

S102T01/S102T02 S202T01/S202T02

Low Height Type Solid State Relays

■ Features

1. Low height type (height : 16 mm)
30% less compared with S101S05V
2. Effective ON-state current I_T : MAX. 2Ams ($T_a = \leq 40^\circ\text{C}$)
3. Model Line-ups

	No zero cross circuit	Built-in zero cross circuit
AC100V	S102T01	S102T02
AC200V	S202T01	S202T02

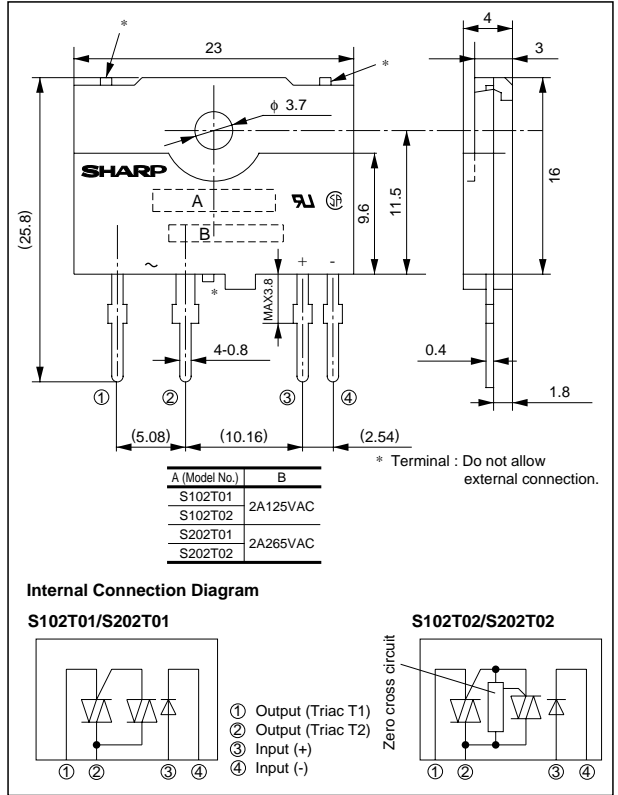
4. Recognized by UL, file No. E94758
Approved by CSA, No. LR63705

■ Applications

1. Programmable controllers
2. Air conditioners
3. Copiers
4. Automatic vending machines

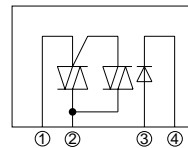
■ Outline Dimensions

(Unit : mm)



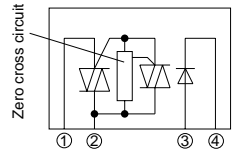
Internal Connection Diagram

S102T01/S202T01



- ① Output (Triac T1)
- ② Output (Triac T2)
- ③ Input (+)
- ④ Input (-)

S102T02/S202T02



■ Absolute Maximum ratings

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

Parameter	Symbol	Rating		Unit	
		S102T01 / S102T02	S202T01 / S202T02		
Input	Forward current	I_F	50	mA	
	Reverse voltage	V_R	6	V	
Output	*1 Effective ON-state current	I_T	2	A_{rms}	
	*2 Peak one cycle surge current	I_{surge}	20	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		$A/\mu s$
	Operating frequency	f	45 to 65		Hz
	Operating temperature	T_{opr}	- 25 to +100		$^\circ\text{C}$
Storage temperature	T_{sig}	- 30 to +125		$^\circ\text{C}$	
*3 Isolation voltage	V_{iso}	3 000		V_{rms}	
Soldering temperature	T_{sol}	260 (For 10 seconds)		$^\circ\text{C}$	

*1 Refer to Fig. 1. *2 60Hz sine wave, start at $T_j = 25^\circ\text{C}$

*3 Isolation voltage test method

- 1) Use a dielectric withstand voltage tester with zero cross circuit.
- 2) The applied voltage waveform shall be sine wave.
- 3) Apply voltage between input and output. (Input and output terminals shall be shorted respectively.)

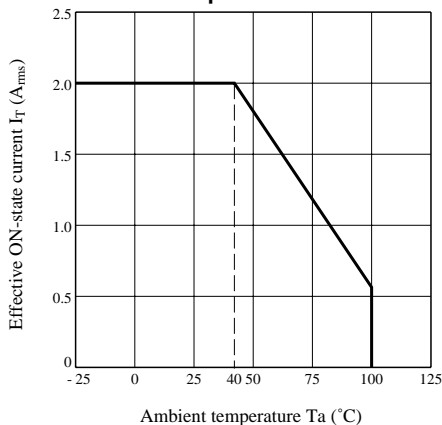
Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYPE.	MAX.	Unit	
Input	Forward voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V	
	Reverse current	I_R	$V_R = 3\text{V}$	-	-	1×10^{-4}	A	
Output	Repetitive peak OFF-state current	I_{DRM}	$V_D = V_{DRM}$	-	-	1×10^{-4}	A	
	ON-state voltage	V_T	$I_T = 2A_{rms}$ Load resistance, $I_F = 20\text{mA}$	-	-	1.7	V_{rms}	
	Holding current	I_H	-	-	-	25	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 OFF-state voltage at commutation	$(dV/dt)_C$	$T_j = 125^\circ\text{C}$, $V_D = 400\text{V}$ $dI_i/dt = 1.0\text{A/ms}$	4	-	-	$V/\mu s$	
	Minimum trigger current	I_{FT}	*4	-	-	8	mA	
Transfer characteristics	Zero cross voltage	S102T02/S202T02 V_{OX}	$I_F = 8\text{mA}$	-	-	35	V	
	Insulation resistance	R_{ISO}	DC500V, 40 to 60% RH	1×10^{10}	-	-	Ω	
	Turn-on time	S102T01/S202T01	t_{on}	AC50Hz	-	-	1	ms
		S102T02/S202T02			-	-	10	
	Turn-off time	t_{off}	AC50Hz	-	-	10	ms	

*4 S102T01/S202T01 $V_D=12\text{V}, R_L=30\Omega$ S102T02/S202T02 $V_D=6\text{V}, R_L=30\Omega$

Fig. 1 Effective On-state current vs. Ambient Temperature



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