

# PC3SD12NTZA

## Phototriac Coupler for Triggering

### ■ Features

1. Isolation voltage between input and output ( $V_{iso(rms)}$ ):5kV
  2. High critical rate of rise of OFF-state voltage  
( $dV/dt$ :MIN. 1 000V/ $\mu$ s)
  3. Recognized by UL, file No. E64380
- ※ PC3SD12NTZA is for 200V line

### ■ Applications

1. Home appliances
2. OA equipment, FA equipment
3. SSRs

### ■ Absolute Maximum Ratings (Ta=25°C)

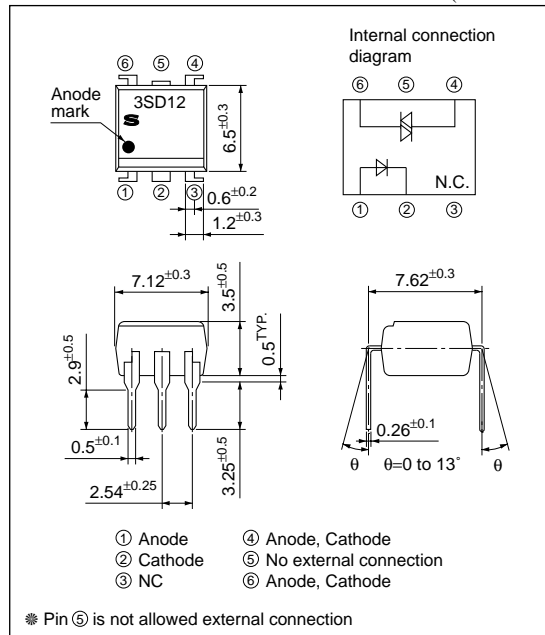
	Parameter	Symbol	Rating	Unit
Input	*1 Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	6	V
Output	*1 RMS ON-state current	$I_T(rms)$	0.1	A
	Peak one cycle surge current	$I_{surge}$	1.2 (50Hz sine wave)	A
	Repetitive peak OFF-state voltage	$V_{DRM}$	600	V
	*2 Isolation voltage	$V_{iso(rms)}$	5	kV
	Operating temperature	$T_{opr}$	-30 to +100	°C
	Storage temperature	$T_{stg}$	-55 to +125	°C
	Soldering temperature	$T_{sol}$	260 (For 10s)	°C

\*1 The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig. 1, 2

\*2 AC for 1 min, 40 to 60%RH,  $f=60$ Hz

### ■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

(Ta=25°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	$I_{DRM}$	$V_D=V_{DRM}$	—	—	$10^{-6}$	A
	ON-state voltage	$V_T$	$I_T=0.1\text{A}$	—	—	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	$V_D=1/\sqrt{2} \cdot V_{DRM}$	1 000	2 000	—	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, 40 to 60%RH	$5 \times 10^{10}$	$10^{11}$	—	$\Omega$
	Turn-on time	$t_{on}$	$V_D=6\text{V}, R_L=100\Omega, I_F=20\text{mA}$	—	—	50	$\mu\text{s}$

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

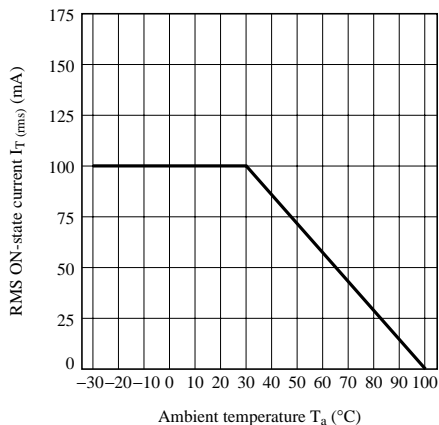


Fig.2 Forward Current vs. Ambient Temperature

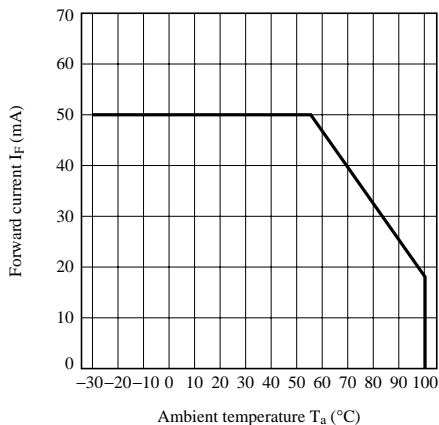


Fig.3 Forward Current vs. Forward Voltage

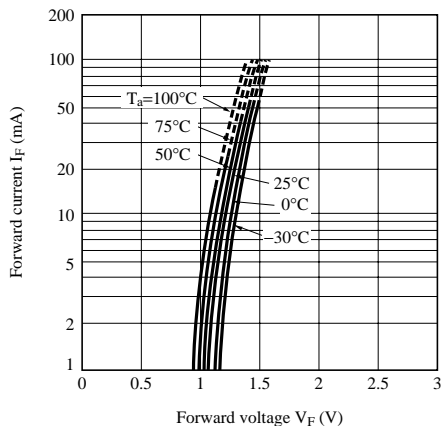
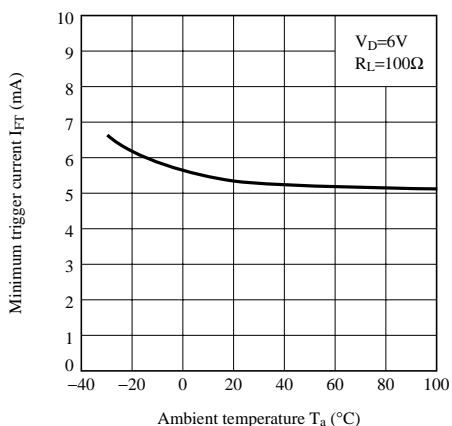
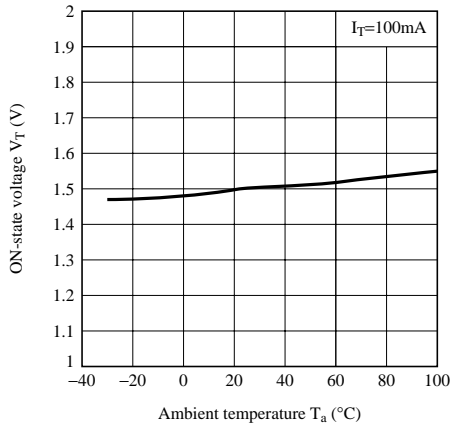


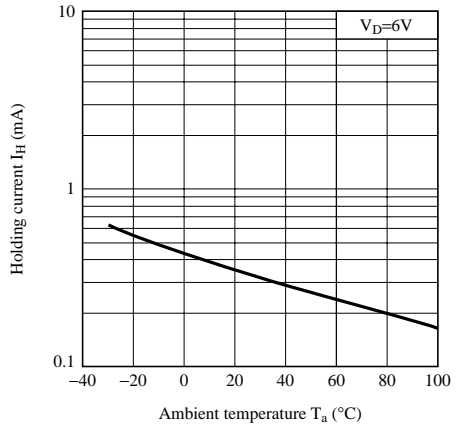
Fig.4 Minimum Trigger Current vs. Ambient Temperature



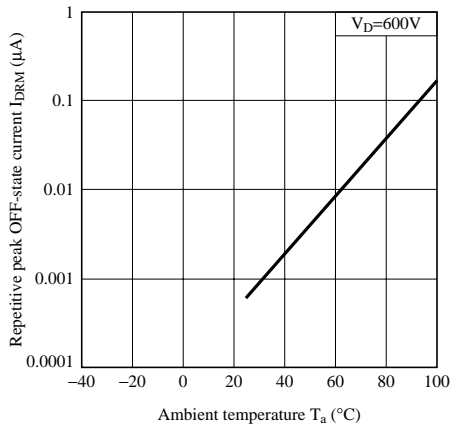
**Fig.5 A ON-state Voltage vs. Ambient Temperature**



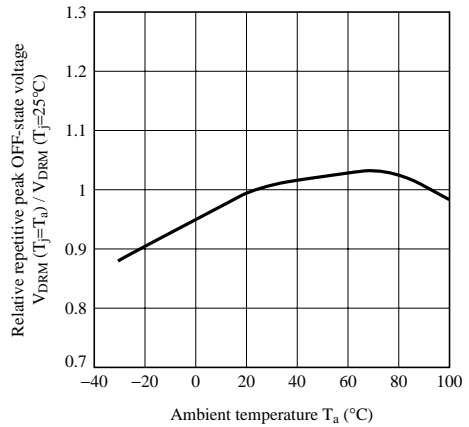
**Fig.6 Holding Current vs. Ambient Temperature**



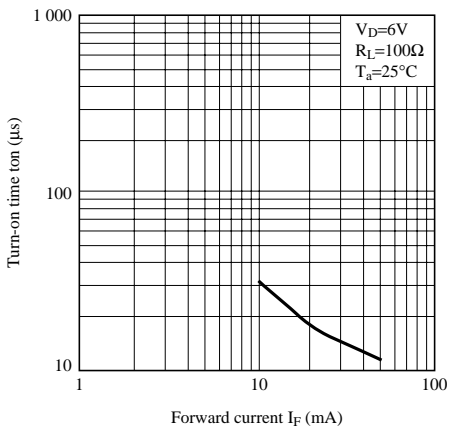
**Fig.7 Repetitive Peak OFF-state Current vs. Ambient Temperature**



**Fig.8 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature**



**Fig.9 Turn-on Time vs. Forward Current**



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