

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)

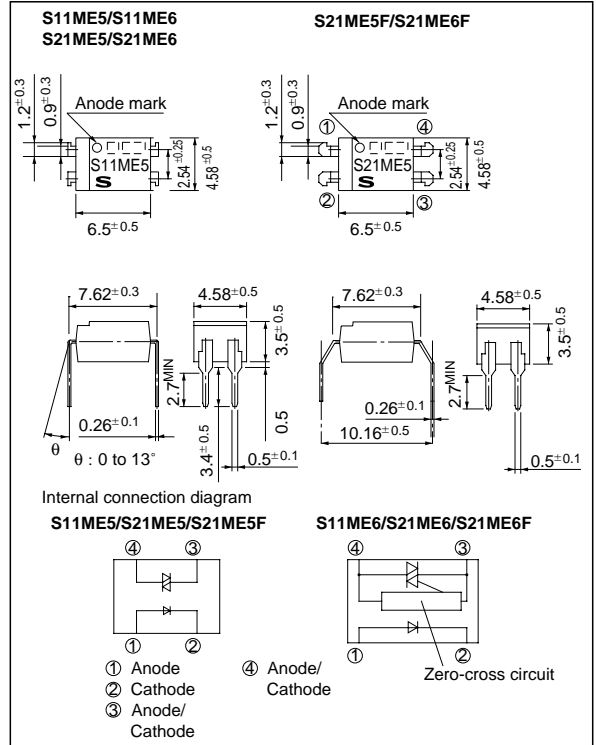
5. Built-in zero-cross circuit
(S11ME6/S21ME6/S21ME6F)
6. Wide forming type (S21ME5F, S21ME6F)
(Distance between lead pins : 10.16 mm)
7. High isolation voltage between input and output
(Viso : 5 000V_{rms})

■ 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 _F | 50 | mA |
| | Reverse voltage | V _R | 6 | V |
| RMS ON-state current | | I _T | 100 | mA _{rms} |
| Output | *1 Peak one cycle surge current | I _{surge} | 1.2 | A |
| | Repetitive peak OFF-state voltage | V _{DRM} | 400 | V |
| | | | *2 S21ME5 / S21ME6 | |
| *3 Isolation voltage | | V _{iso} | 5 000 | V _{rms} |
| Operating temperature | | T _{opr} | - 30 to + 100 | °C |
| Storage temperature | | T _{stg} | - 55 to + 125 | °C |
| *4 Soldering temperature | | T _{sol} | 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} | $\text{DC} = 500\text{V}, 40 \text{ to } 60\% \text{ RH}$ | 5×10^{10} | 10^{11} | - | Ω |
| | Turn-on time | t_{on} | $V_D = 6\text{V}, R_L = 100\Omega, I_F = 20\text{mA}$ | - | - | 100 | μs |

*5 **S11ME6, S21ME6, S21ME6F**

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

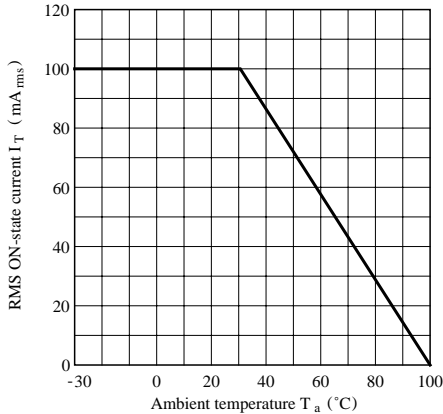


Fig. 2 Forward Current vs. Ambient Temperature

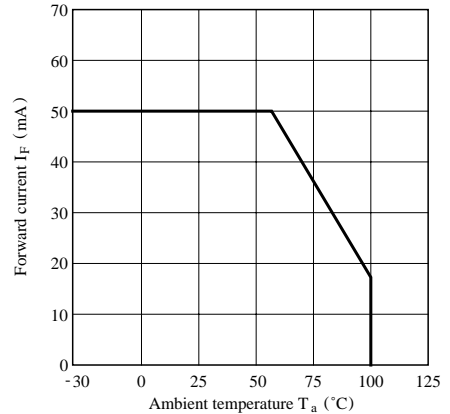


Fig. 3 Forward Current vs. Forward Voltage

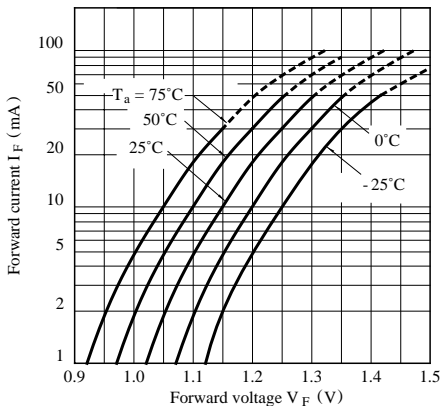


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

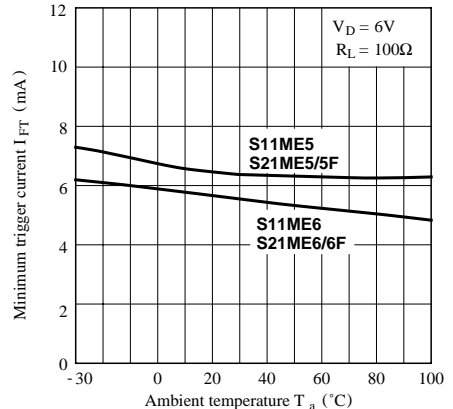


Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

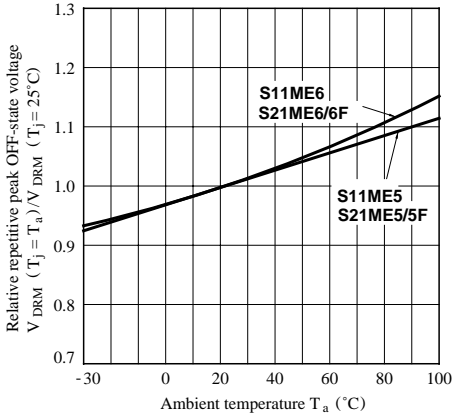


Fig. 6 ON-state Voltage vs. Ambient Temperature

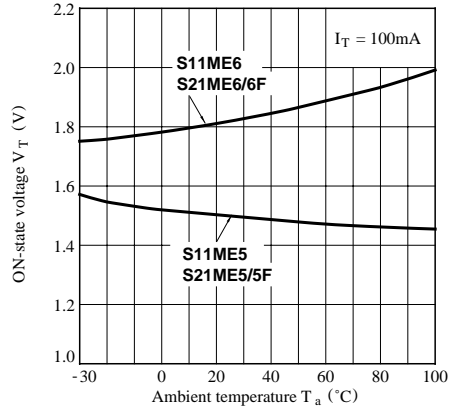


Fig. 7 Holding Current vs. Ambient Temperature

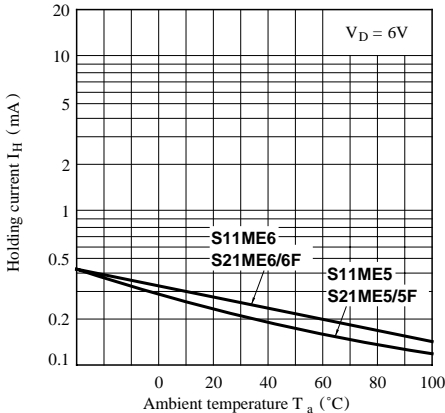


Fig. 8-a Repetitive Peak OFF-state Current vs. OFF-state Voltage (S21ME5/S21ME5F)

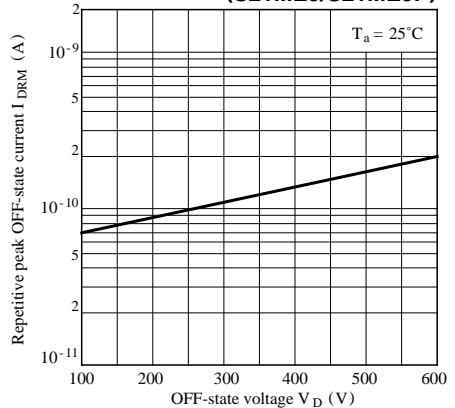


Fig. 8-b Repetitive Peak OFF-state Current vs. OFF-state Voltage (S21ME6/S21ME6F)

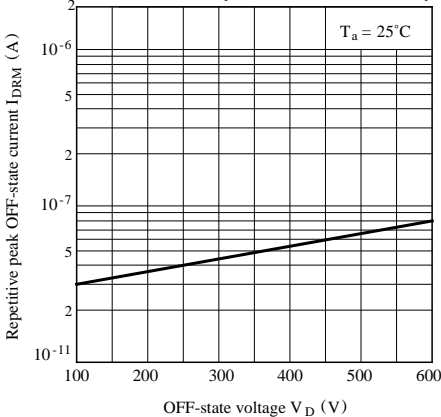


Fig. 9-a Repetitive Peak OFF-state Current vs. Ambient Temperature (S11ME5/S21ME5/S21ME5F)

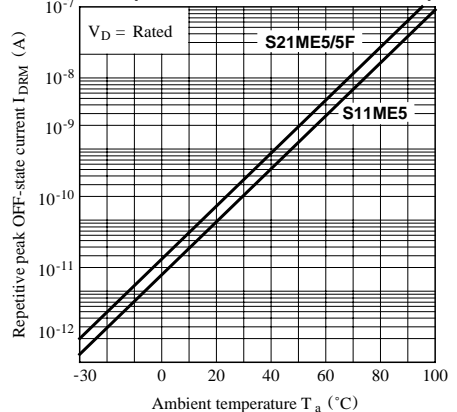


Fig. 9-b Repetitive Peak OFF-state Current vs. Ambient Temperature (S11ME6/S21ME6/S21ME6F)

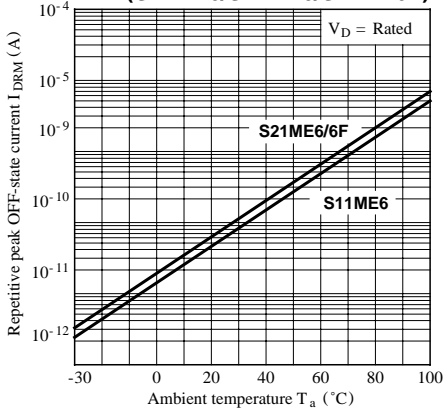


Fig.10 Turn-on Time vs. Forward Current

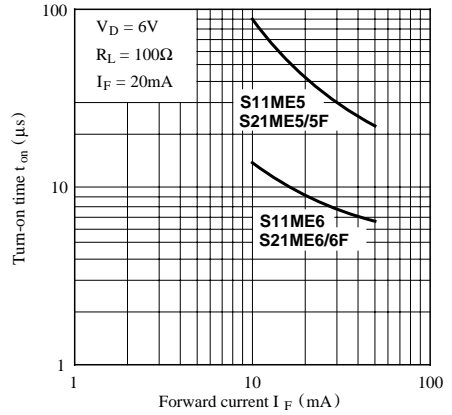


Fig11. Zero-cross Voltage vs. Ambient Temperature (S11ME6/S21ME6/S21ME6F)

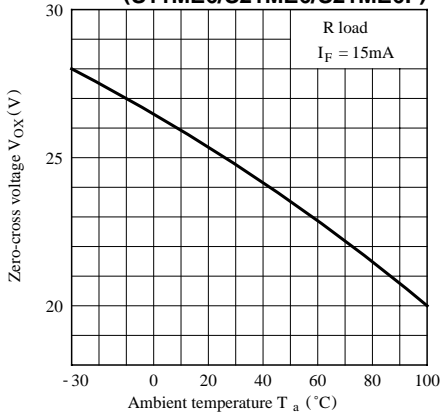
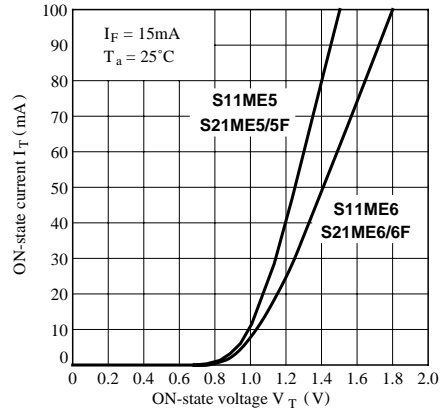


Fig.12 ON-state Current vs. ON-state Voltage



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