

S21MD3V

High Noise Resistance Type Phototriac Coupler

- * Lead forming type and taping reel type are also available. (S21MD3W/S21MD3P)
- ** TÜV (VDE0884) approved type is also available as an option.

■ Features

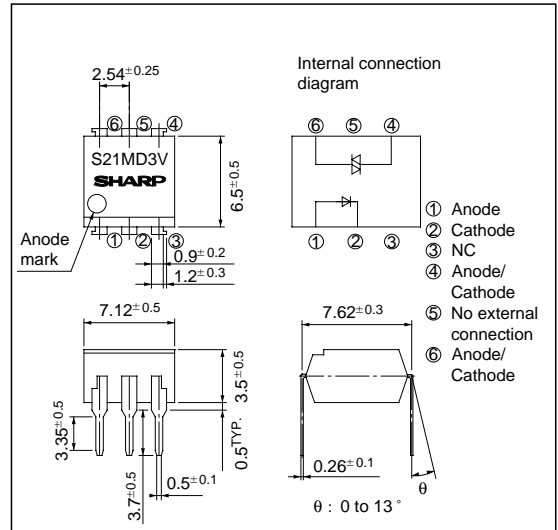
1. High critical rate of rise of OFF-state voltage
(dv/dt : MIN. 500V/ μ s)
 2. High repetitive peak OFF-state voltage
(V_{DRM} : MIN. 600V)
 3. Isolation voltage between input and output
 V_{iso} : 5 000Vrms
 4. UL recognized, file No.E64380 (S21MD3V / S21MD3W)
- * **S21MD3V** is for 200V line.

■ 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}	600	V
*2 Isolation voltage		V_{iso}	5 000	V _{rms}
Operating temperature		T_{opr}	- 30 to + 100	°C
Storage temperature		T_{stg}	- 55 to + 125	°C
*3 Soldering temperature		T_{sol}	260	°C

*1 Sine wave

*2 40 to 60% , RH

AC 1 minute, $f = 60\text{Hz}$

*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	$I_F = 30\text{mA}$	-	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	$I_T = 100\text{mA}$	-	1.7	2.5	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	$V_{DRM} = 1/\sqrt{2}$ Rated	500	-	-	$\text{V}/\mu\text{s}$
Transfer characteristics	Minimum trigger current	I_{FT}	$V_D = 6\text{V}, R_L = 100\Omega$	-	-	15	mA
	Isolation resistance	R_{ISO}	DC500V, 40 to 60% RH	5×10^{10}	10^{11}	-	Ω
	Turn-on time	t_{on}	$V_D = 6\text{V}, I_F = 30\text{mA}, R_L = 100\Omega$	-	100	250	μs

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

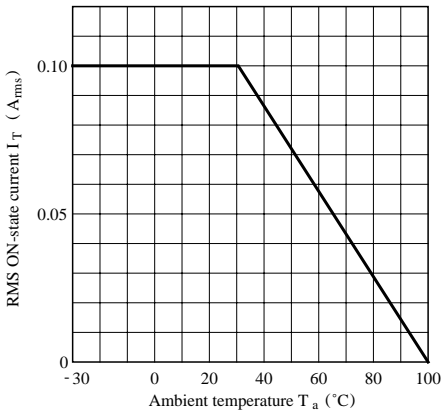


Fig. 2 Forward Current vs. Ambient Temperature

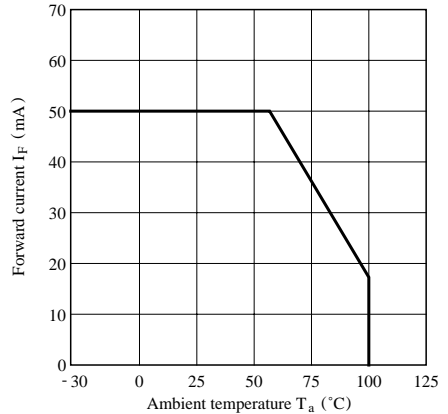


Fig. 3 Forward Current vs. Forward Voltage

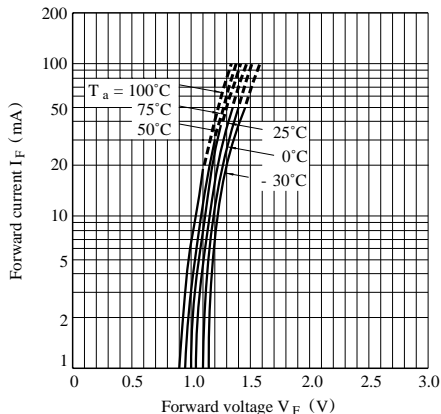


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

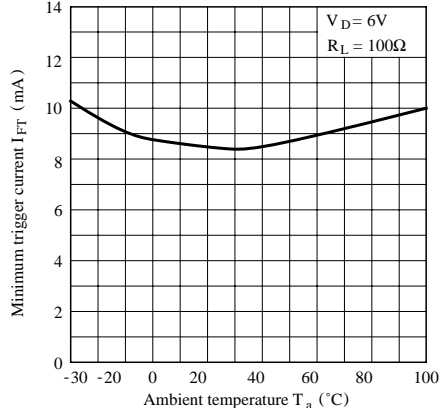


Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

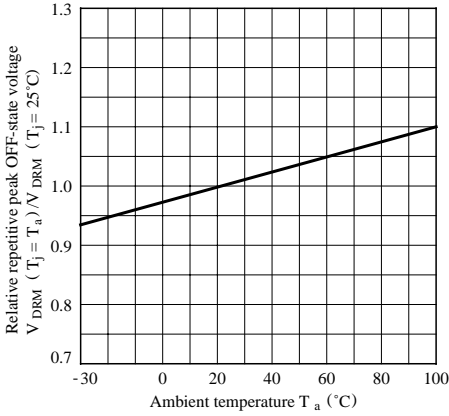


Fig. 6 ON-state Voltage vs. Ambient Temperature

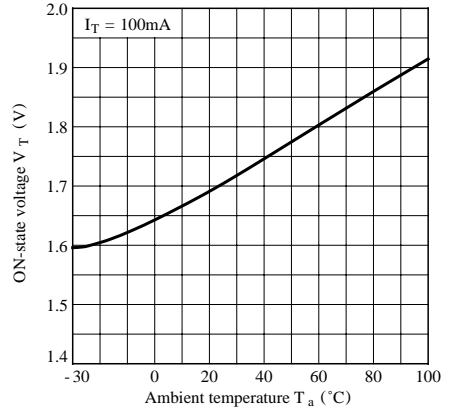


Fig. 7 Holding Current vs. Ambient Temperature

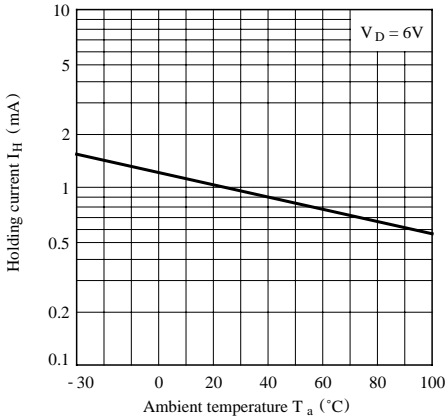


Fig. 8 Repetitive Peak OFF-state Current vs OFF-state Voltage

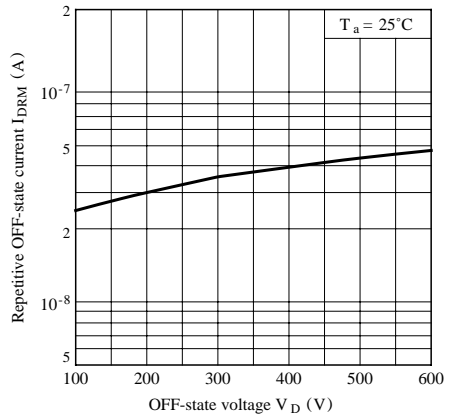


Fig. 9 Repetitive Peak OFF-state Current vs. Ambient Temperature

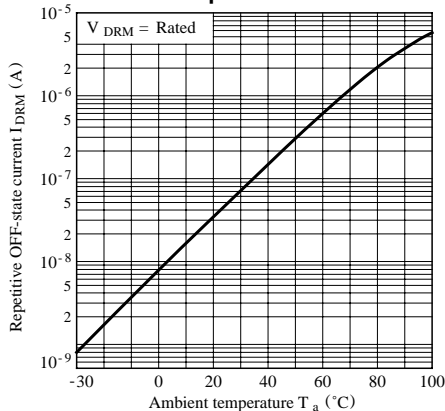


Fig.10 Turn-on Time vs. Forward Current

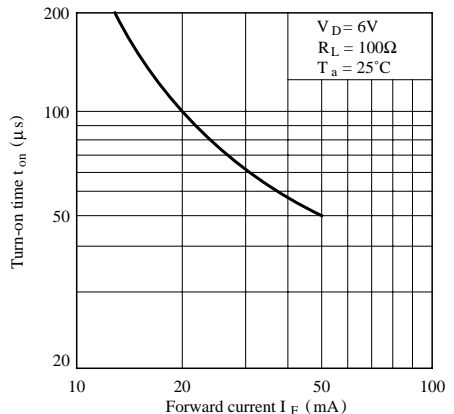
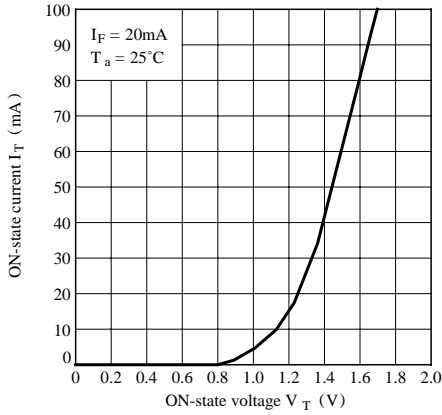
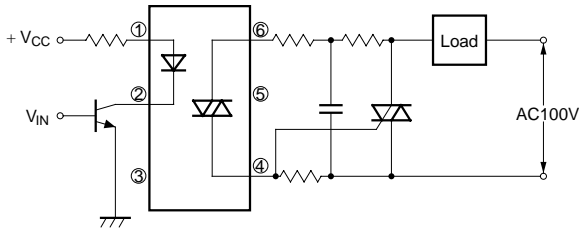


Fig.11 ON-state Current vs. ON-state Voltage



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).