

# 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	<b>S102T01</b>	<b>S102T02</b>
AC200V	<b>S202T01</b>	<b>S202T02</b>

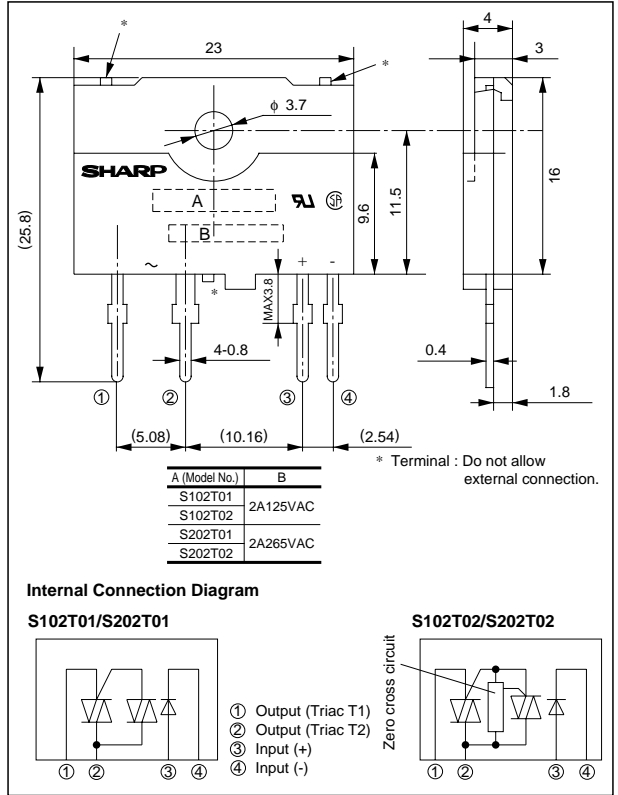
4. Recognized by UL, file No. E94758  
Approved by CSA, No. LR63705

### ■ Applications

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

### ■ Outline Dimensions

(Unit : mm)



### ■ 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	$I_R$	$V_R = 3\text{V}$	-	-	$1 \times 10^{-4}$	A	
Output	Repetitive peak OFF-state current	$I_{DRM}$	$V_D = V_{DRM}$	-	-	$1 \times 10^{-4}$	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	$(dV/dt)_C$	$T_j = 125^\circ\text{C}$ , $V_D = 400\text{V}$ $dI_i/dt_i = 1.0\text{A/ms}$	4	-	-	$V/\mu s$	
	Minimum trigger current	$I_{FT}$	*4	-	-	8	mA	
Transfer characteristics	Zero cross voltage	<b>S102T02/S202T02</b> $V_{OX}$	$I_F = 8\text{mA}$	-	-	35	V	
	Insulation resistance	$R_{ISO}$	DC500V, 40 to 60% RH	$1 \times 10^{10}$	-	-	$\Omega$	
	Turn-on time	<b>S102T01/S202T01</b>	$t_{on}$	AC50Hz	-	-	1	ms
		<b>S102T02/S202T02</b>			-	-	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**

