

S101S05V/S101S06V S201S05V/S201S06V

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. 3A rms at $T_c \leq 100^\circ\text{C}$
 (With heat sink)
3. Isolation voltage between input and output
 $(V_{iso}: 3\,000\,V_{rms})$
4. Built-in zero-cross circuit
 (S101S06V/S201S06V)
5. Recognized by UL, file No. E94758
 Approved by CSA, No. LR63705

■ Applications

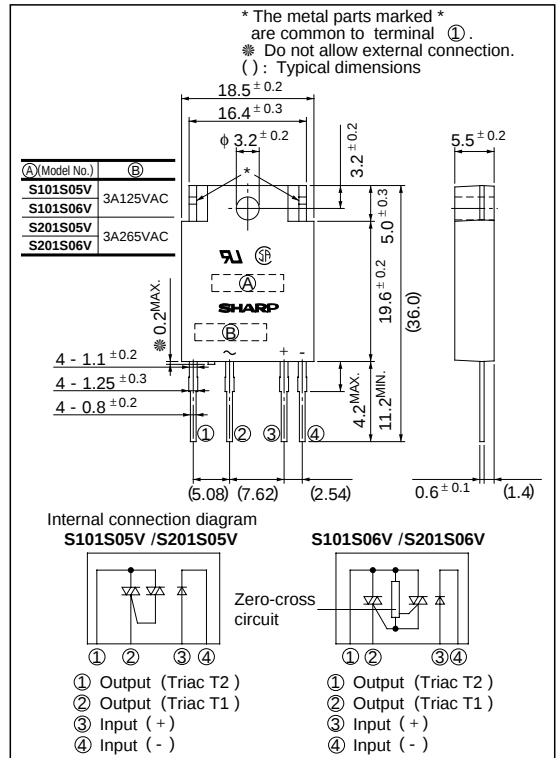
1. OA equipment such as copiers
2. FA equipment

■ Model Line-ups

	For 100V lines	For 200V lines
No built-in zero-cross circuit	S101S05V	S201S05V
Built-in zero-cross circuit	S101S06V	S201S06V

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating		Unit
			S101S05V / S101S06V	S201S05V / S201S06V	
Input	Forward current	I _F	50		mA
	Reverse voltage	V _R	6		V
Output	RMS ON-state current	I _T	*43		A _{rms}
	*1 Peak one cycle surge current	I _{surge}	30		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	40		A/ μ s
	Operating frequency	f	45 to 65		Hz
	*2 Isolation voltage	V _{iso}	3 000		V _{rms}
Operating temperature		T _{opr}	- 25 to + 100		°C
Storage temperature		T _{stg}	- 30 to + 125		°C
*3 Soldering temperature		T _{sol}	260		°C

*1 60Hz sine wave, start at $T_j = 25^\circ\text{C}$

*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 10 seconds

*4 $T_c \leq 100^\circ\text{C}$

Electrical Characteristics

(Ta = 25°C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Foward 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
	RMS ON-state current		V _T	Resistance load, I _F = 20mA I _T = 1.5A _{rms}	-	-	1.5	V _{rms}
	Holding current		I _H	-	-	-	50	mA
	Critical rate of rise of OFF-state voltage		dV/dt	V _D = 2/3V _{DRM}	30	-	-	V/μ s
	Critical rate of rise of com- mutating OFF-state voltage		(dV/dt) _c	T _j = 125°C, V _D = 400V dI _t /d t = -1.5A/ms	4	-	-	V/μ s
Transfer charac- teristics	Minimum trigger current	S101S05V/ S201S05V	I _{FT}	V _D = 12V, R _L = 30Ω	-	-	15	mA
		S101S06V/ S201S06V		V _D = 6V, R _L = 30Ω	-	-	15	
	Isolation resistance		R _{ISO}	DC500V, 40 to 60 % RH	10 ¹⁰	-	-	Ω
	Zero-cross voltage	S101S06V	V _{OX}	I _F = 15mA	-	-	35	V
		S201S06V			-	-	35	
	Turn-on time	S101S05V/ S201S05V	t _{on}	AC50Hz	-	-	1	ms
		S101S06V/ S201S06V			-	-	10	
	Turn-off time	S101S05V/ S201S05V	t _{off}	AC50Hz	-	-	10	ms
S101S06V/ S201S06V		-			-	10		
Thermal resistance (Between junction and case)			R _{th(j-c)}	-	-	6	-	°C/W
Thermal resistance (Between junction and ambience)			R _{th(j-a)}	-	-	45	-	°C/W

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

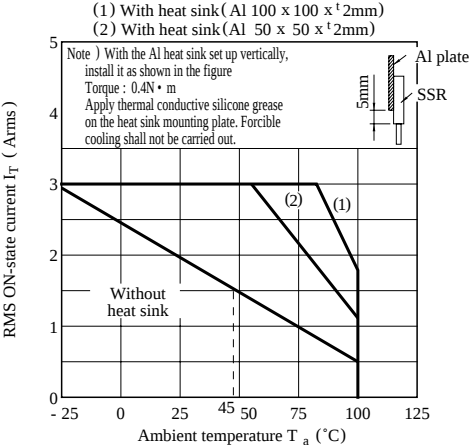


Fig. 2 RMS ON-state Current vs. Case Temperature

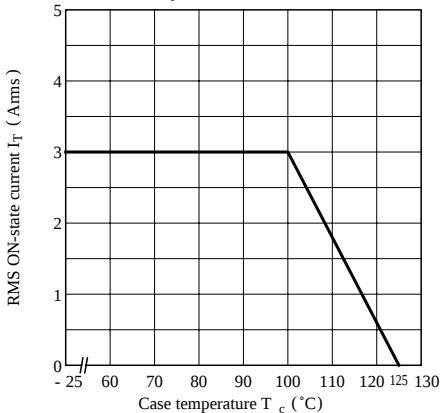


Fig. 3 Forward Current vs. Ambient Temperature

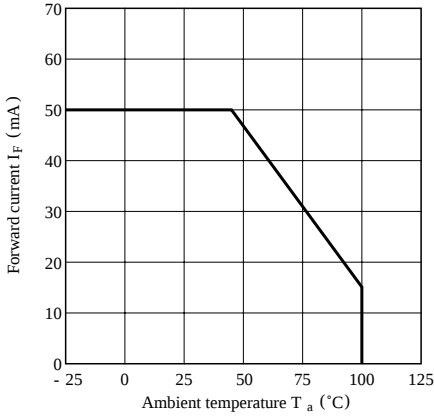


Fig. 4 Forward Current vs. Forward Voltage

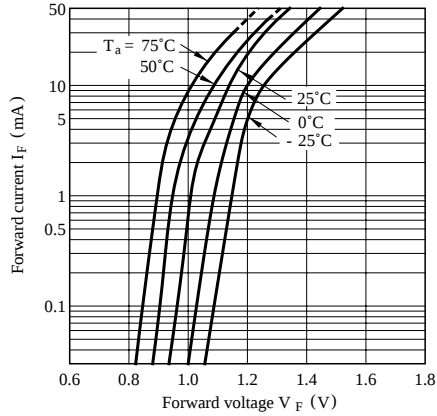


Fig. 5 Surge Current vs. Power-on Cycle

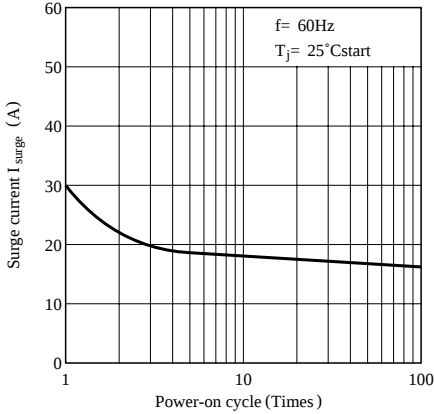


Fig. 6 Maximum ON-state Power Dissipation vs. RMS ON-state Current (Typical Value)

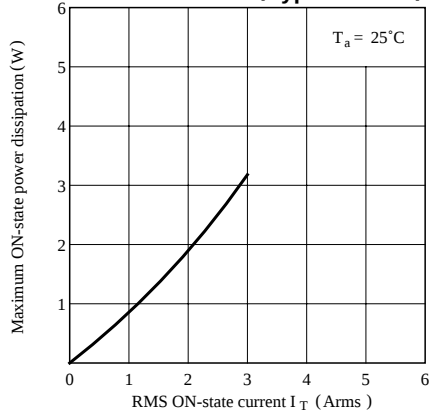


Fig.7-a Minimum Trigger Current vs. Ambient Temperature (Typical Value) (S101S05V/S201S05V)

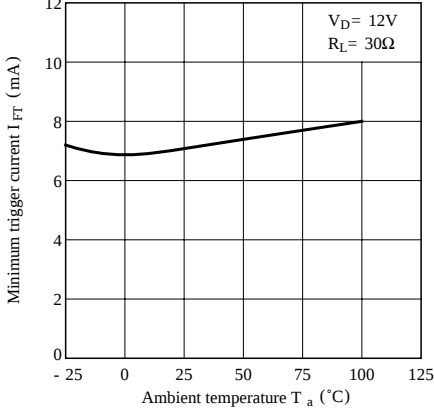


Fig.7-b Minimum Trigger Current vs. Ambient Temperature (Typical Value) (S101S06V/S201S06V)

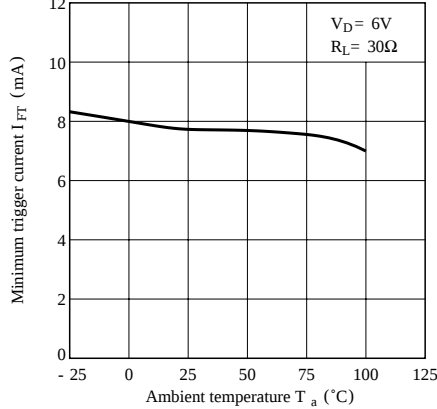


Fig.8-a Repetitive Peak OFF-state Current vs. Ambient Temperature (Typical Value) (S101S05V/S101S06V)

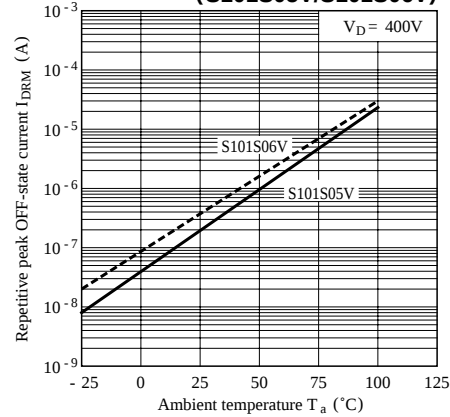
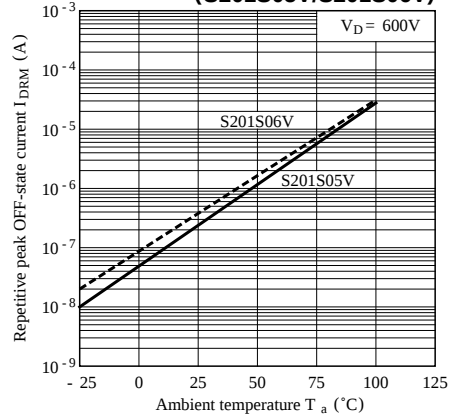


Fig.8-b Repetitive Peak OFF-state Current vs. Ambient Temperature (Typical Value) (S201S05V/S201S06V)



● Please refer to the chapter “Precautions for Use ”

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