

S11MD5V

Mini-flat Type Phototriac Coupler

※ Lead forming type (I type) and taping reel type (P type) are also available. (S11MD5VI/S11MD5VP)

※ TÜV (VDE0884) approved type is also available as an option.

■ Features

1. Isolation voltage between input and output

$$V_{\text{iso}} : 5\,000V_{\text{rms}}$$

2. High critical rate of rise of OFF-state voltage

$$(dV/dt : \text{MIN. } 100V/\mu s)$$

3. Recognized by UL, file No. E64380

(S11MD5V/S11MD5VI)

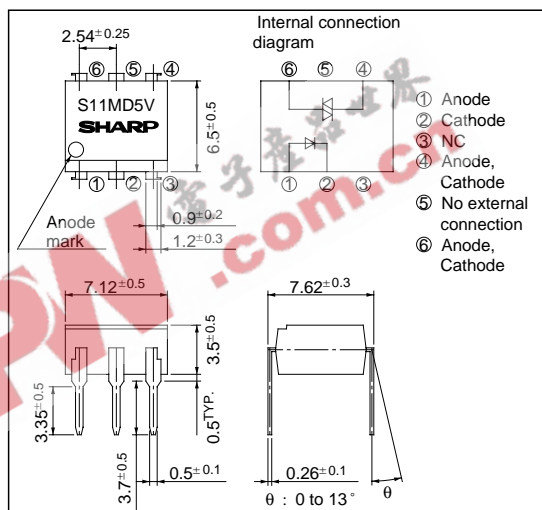
※ S11MD5V is for 100V line

■ Applications

1. For triggering medium/high power triac

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

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

| Parameter | | Symbol | Rating | Unit |
|--------------------------|-----------------------------------|--------------------|-------------|-------------------|
| Input | Forward current | I_F | 50 | mA |
| | Reverse voltage | V_R | 6 | V |
| Output | RMS ON-state current | I_T | 100 | mA _{rms} |
| | *1 Peak one cycle surge current | I_{surge} | 1.2 | A |
| | Repetitive peak OFF-state voltage | V_{DRM} | 400 | V |
| | *2 Isolation voltage | V_{iso} | 5 000 | V_{rms} |
| Operating temperature | | T_{opr} | -30 to +100 | $^\circ\text{C}$ |
| Storage temperature | | T_{sg} | -55 to +125 | $^\circ\text{C}$ |
| *3 Soldering temperature | | T_{sol} | 260 | $^\circ\text{C}$ |

*1 Sine wave *2 40 to 60% RH, AC for 1 minute

*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^{-5} | A |
| Output | Repetitive peak OFF-state current | I_{DRM} | $V_{\text{DRM}} = \text{Rated}$ | - | - | 10^{-6} | A |
| | ON-state voltage | V_T | $I_T = 100\text{mA}$ | - | 1.3 | 2.0 | V |
| | Holding current | I_H | $V_D = 6\text{V}$ | 0.1 | 1 | 3.5 | mA |
| | Critical rate of rise of OFF-state voltage | dV/dt | $V_{\text{DRM}} = 1/\sqrt{2} \text{ Rated}$ | 100 | - | - | V/ μs |
| Transfer characteristics | Minimum trigger current | I_{FT} | $V_D = 6\text{V}, R_L = 100\Omega$ | - | - | 10 | mA |
| | Isolation resistance | R_{ISO} | DC500V, 40 to 60% RH | 5×10^{10} | 10^{11} | - | Ω |
| | Turn-on time | t_{on} | $V_D = 6\text{V}, I_F = 20\text{mA}, R_L = 100\Omega$ | - | 80 | 200 | μs |

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

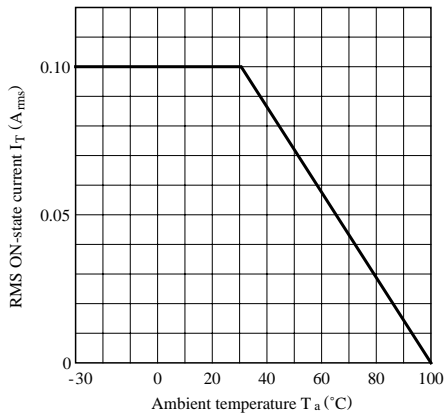


Fig. 2 Forward Current vs. Ambient Temperature

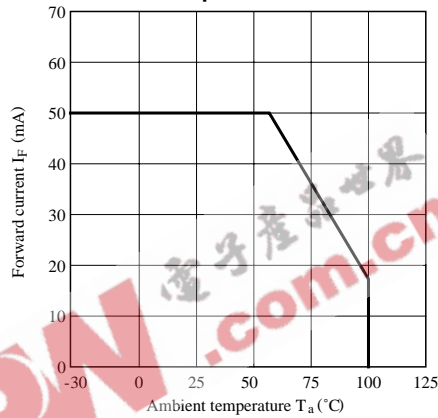


Fig. 3 Forward Current vs. Forward Voltage

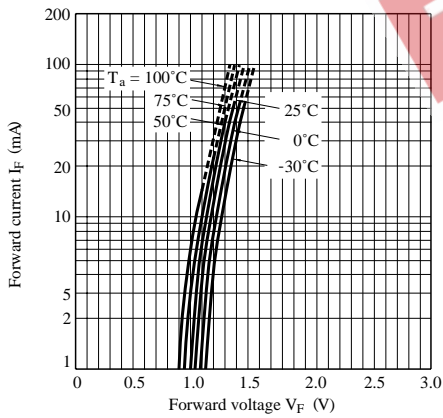


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

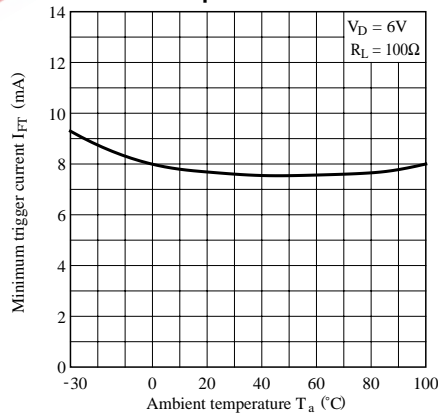


Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

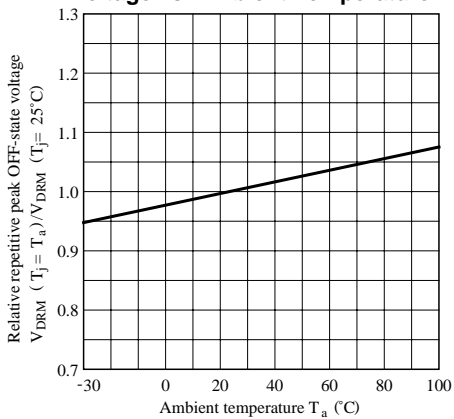


Fig. 6 ON-state Voltage vs. Ambient Temperature

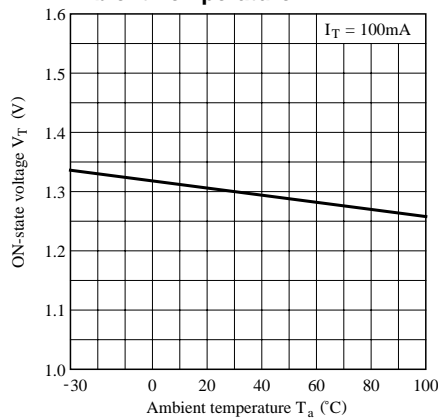


Fig. 7 Holding Current vs. Ambient Temperature

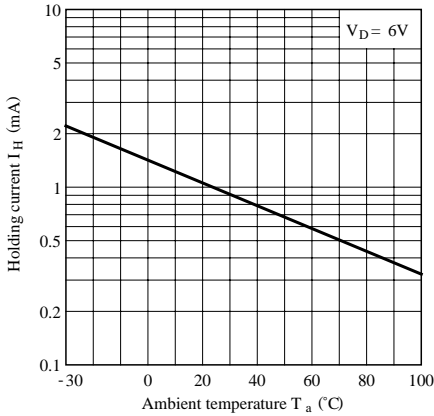


Fig. 8 Repetitive Peak OFF-state Current vs. OFF-state Voltage

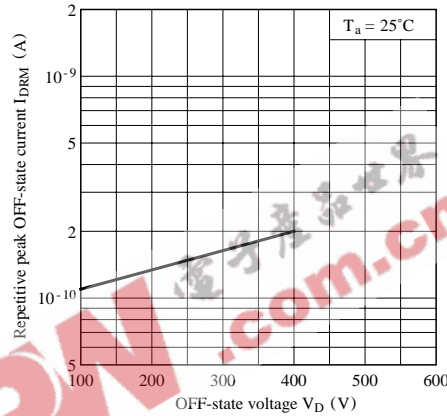


Fig. 9 Repetitive Peak OFF-state Current vs. Ambient temperature

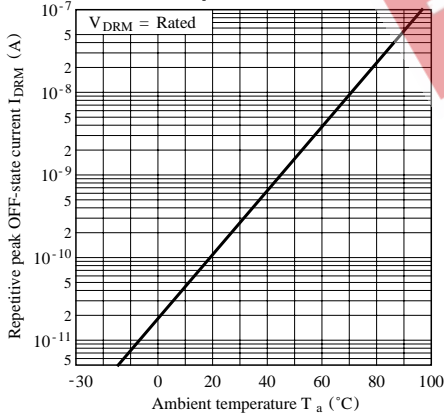


Fig.10 Turn-on Time vs. Forward Current

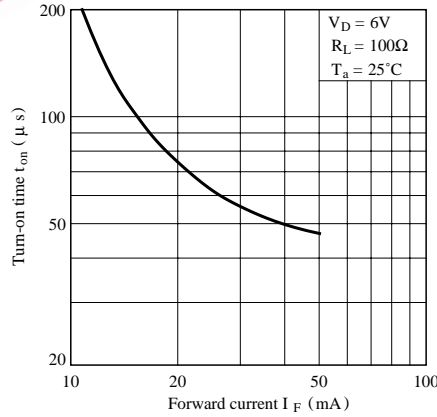
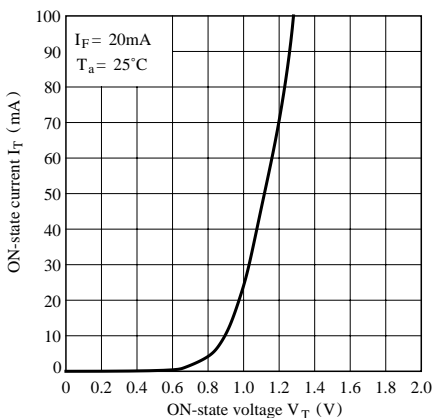
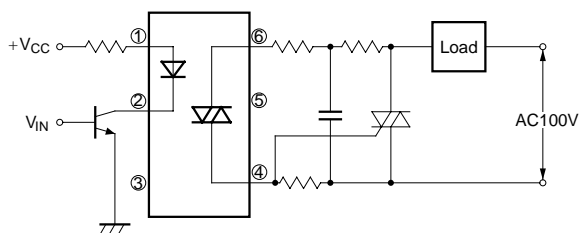


Fig.11 ON-state Current vs. ON-state Voltage



■ Basic Operation Circuit

Medium/High Power Triac Drive Circuit



Note) Please use on condition of the triac for power triggers.

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