending machines
2. Programmable controllers
3. Amusement equipment

■ Model Line-ups

For 100V lines	For 200V lines
S102S03	S202S03

■ Outline Dimensions (Unit : mm)



Model No.	Voltage
S102S03	8A125VAC
S202S03	8A250VAC

■ Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Rating S102SO3	Rating S202S03	Unit
Input	Forward current	I_F	50		mA
	Reverse voltage	V_R	6		V
output	RMS ON-state current	I_T	*4 8		A_{rms}
	*1 Peak one cycle surge current	I_{surge}	80		A
	Repetitive peak OFF-state voltage	V_{DRM}	400	600	V
	Non-repetitive peak OFF-state voltage	V_{DSM}	400	600	V
	Critical rate of rise of ON-state current	dI_T/dt	50		A/μs (Note)
	Operating frequency	f	45 to 65		Hz
*isolation voltage		V_{iso}	4 000		V_{rms}
Operating temperature		T_{opr}	–25 to +100		℃
Storage temperature		T_{stg}	–30 to +125		℃
'soldering temperature		T_{sol}	260		℃

*1 50Hz sinewave, Tj=25℃ start

*2 60Hz AC for 1 minute 40 to 60%RH, Apply voltages between input and output by the dielectric withstand voltage tester with zero-cross circuit. (Input and output shall be shorted respectively).

(Note) When the isolation voltage is necessary at using external heat sink, please use the insulation]] sheet.

*3 For 1(1 seconds

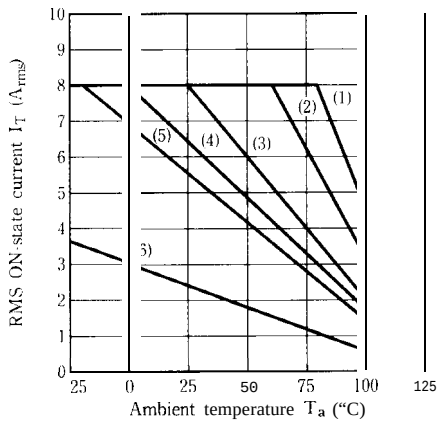
*4 $T_C \leqq 80℃$

■ Electro-optical Characteristics

(Ta = 25℃)

	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F = 20mA		1.2	1.4	V
	Reverse current	I_R	V_R = 3V		–	10	μA
Output	Repetitive peak OFF-state current	I_{DRM}	$V_D = V_{DRM}$			10^{-4}	A
	On-state voltage	V_T	Resistance load, I_F = 20mA, I_T = 2A$_{rms}$		–	1.5	V_{rms}
	Holding current	I_H			–	35	mA
	Critical rate of rise of OFF-state voltage	dV/dt	V_D = 2/3V_{DRM}	30		–	V/μs
	Critical rate of rise of commutating OFF-state voltage	$(dV/dt)_C$	Tj = 125℃, dIt/d_t = −4.0A/ms, V_D = 400V		–		V/μs
Transfer characteristics	Minimum trigger current	I_{FT}	V_D = 12V, R_L = 30Ω	–	–	5	mA
	Isolation resistance	R_{ISO}	DC = 500V, 40 to 60%RH	10^{10}		=	Ω
	Turn-on time	t_{on}	AC = 50Hz	–		1	ms
	Turn-off time	t_{off}			–	10	ms
Thermal resistance (Between junction and case)		$R_{th(j-c)}$			4.5	–	℃/W
Thermal resistance (Between junction and ambience)		$R_{th(j-a)}$		–	40	=	℃/W

Fig. 1 RMS ON-state Current vs. Ambient Temperature



(1) With infinite heat sink
(2) With heat sink (200 × 200 × 2mm Al plate)
(3) With heat sink (1 OOX10OX2.. Al plate)
(4) With heat sink (75 × 75 × 2mm Al plate)
(5) With heat sink (50 × 50 × 2mm Al plate)
(6) Without heat sink
(Note) With the Al heat sink set up vertically, tighten the device at the center of the Al heat sink with a torque of 0.4N . m and apply thermal conductive silicone grease on the heat sink mounting plate Forcible cooling shall not be carried uut.

Fig. 2 RMS ON-stats Currant vs. Case Temperature

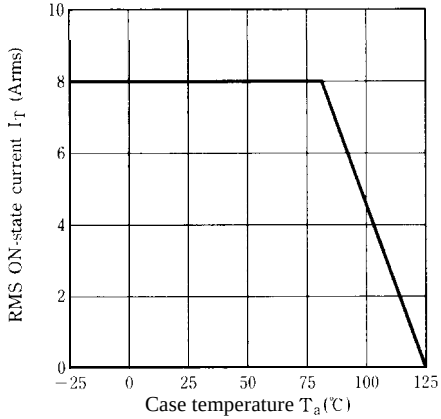


Fig. 3 Forward Current vs. Ambient Temperature

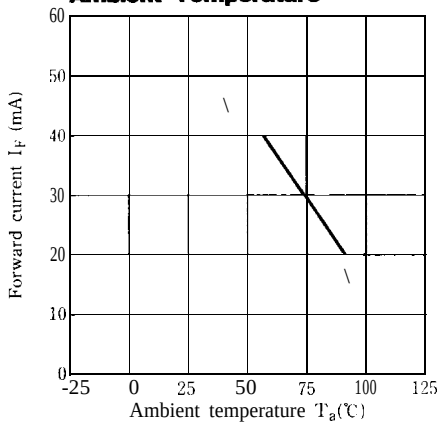


Fig. 4 Forward Current vs. Forward Voltage

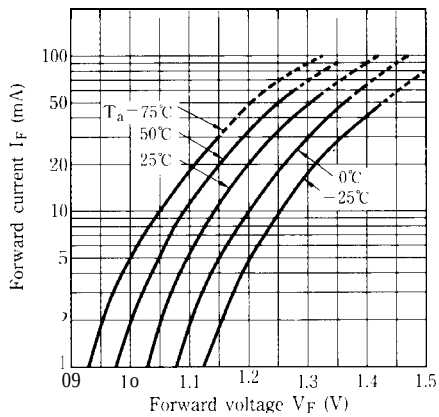


Fig. 5 Surge Current vs. Power-on Cycle

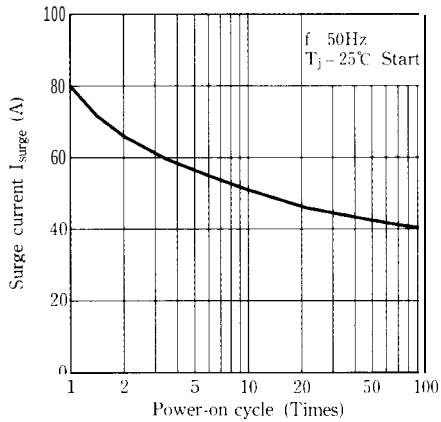


Fig. 6 **Maximum ON-state Power Dissipation vs. RMS ON-state currant**

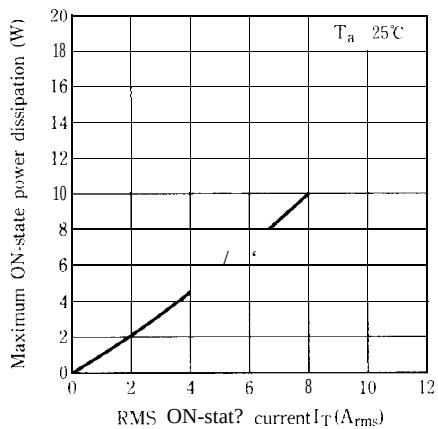


Fig. 7 Minimum Trigger Current vs. Ambient Temperature (Typical Value)

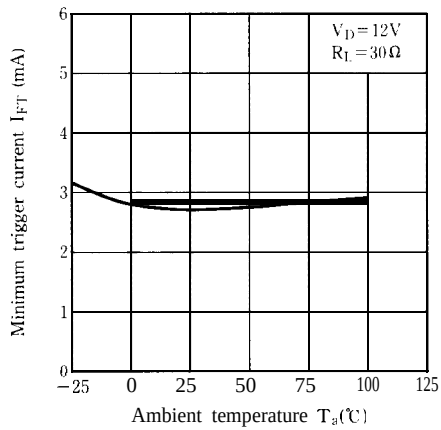


Fig. 8 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature (Typical Value)

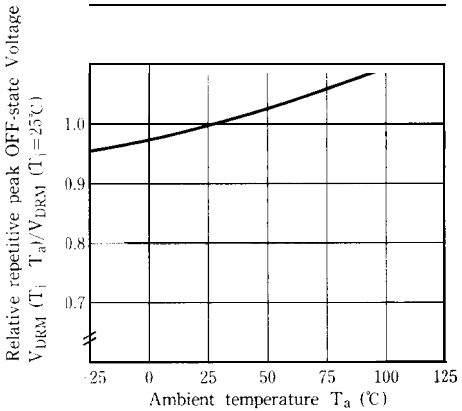


Fig.9-a Repetitive Peak OFF-state Current vs. Ambient Temperature (Typical Value) (S102S03)

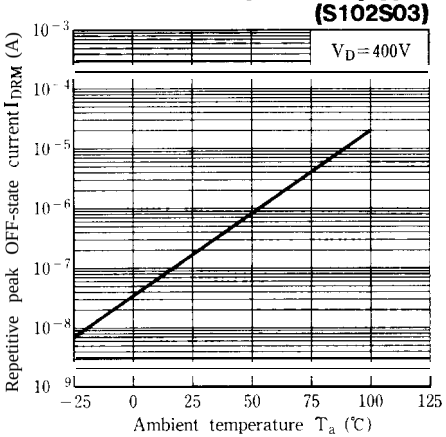
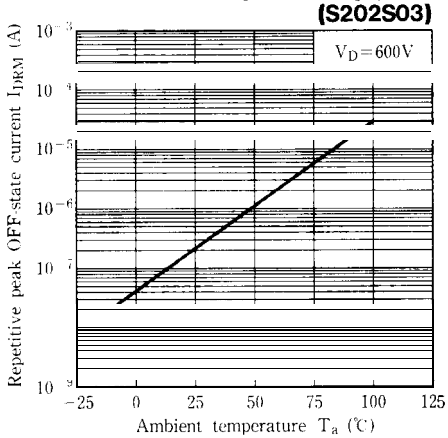


Fig.9-b Repetitive Peak OFF-state Current vs. Ambient Temperature (Typical Value) (S202S03)



● Please refer to the chapter "Precautions for Use" (Page 78 to 93).