

S11MD3 High Noise-reduction Type Phototriac Coupler

T-41-87

■ Features

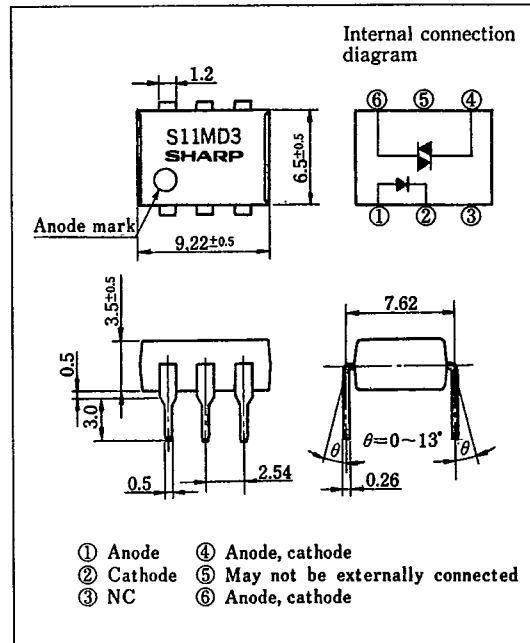
1. High critical rate of rise of off-state voltage (dv/dt: MIN. 100V/ μ s)
2. Low trigger current (I_{FT} : MAX. 10mA)
3. High repetitive peak off-state voltage (V_{DRM} : MIN. 400V)
4. Isolation voltage between input and output V_{ISO} : 2,500Vrms
5. UL recognized, file No. E64380

■ Applications

1. On-off operation for a low power load
2. For triggering high power triac

■ Outline Dimensions

(Unit : mm)



6

■ Absolute Maximum Ratings

(Ta=25°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 | mArms |
| | *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} | 2,500 | Vrms |
| | Operating temperature | T_{opr} | -30 ~ +100 | °C |
| Storage temperature | T_{stg} | -55 ~ +125 | °C | |
| *3 Soldering temperature | T_{sol} | 260 | °C | |

*1 50Hz, sine wave

*2 RH=40~60%, AC for 1 minute

*3 For 10 seconds

SHARP

441

■ 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 | $I_T = 100\text{mA}$ | — | 1.3 | 2.0 | V |
| | Holding current | I_H | $V_D = 6\text{V}$ | 0.5 | 1 | 3.5 | mA |
| | Critical rate of rise of off-state voltage | dv/dt | $V_{DRM} = 1/\sqrt{2} \text{ Rated}$ | 100 | — | — | $\text{V}/\mu\text{s}$ |
| Transfer characteristics | Minimum trigger current | I_{FT} | $V_D = 6\text{V}, R_L = 100\Omega$ | — | — | 10 | mA |
| | Isolation resistance | R_{ISO} | DC 500V, RH=40~60% | 5×10^{10} | 10^{11} | — | Ω |
| | Turn-on time | t_{on} | $V_D = 6\text{V}, I_F = 20\text{mA}, R_L = 100\Omega$ | — | 40 | 100 | μs |

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

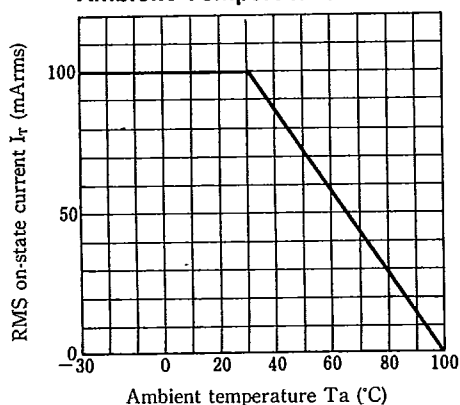


Fig. 2 Forward Current vs. Ambient Temperature

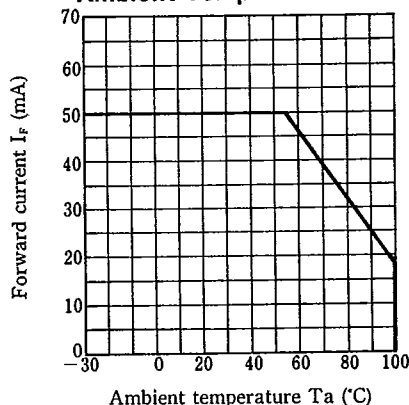


Fig. 3 Forward Current vs. Forward Voltage

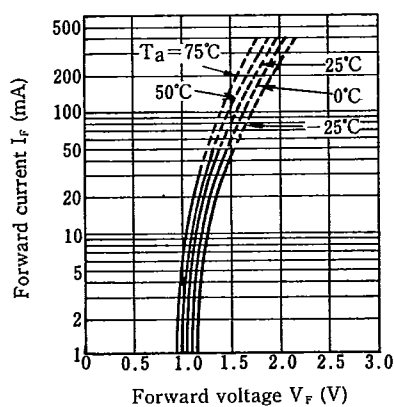


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

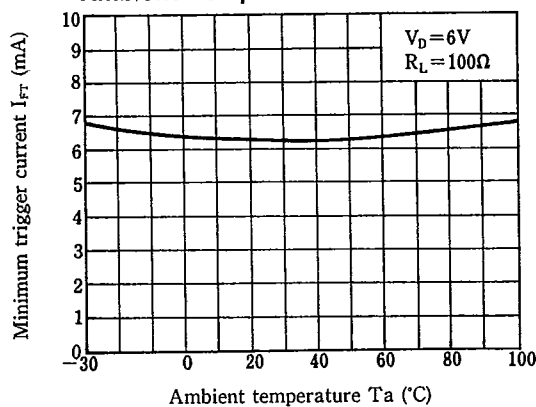


Fig. 5 Relative Repetitive Peak Off-state Voltage vs. Ambient Temperature

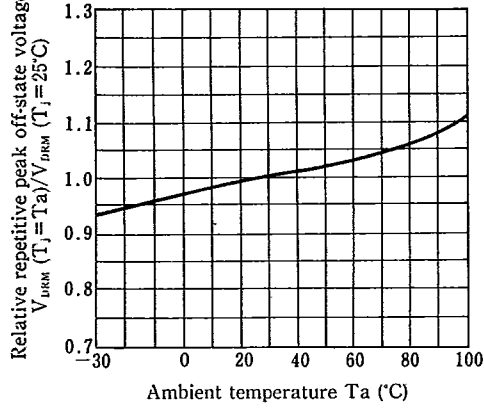


Fig. 6 On-state Voltage vs. Ambient Temperature

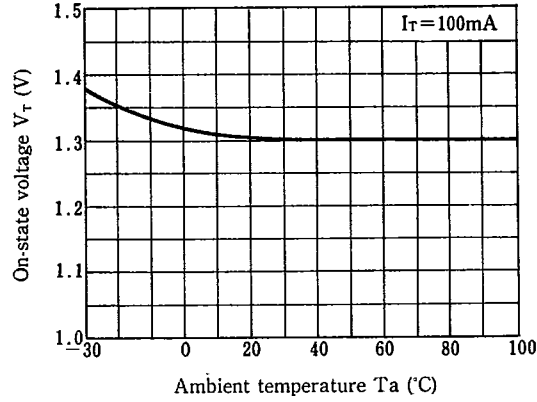


Fig. 7 Holding Current vs. Ambient Temperature

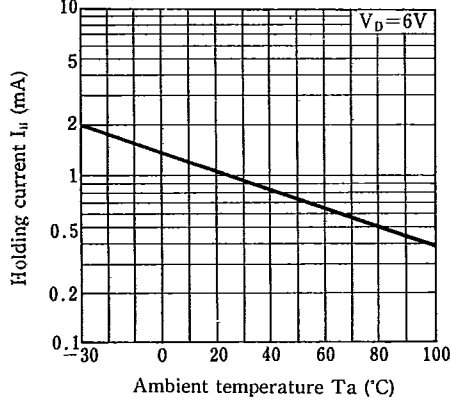


Fig. 8 Repetitive Peak Off-state Current vs. Off-state Voltage

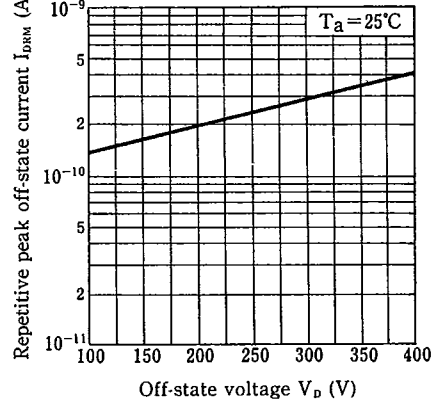


Fig. 9 Repetitive Peak Off-state Current vs. Ambient Temperature

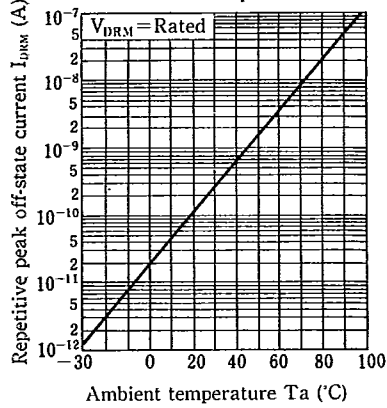


Fig. 10 Turn-on Time vs. Forward Current

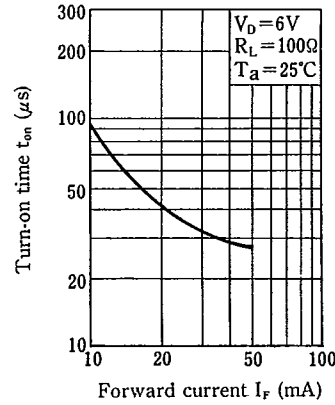
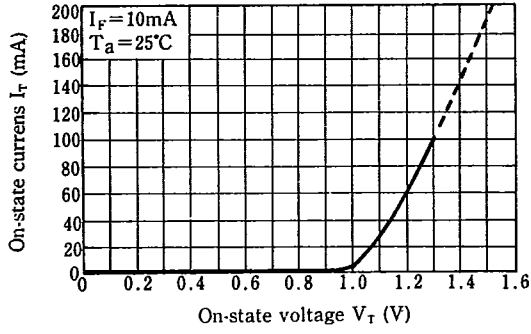


Fig. 11 On-state Current vs. On-state Voltage

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Basic Operation Circuit

High Power Triac Drive Circuit

