

S21MD10T

High Speed, High Sensitivity Type Phototriac Coupler

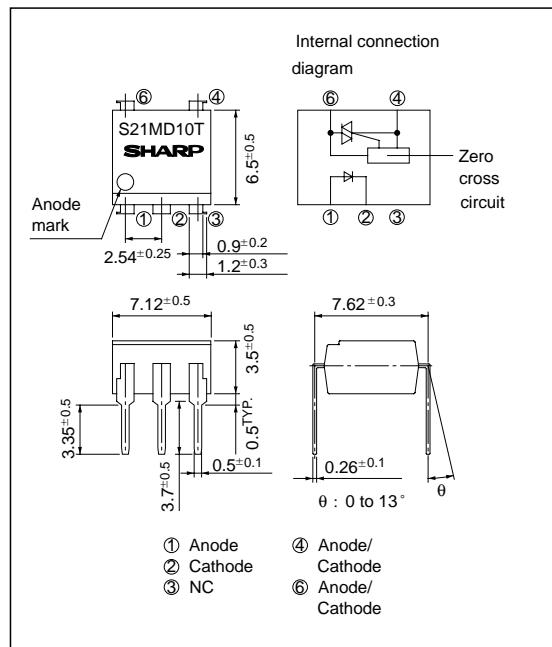
* TÜV (DIN-VDE0884) approved type is also available as an option.

■ Features

1. High sensitivity (I_{FT} : MAX. 5mA)
2. High speed (Turn-on time : MAX. 20μs)
3. Long dielectric distance between AC lines (3.9mm)
4. High isolation voltage between input and output (Viso : 5 000Vrms)
5. Recognized by UL, file No. E64380

■ Outline Dimensions

(Unit : mm)



■ Applications

1. For triggering medium/high power triac

■ 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	0.1	A _{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 50Hz sine wave

*2 40 to 60% RH, AC for 1 minute, f = 60Hz

*3 For 10 seconds

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V _F	I _F = 20mA	-	1.2	1.4	V
	Reverse current	I _R	V _R = 3V	-	-	10 ⁻⁵	A
Output	Repetitive peak OFF-state current	I _{DRM}	V _{DRM} = Rated	-	-	10 ⁻⁶	A
	ON-state voltage	V _T	I _T = 0.1A	-	2.0	3.0	V
	Holding current	I _H	V _D = 6V	0.1	0.5	3.5	mA
	Critical rate of rise of OFF-state voltage	dV/dt	V _{DRM} = (1/4 $\sqrt{2}$) • Rated	100	-	-	V/ μ s
	Zero-cross voltage	V _{OX}	Resistance load, I _F = 10mA	-	-	35	V
Transfer-characteristics	Minimum trigger current	I _{FT}	V _D = 6V, R _L = 100Ω	-	-	5	mA
	Isolation resistance	R _{ISO}	DC500V, 40 to 60% RH	5 x 10 ¹⁰	10 ¹¹	-	Ω
	Turn-on time	t _{on}	V _D = 6V, R _L = 100Ω, I _F = 20mA	-	-	20	μs

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

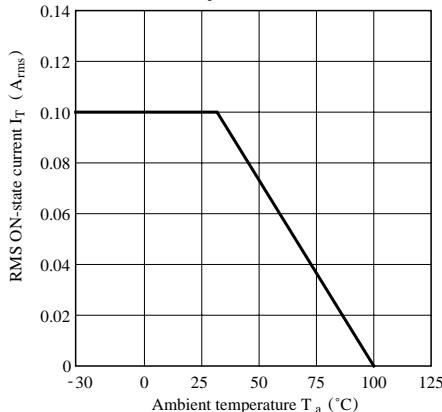


Fig. 2 Forward Current vs. Ambient Temperature

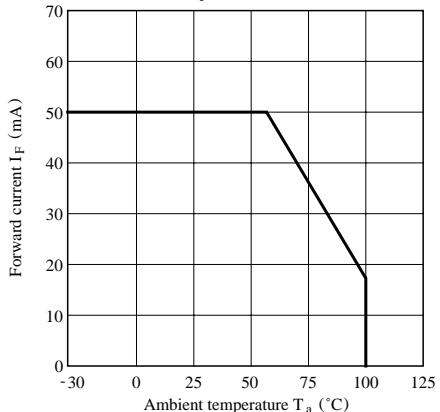


Fig. 3 Forward Current vs. Forward Voltage

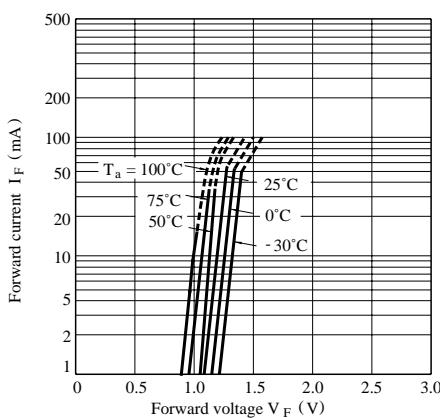


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

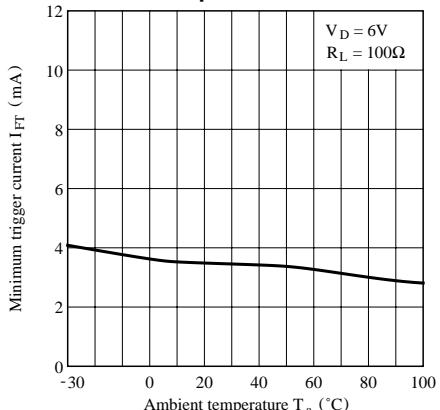


Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

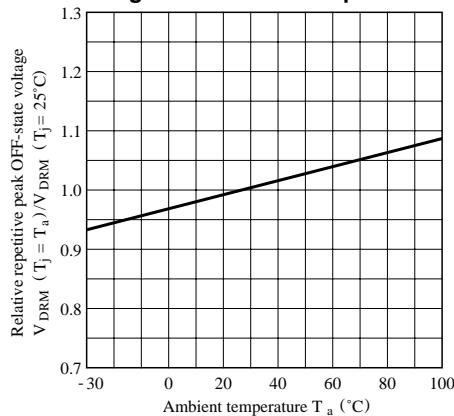


Fig. 6 ON-state Voltage vs. Ambient Temperature

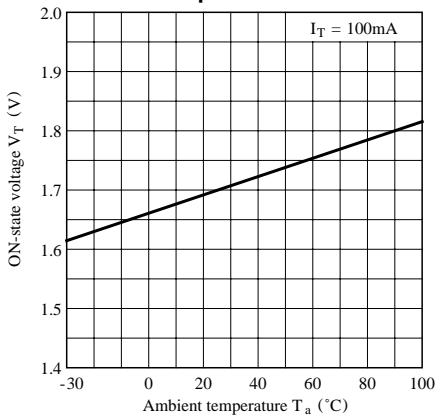


Fig. 7 Holding Current vs. Ambient Temperature

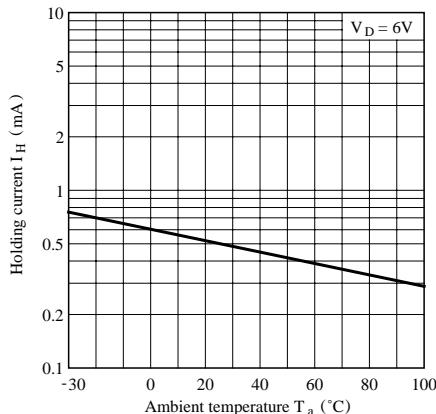


Fig. 8 Repetitive Peak OFF-State Current vs. OFF-State Voltage

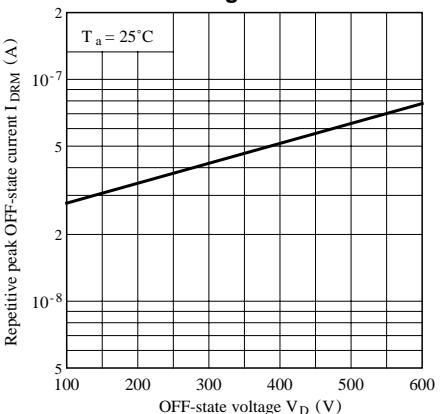


Fig. 9 Repetitive Peak OFF-state Current vs. Ambient Temperature

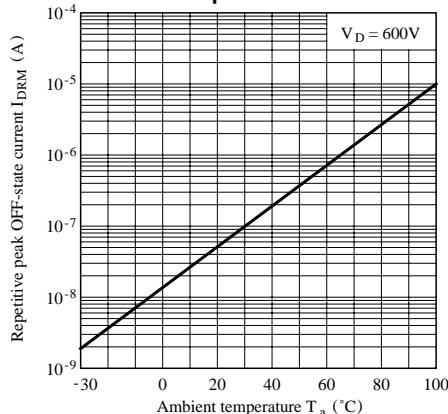


Fig. 10 Zero-cross Voltage vs. Ambient Temperature

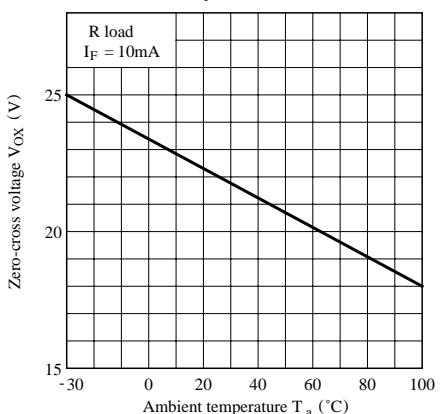
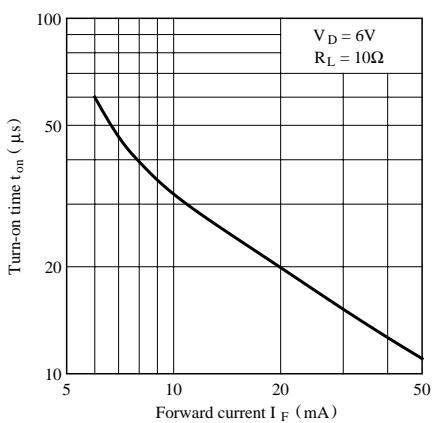
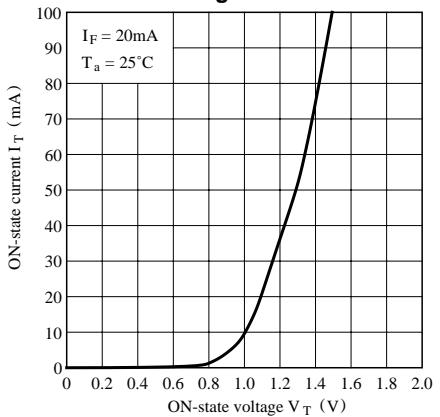
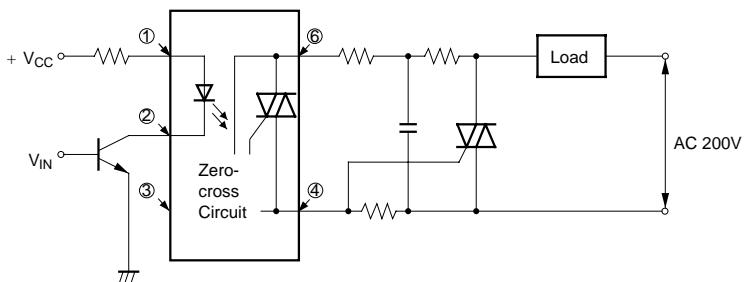


Fig.11 Turn-on Time vs. Forward Current**Fig.12 ON-state Current vs. ON-state Voltage**

■ Basic Operation Circuit



- Please refer to the chapter “Precautions for Use”