

# S11MS7

## High Speed/ High Noise-resistance Type Phototriac Coupler

### ■ Features

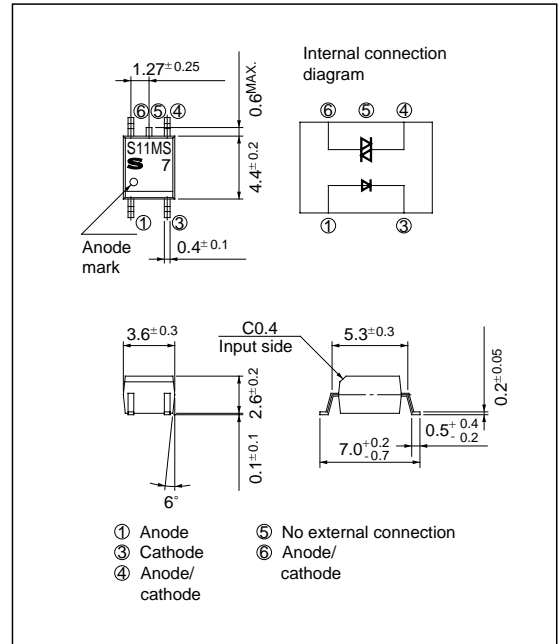
1. High speed ( $t_{on}$  : MAX. 15  $\mu$ s)
2. High noise resistance  
( $dV/dt$  : MIN. 500V/ $\mu$ s)
3. Low trigger current ( $I_{FT}$  : MAX. 5mA)
4. Mini-flat package type
5. Recognized by UL, file No.E64380

### ■ Applications

1. For triggering medium/high power triac

### ■ Outline Dimensions

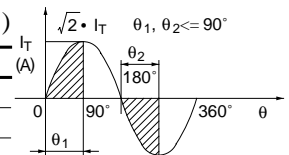
(Unit : mm)



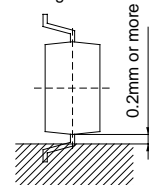
### ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	6	V
Output	*1RMS ON-state current	$I_T$	0.05	$A_{rms}$
	Peak one cycle surge current	$I_{surge}$	0.6 (50Hz Sine Wave)	A
	Repetitive peak OFF-state voltage	$V_{DRM}$	400	V
*2Isolation voltage		$V_{iso}$	2 500	$V_{rms}$
Operating temperature		$T_{opr}$	- 30 to +100	°C
Storage temperature		$T_{stg}$	- 40 to +125	°C
*3Soldering temperature		$T_{sol}$	260	°C



Soldering area



\*1 The definition of conduction angle  $\theta$  of effective on current  $I_T$  should be as shown in the right drawing.

\*2 40 to 60% RH, AC for 1 minute,  $f = 60$ Hz

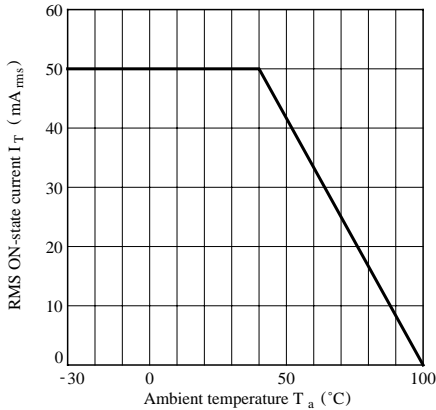
\*3 For 10 seconds

**Electro-optical Characteristics**

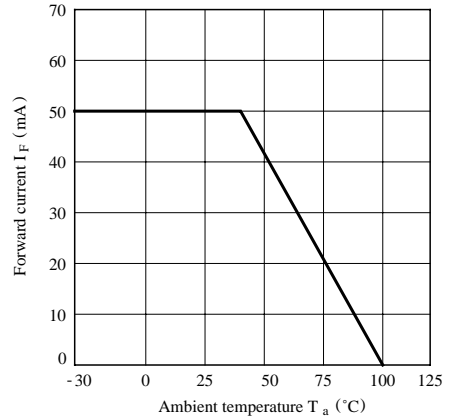
( $T_a = 25^\circ\text{C}$ )

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	$\mu\text{A}$
Output	Repetitive peak OFF-state current	$I_{\text{DRM}}$	$V_{\text{DRM}} = \text{Rated}$	-	-	1	$\mu\text{A}$
	ON-state voltage	$V_T$	$I_T = 0.05\text{A}$	-	1.3	2.5	V
	Holding current	$I_H$	$V_D = 6\text{V}$	-	0.5	3.5	mA
	Critical rate of rise of OFF-state voltage	$dV/dt$	$V_{\text{DRM}} = (1/\sqrt{2}) \cdot \text{Rated}$	500	-	-	$\text{V}/\mu\text{s}$
Transfer characteristics	Minimum trigger current	$I_{\text{FT}}$	$V_D = 6\text{V}, R_L = 100\Omega$	-	-	5	mA
	Isolation resistance	$R_{\text{ISO}}$	DC = 500V, 40 to 60% RH	$5 \times 10^{10}$	$10^{11}$	-	$\Omega$
	Turn-on time	$t_{\text{on}}$	$V_D = 6\text{V}, R_L = 100\Omega, I_F = 20\text{mA}$	-	10	15	$\mu\text{s}$

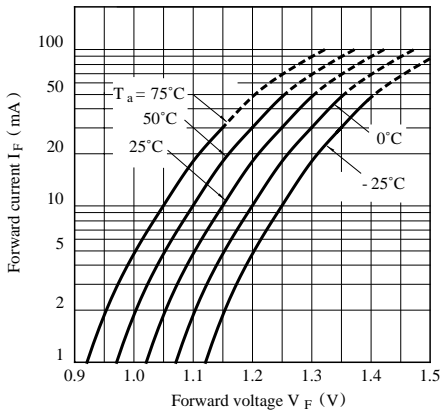
**Fig. 1 RMS ON-state Current vs. Ambient Temperature**



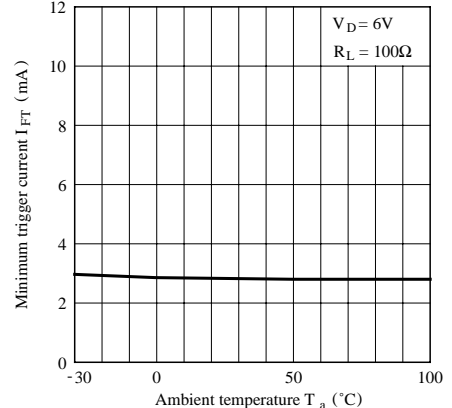
**Fig. 2 Forward Current vs. Ambient Temperature**



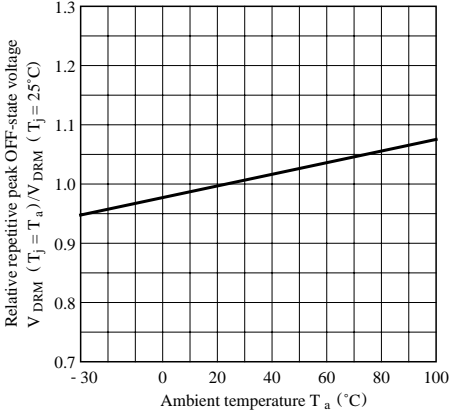
**Fig. 3 Forward Current vs. Forward Voltage**



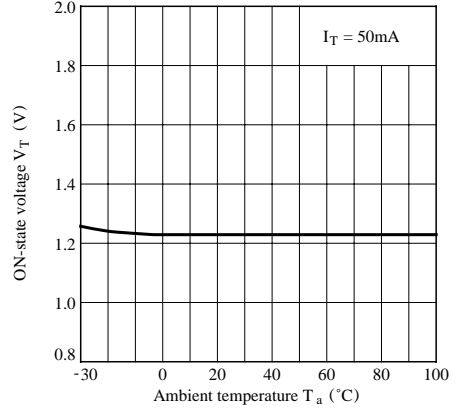
**Fig. 4 Minimum Trigger Current vs. Ambient Temperature**



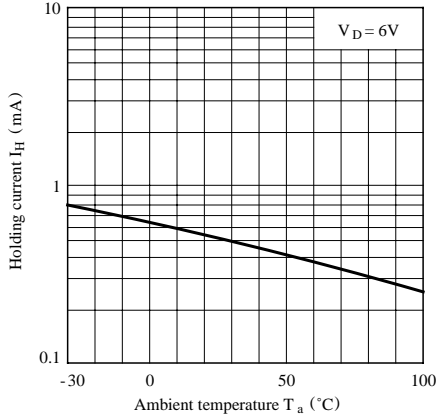
**Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature**



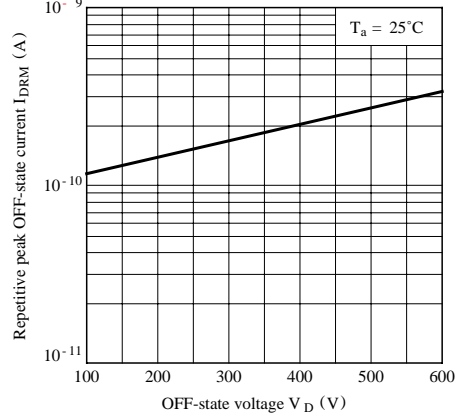
**Fig. 6 ON-state Voltage vs. Ambient Temperature**



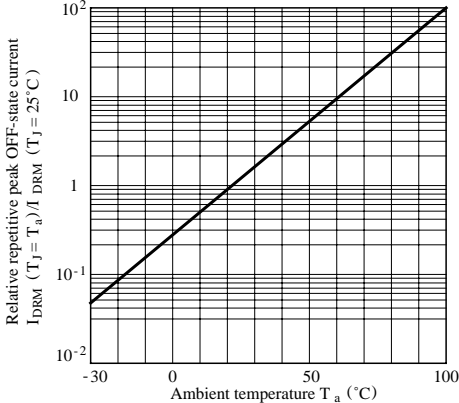
**Fig. 7 Holding Current vs. Ambient Temperature**



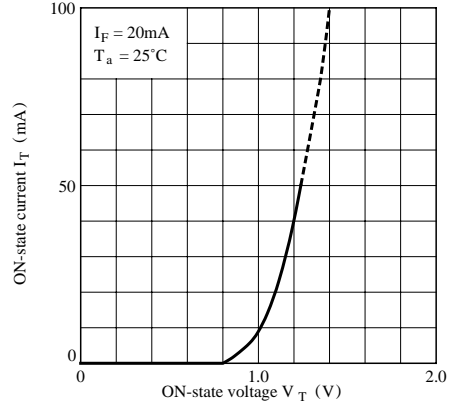
**Fig. 8 Repetitive Peak OFF-state Current vs OFF-state Voltage**



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



**Fig.10 ON-state Current vs. ON-state Voltage**



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