S102S01/S102S02 S202S01 /s202s02

SIP Type **SSR** for Medium Power Control

■ Features

1. High radiation resin mold package
2. RMS ON-state current
   I_T :8 Arms at $T_C \leqq 80℃$
   (With heat sink)
3. Built-in zero-cross circuit
   (s102s02/s202s02)
4. High repetitive peak OFF-state voltage
   S102SO1/S102S02 V_{DRM} : MIN. 400V
   S202S01 /S202S02 V_{DRM} : MIN. 600V
5. Isolation voltage between input and output
   (V_{iso} : 4000Vrms)
6. Approved by CSA, No, LR63705
   Recognized by UL, file No. E94758

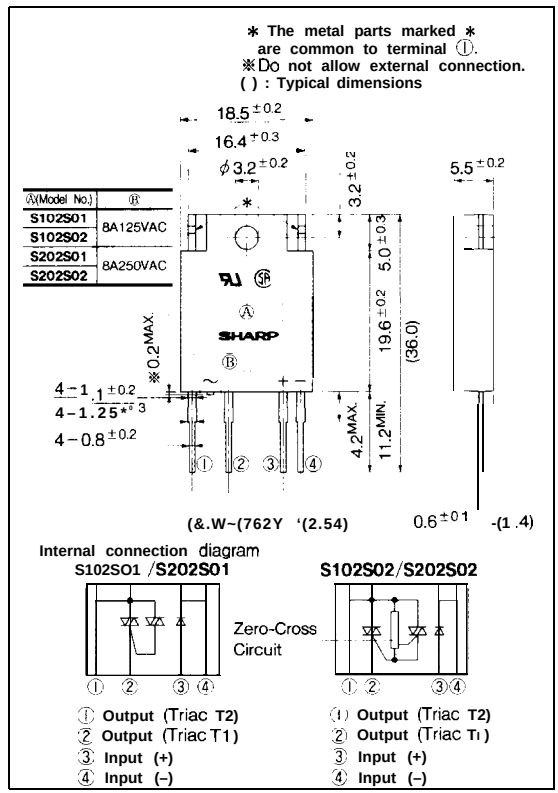
■ Applications

1. Automatic vending machines, programmable controllers
2. Amusement equipment

■ Model **Line-ups**

	For 100V lines	For 200V lines
For phase control No built-in zero-cross circuit	S102SO1	S202S01
Built in zero cross circuit	S102SO2	S202S02

■ Outline **Dimensions** (Unit : mm)



■ **Absolute** Maximum Ratings (Ta=25℃)

Parameter		Symbol	Rating S102S01 S102SO2	Rating S202S01 S202S02	Unit
Input	Forward current	I_F	50		mA
	Reverse voltage	V_R	6		v
output	*1RMS ON-state current	I_T	8		A_{rms}
	*2 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/dt	50		A/μs
	Operating frequency	f	45 to 65		Hz
*3Isolation voltage		V_{iso}	4000		v rms
Operating temperature		T_{opr}	−25 to +100		‘c
Storage temperature		T_{stg}	−30 to +125		℃
*4 Soldering temperature		T_{sol}	260		“c

*1 T’ ≦80℃

*2 50Hz sine wave, T_j=25℃ start

*360Hz AC for I minute, 40 tn 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.

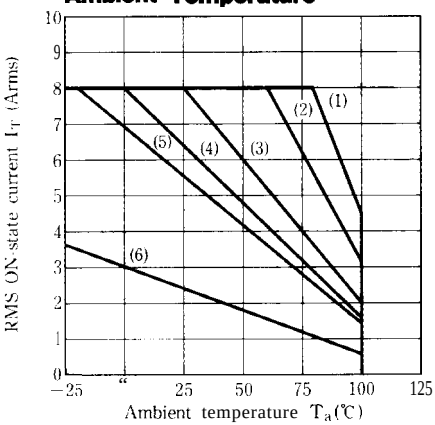
*4For 10 seconds

■ 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^{-4}	A
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 -.2'1,",s		−	1.5	V_{rms}
	Holding current		I_H				50	mA
	Critical rate of rise of OFF-state voltage		dV/dt	V_D = 2/3 . V_{DRM}	30		−	V/μs
	Critical rate of rise of commutating OFF-state voltage		$(dV/dt)_C$	T_j = 125℃, dI_T/dt = −4.0A/ms, V_D = 400V	5			V/μs
	Zero-cross voltage	S102S02 S202S02	Vox	I_F = 8mA			35	v
Transfer characteristics	Minimum trigger current	S102S01 S202S01	I_{FT}	V_D = 12V, R_L = 30Ω	−	−	8	mA
		S102S02 S202S02		V_D = 6V, R_L = 30Ω			8	mA
	Isolation resistante		R_{ISO}	DC500V, 40 to 60%RH	10^{10}			Ω
	Turn-on time	S102SC1 S202S01	t_{on}	AC 50Hz	−	−	1	ms
		S102S02 S202S02					10	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 X200 × 2mm Al plate)
(3) With heat sink (100 × 100 × 2mm 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 out.

Fig. 2 RMS ON-state Current vs. Case Temperature

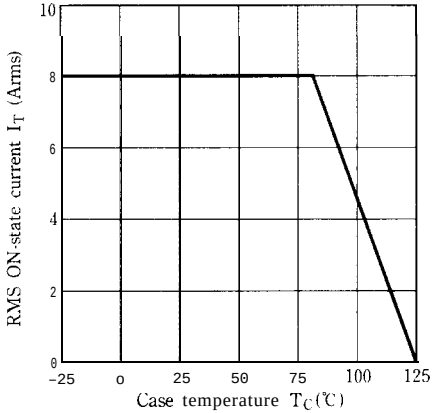


Fig. 3 Forward Current vs. Ambient Temperature

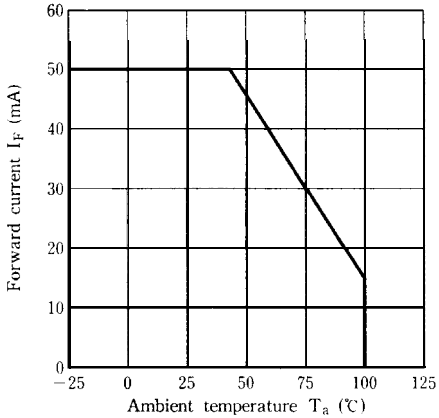


Fig. 4 Forward Currant **vs.** Forward **Voltage**

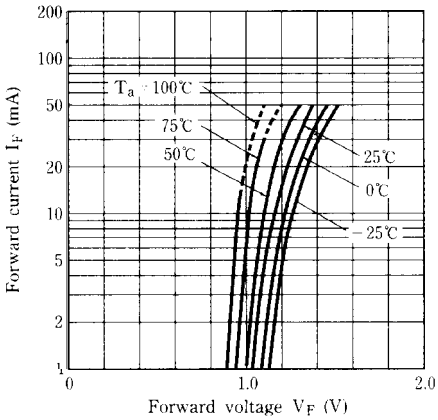


Fig. 5 Surge Current vs. Power-on Cycle

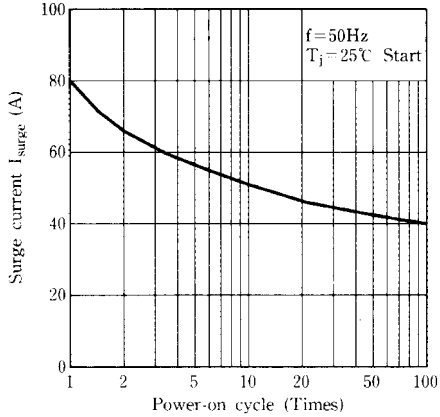


Fig. 6 Maximum ON-state Power Dissipation vs. RMS ON-state Current

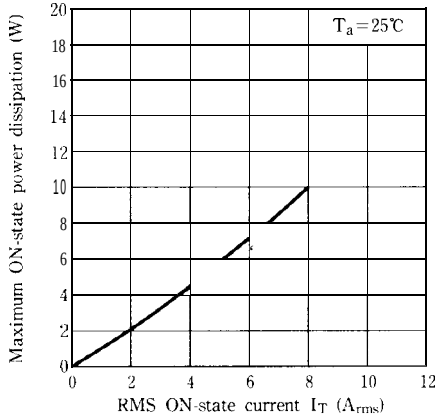


Fig. 7 Minimum Trigger Current vs. Ambient Temperature

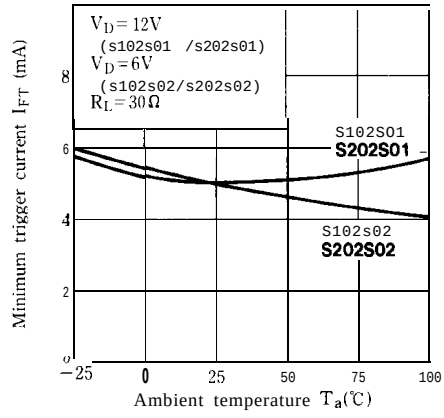


Fig. 8 Relative Repetitive Peek OFF-state Voltage vs. Ambient Temperature

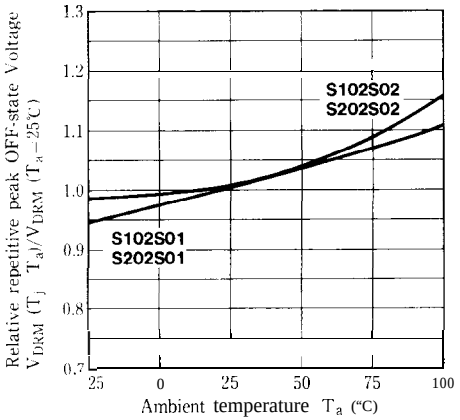
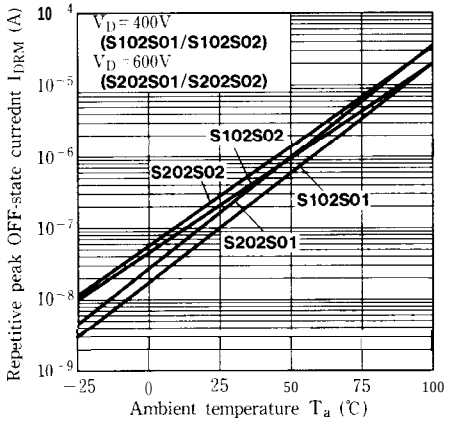


Fig. 9 Repetitive Peak OFF-state Current vs. Ambient Temperature



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