

# S11ME5/S11ME6/S21ME5F S21ME5/S21ME6/S21ME6F

## Phototriac Coupler Conformable to European Safety Standard

- \* Lead forming type (I type) of / S21ME5F/ S21ME6F are also available. (/ S21ME5FI/ S21ME6FI)
- \* DIN-VDE0884 approved type is also available as an option.

### ■ Features

1. Internal isolation distance : 0.4mm or more
2. Creepage distance : 6.4mm or more
3. Clearance : 6.4mm or more
4. Recognized by UL file No. E64380

Approved by VDE (DIN-VDE0884 : No.76850)

Approved by BSI (BS415 : No.6690, BS7002 : No.7421)

Approved by SEMKO (No.9202227)

Approved by DEMKO (No.107968)

Approved by EI (No.152029-02,03,04,0116)

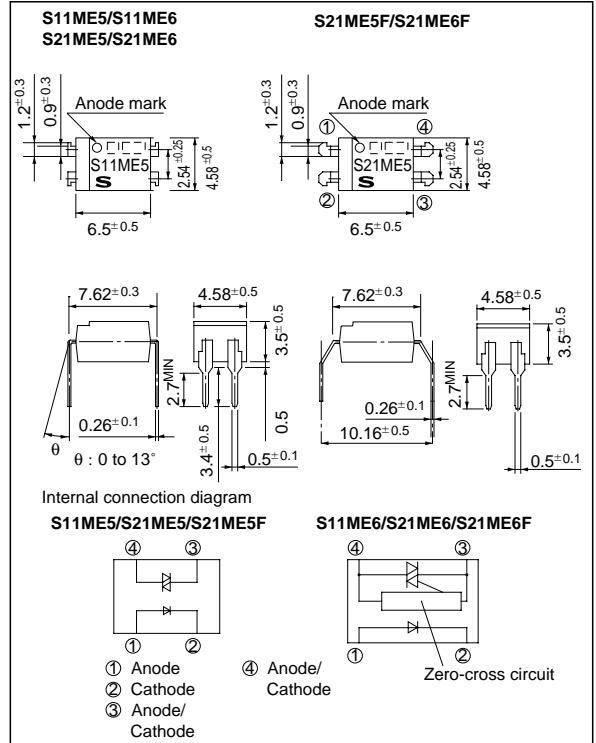
5. Built-in zero-cross circuit  
(S11ME6/S21ME6/S21ME6F)
6. Wide forming type (S21ME5F, S21ME6F)  
(Distance between lead pins : 10.16 mm)
7. High isolation voltage between input and output  
(Viso : 5 000V<sub>rms</sub>)

### ■ Applications

1. For triggering medium/high power triac
2. For detecting over voltage of switching power supply

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I <sub>F</sub>	50	mA
	Reverse voltage	V <sub>R</sub>	6	V
Output	RMS ON-state current	I <sub>T</sub>	100	mA <sub>rms</sub>
	*1 Peak one cycle surge current	I <sub>surge</sub>	1.2	A
	Repetitive peak OFF-state voltage	V <sub>DRM</sub>	400	V
			*2 S21ME5 / S21ME6	
*3 Isolation voltage		V <sub>iso</sub>	5 000	V <sub>rms</sub>
Operating temperature		T <sub>opr</sub>	- 30 to + 100	°C
Storage temperature		T <sub>stg</sub>	- 55 to + 125	°C
*4 Soldering temperature		T <sub>sol</sub>	260	°C

\*1 50Hz sine wave \*2 Also S21ME5F/ S21ME6F

\*3 40 to 60% RH, AC for 1 minute, f = 60Hz

\*4 For 10 seconds

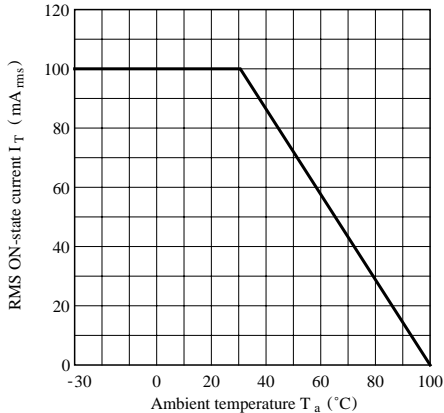
■ **Electro-optical Characteristics**

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

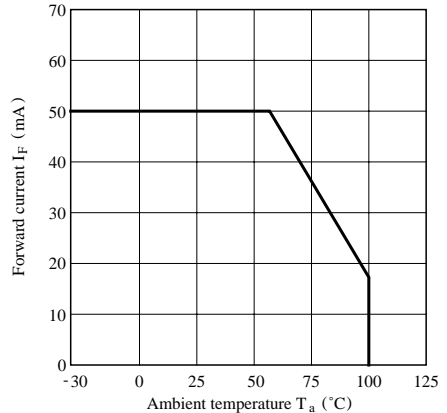
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	$V_F$	$I_F = 20\text{mA}$	-	1.2	1.4	V
	Reverse current	$I_R$	$V_R = 3\text{V}$	-	-	$10^{-5}$	A
Output	Repetitive peak OFF-state current	$I_{DRM}$	$V_{DRM} = \text{Rated}$	-	-	$10^{-6}$	A
	ON-state voltage	$V_T$	$I_T = 100\text{mA}$	-	-	2.5	V
	Holding current	$I_H$	$V_D = 6\text{V}$	0.1	-	3.5	mA
	Critical rate of rise of OFF-state voltage	$dV/dt$	$V_{DRM} = (1/\sqrt{2}) \cdot \text{Rated}$	100	-	-	$\text{V}/\mu\text{s}$
	*5Zero-cross voltage	$V_{OX}$	Resistance load, $I_F = 15\text{mA}$	-	-	35	V
	Transfer characteristics	Minimum trigger current	$I_{FT}$	$R_L = 100\Omega, V_D = 6\text{V}$	-	-	10
Transfer characteristics	Isolation resistance	$R_{ISO}$	$\text{DC} = 500\text{V}, 40 \text{ to } 60\% \text{ RH}$	$5 \times 10^{10}$	$10^{11}$	-	$\Omega$
	Turn-on time	$t_{on}$	$V_D = 6\text{V}, R_L = 100\Omega, I_F = 20\text{mA}$	-	-	100	$\mu\text{s}$

\*5 **S11ME6, S21ME6, S21ME6F**

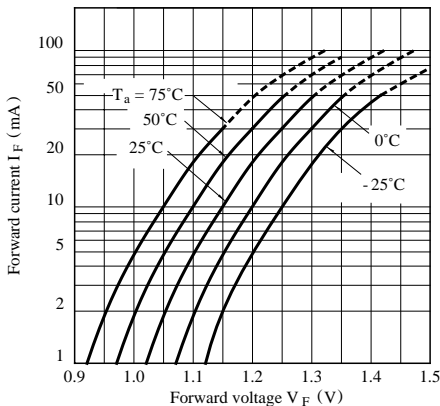
**Fig. 1 RMS ON-state Current vs. Ambient Temperature**



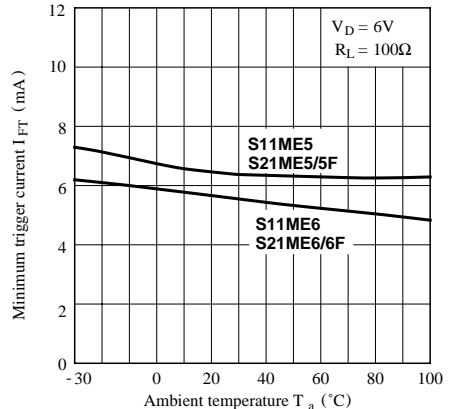
**Fig. 2 Forward Current vs. Ambient Temperature**



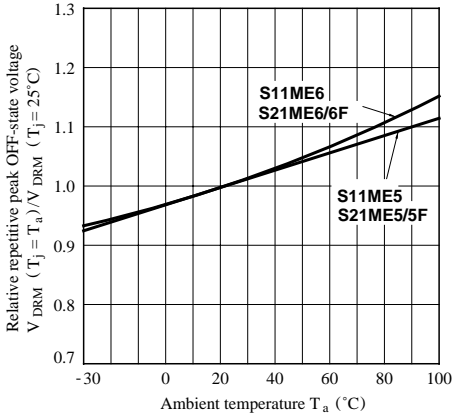
**Fig. 3 Forward Current vs. Forward Voltage**



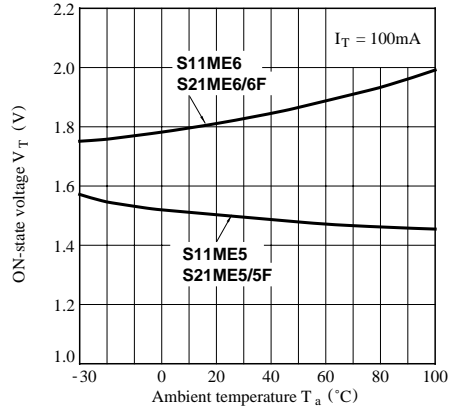
**Fig. 4 Minimum Trigger Current vs. Ambient Temperature**



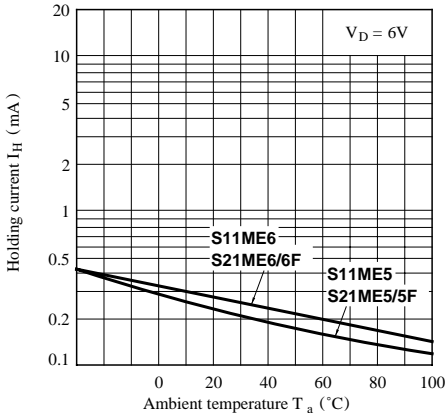
**Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature**



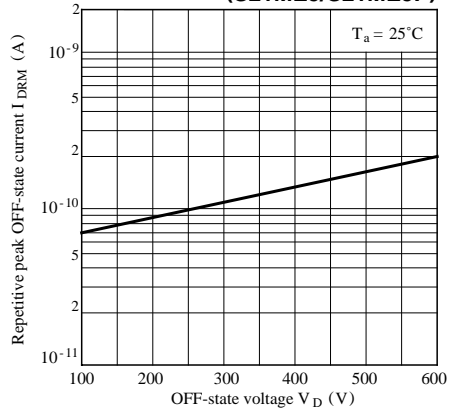
**Fig. 6 ON-state Voltage vs. Ambient Temperature**



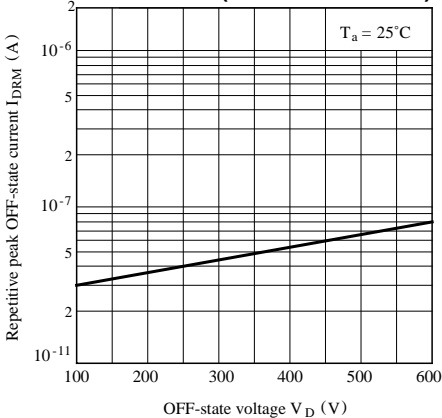
**Fig. 7 Holding Current vs. Ambient Temperature**



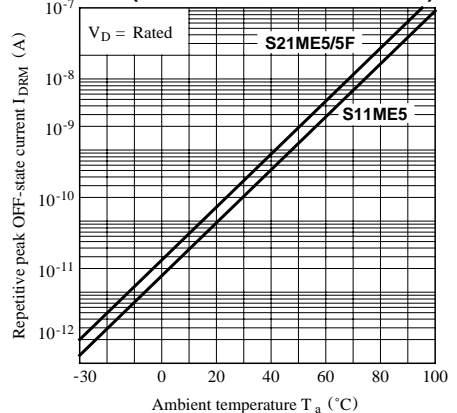
**Fig. 8-a Repetitive Peak OFF-state Current vs. OFF-state Voltage (S21ME5/S21ME5F)**



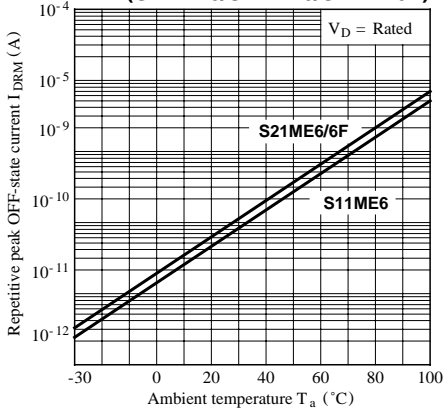
**Fig. 8-b Repetitive Peak OFF-state Current vs. OFF-state Voltage (S21ME6/S21ME6F)**



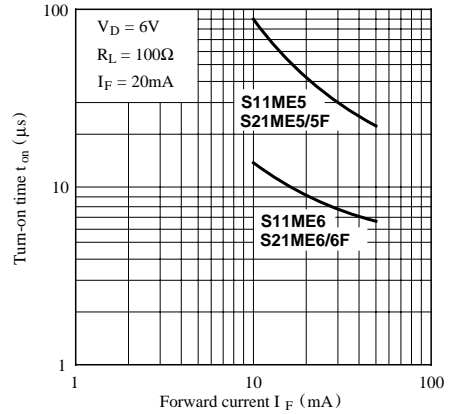
**Fig. 9-a Repetitive Peak OFF-state Current vs. Ambient Temperature (S11ME5/S21ME5/S21ME5F)**



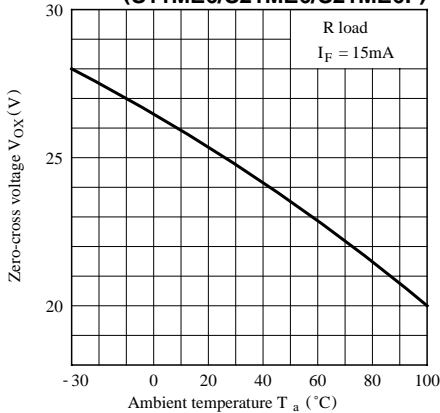
**Fig. 9-b Repetitive Peak OFF-state Current vs. Ambient Temperature (S11ME6/S21ME6/S21ME6F)**



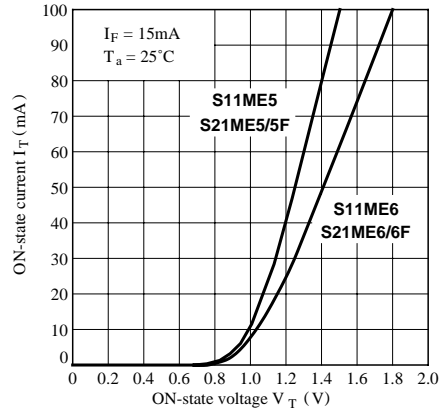
**Fig.10 Turn-on Time vs. Forward Current**



**Fig11. Zero-cross Voltage vs. Ambient Temperature (S11ME6/S21ME6/S21ME6F)**



**Fig.12 ON-state Current vs. ON-state Voltage**



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

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    - Alarm equipment
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