

S101S05V/S101S06V S201S05V/S201S06V

SIP Type SSR with Mounting Capability for External Heat Sink

■ Features

- High radiation resin mold package.
- RMS ON-state current
 I_T : MAX. 3Arms at $T_c \leq 100^\circ\text{C}$
 (With heat sink)
- Isolation voltage between input and output
 $(V_{iso}: 3\ 000\ V_{rms})$
- Built-in zero-cross circuit
 (S101S06V/S201S06V)
- Recognized by UL, file No. E94758
 Approved by CSA, No. LR63705

■ Applications

- OA equipment such as copiers
- 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

■ Absolute Maximum Ratings

 $(T_a = 25^\circ\text{C})$

Parameter	Symbol	Rating		Unit	
		S101S05V / S101S06V	S201S05V / S201S06V		
Input	Forward current	I_F	50	mA	
	Reverse voltage	V_R	6	V	
	RMS ON-state current	I_T	*4 3	A _{rms}	
Output	*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 / μs
	Operating frequency	f	45 to 65		Hz
	*2 Isolation voltage	V_{iso}	3 000	V _{rms}	
	Operating temperature	T_{opr}	- 25 to + 100	$^\circ\text{C}$	
	Storage temperature	T_{stg}	- 30 to + 125	$^\circ\text{C}$	
	*3 Soldering temperature	T_{sol}	260	$^\circ\text{C}$	

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

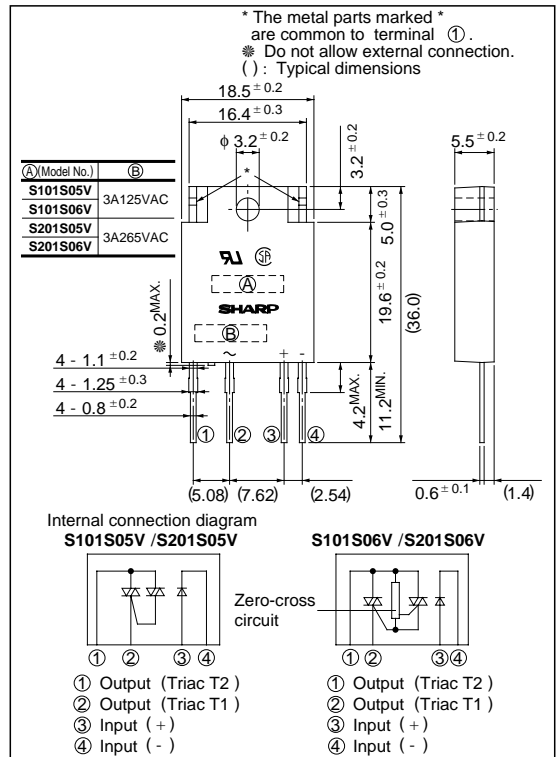
*2 60Hz AC for 1 minute, 40 to 60% RH. Apply voltages between input and output, by the dielectric withstand voltage tester with zero-cross circuit. (Input and output shall be shorted respectively)

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

*3 For 10 seconds

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

■ Outline Dimensions

 (Unit : mm)


Electrical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit	
Input	Forward voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V	
	Reverse current	I_R	$V_R = 3\text{V}$	-	-	10^{-4}	A	
Repetitive peak OFF-state current		I_{DRM}	$V_D = V_{DRM}$	-	-	10^{-4}	A	
Output	RMS ON-state current	V_T	Resistance load, $I_F = 20\text{mA}$ $I_T = 1.5A_{rms}$	-	-	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	-	-	$V/\mu s$	
	Critical rate of rise of commutating OFF-state voltage	$(dV/dt)_c$	$T_j = 125^\circ\text{C}$, $V_D = 400\text{V}$ $dI/dt = -1.5\text{A/ms}$	4	-	-	$V/\mu s$	
Transfer characteristics	Minimum trigger current	S101S05V / S201S05V	I_{FT}	$V_D = 12\text{V}$, $R_L = 30\Omega$	-	-	15	mA
		S101S06V / S201S06V			$V_D = 6\text{V}$, $R_L = 30\Omega$	-	-	
	Isolation resistance		R_{ISO}	DC500V, 40 to 60 % RH	10^{10}	-	-	Ω
	Zero-cross voltage		V_{OX}	$I_F = 15\text{mA}$	-	-	35	V
					-	-	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	-	$^\circ\text{C/W}$	
Thermal resistance (Between junction and ambience)		$R_{th(j-a)}$	-	-	45	-	$^\circ\text{C/W}$	

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

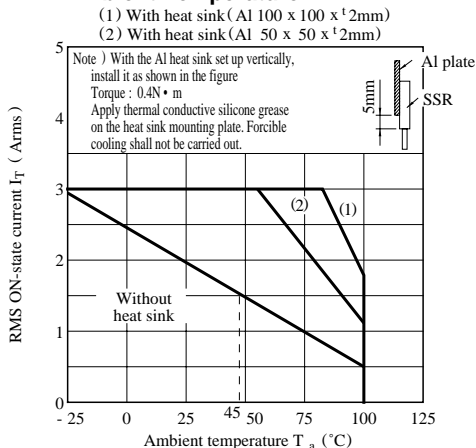


Fig. 2 RMS ON-state Current vs. Case Temperature

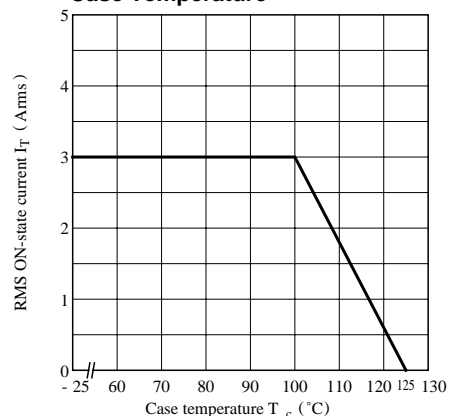


Fig. 3 Forward Current vs. Ambient Temperature

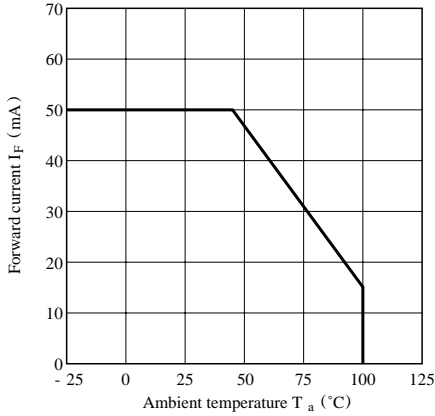


Fig. 4 Forward Current vs. Forward Voltage

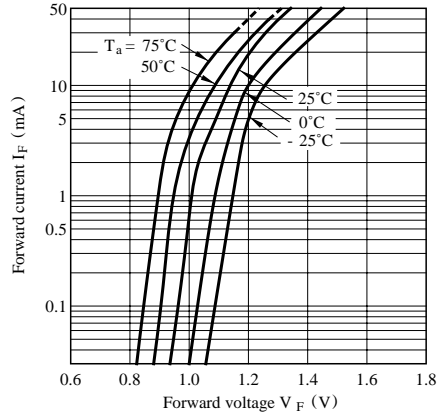


Fig. 5 Surge Current vs. Power-on Cycle

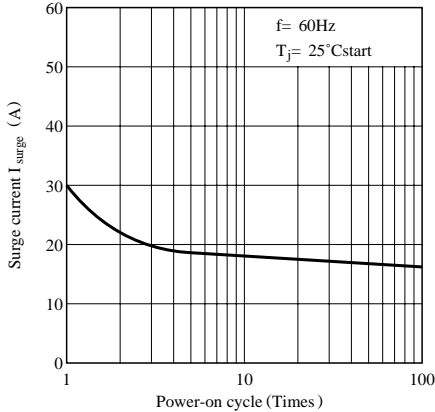


Fig. 6 Maximum ON-state Power Dissipation vs. RMS ON-state Current (Typical Value)

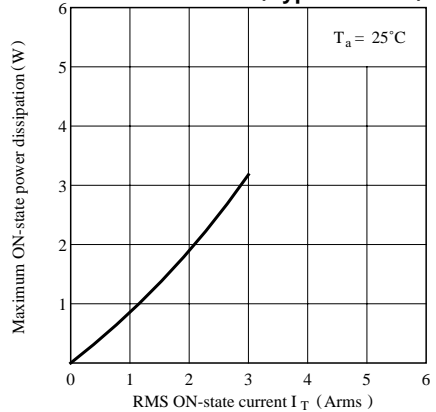


Fig.7-a Minimum Trigger Current vs. Ambient Temperature (Typical Value) (S101S05V/S201S05V)

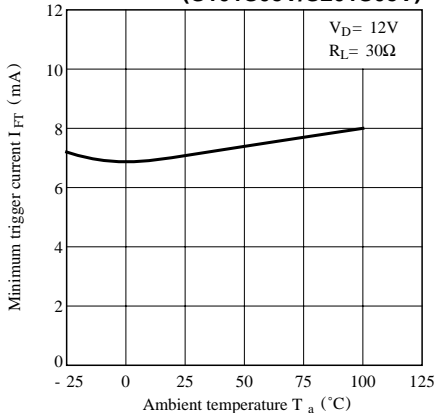


Fig.7-b Minimum Trigger Current vs. Ambient Temperature (Typical Value) (S101S06V/S201S06V)

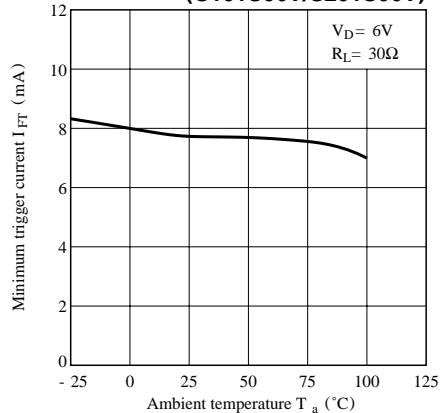


Fig.8-a Repetitive Peak OFF-state Current vs. Ambient Temperature (Typical Value) (S101S05V/S101S06V)

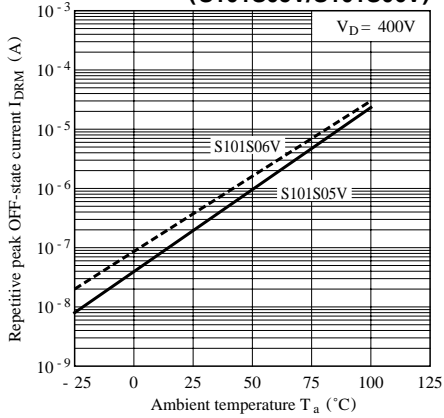
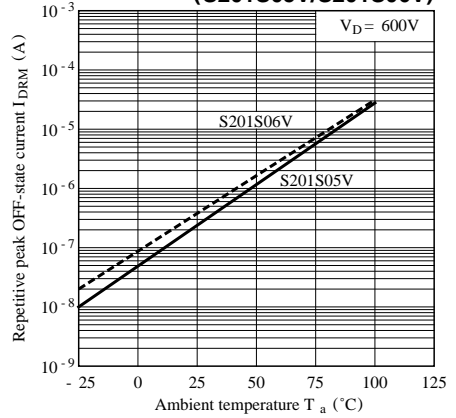


Fig.8-b Repetitive Peak OFF-state Current vs. Ambient Temperature (Typical Value) (S201S05V/S201S06V)



● Please refer to the chapter “Precautions for Use”