

PC3SD21NTZB Series

■ Features

1. Low zero-cross voltage ($V_{OX(MAX)}=20V$)
 2. Isolation voltage between input and output ($V_{iso(rms)}:5kV$)
 3. High critical rate of rise of OFF-state voltage
($dV/dt:MIN. 1\ 000V/\mu s$)
 4. Recognized by UL, file No. E64380
 5. VDE:Under application (optionally available)
- ※ **PC3SD21NTZB Series** are for 200V line

■ Applications

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

■ Model Line-up

Minimum trigger current ($I_{FT(MAX)}$)	for AC 200V line
7mA	PC3SD21NTZB
5mA	PC3SD21NTZC
3mA	PC3SD21NTZD

■ 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
	Operating temperature	T_{opr}	-30 to +100	°C
	Storage temperature	T_{stg}	-55 to +125	°C
	*2 Isolation voltage	$V_{iso(rms)}$	5	kV
	Soldering temperature	T_{sol}	260 (For 10s)	°C

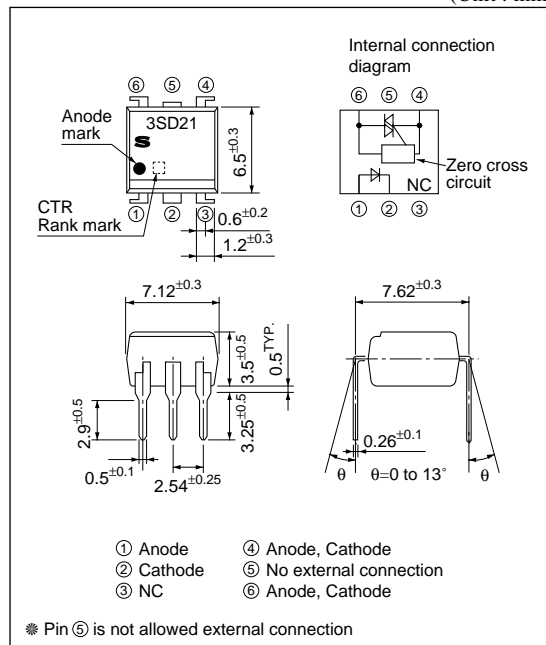
*1 The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig. 1, 2

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

Phototriac Coupler for Triggering

■ 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}	μA	
Output	Repetitive peak OFF-state current	I_{DRM}	$V_D=V_{DRM}$	–	–	10^{-6}	μA	
	ON-state voltage	V_T	$I_T=0.1\text{mA}$	–	–	2.5	V	
	Holding current	I_H	$V_D=4\text{V}$	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/ μs	
	Zero-cross voltage	PC3SD21NTZB PC3SD21NTZC PC3SD21NTZD	V_{OX}	Resistance load, $I_F=15\text{mA}$	–	–	20	V
Resistance load, $I_F=8\text{mA}$								
Transfer characteristics	Minimum trigger current	PC3SD21NTZB PC3SD21NTZC PC3SD21NTZD	I_{FT}	$V_D=4\text{V}$, $R_L=100\Omega$	–	–	7	mA
					–	–	5	
					–	–	3	
	Isolation resistance	R_{ISO}	DC=500V, 40 to 60%RH	5×10^{10}	1×10^{11}	–	Ω	
	Turn-on time	t_{on}	$V_D=4\text{V}$, $R_L=100\Omega$, $I_F=20\text{mA}$	–	–	50	μs	

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

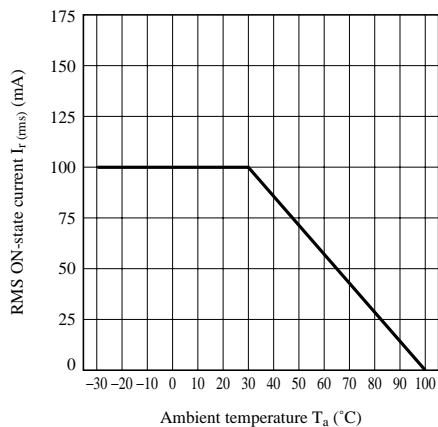


Fig.2 Forward Current vs. Ambient Temperature

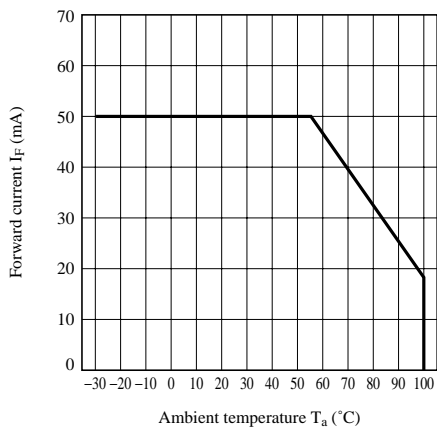


Fig.3 Forward Current vs. Forward Voltage (PC3SD21NTZB)

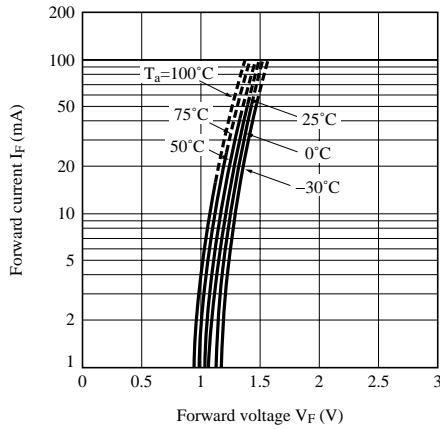


Fig.4 Forward Current vs. Forward Voltage (PC3SD21NTZC, PC3SD21NTZD)

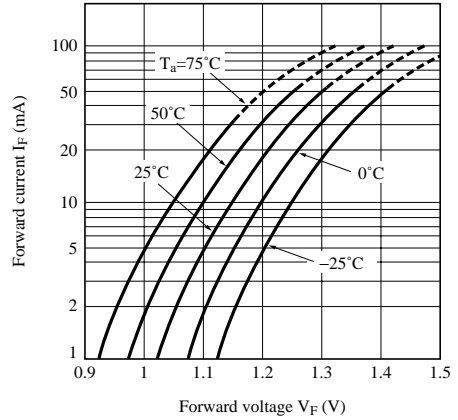


Fig.5 Minimum Trigger Current vs. Ambient Temperature (PC3SD21NTZB)

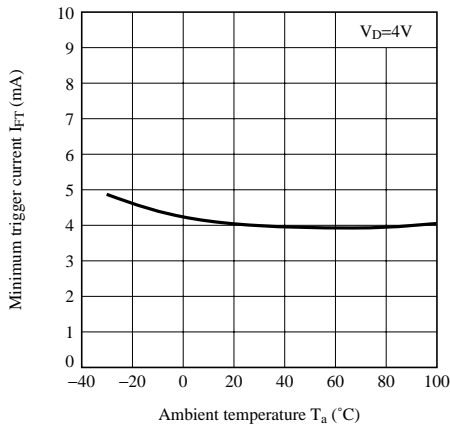


Fig.6 Minimum Trigger Current vs. Ambient Temperature (PC3SD21NTZC, PC3SD21NTZD)

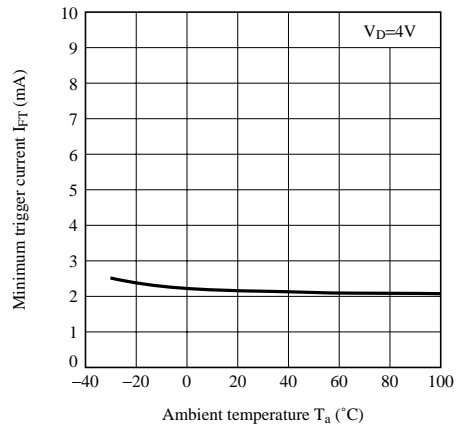


Fig.7 ON-state Voltage vs. Ambient Temperature

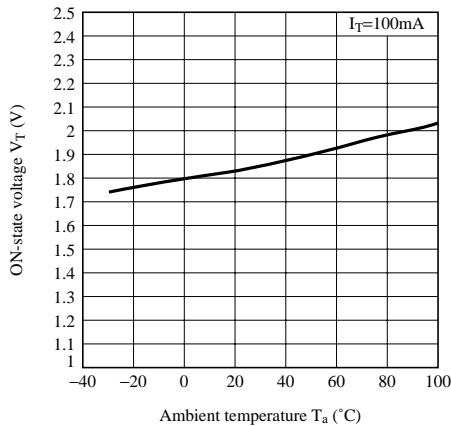


Fig.8 Holding Current vs. Ambient Temperature

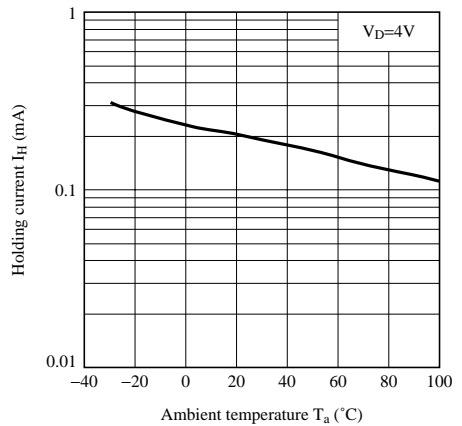


Fig.9 Repetitive Peak OFF-state Current vs. Ambient Temperature

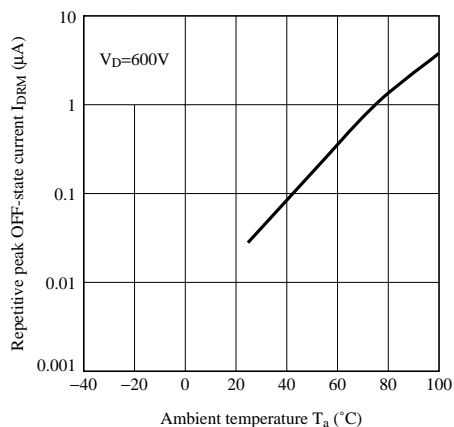


Fig.10 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

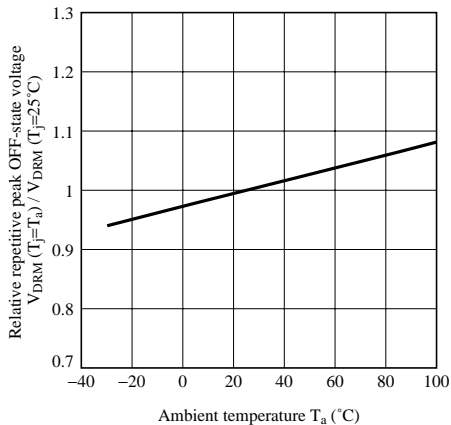


Fig.11 Turn-on Time vs. Forward Current (PC3SD21NTZB)

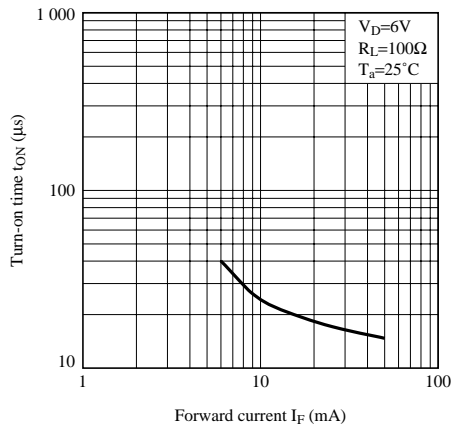


Fig.12 Turn-on Time vs. Forward Current (PC3SD21NTZC, PC3SD21NTZD)

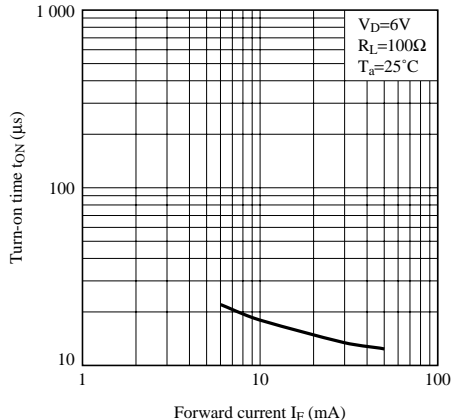


Fig.13 Zero-cross Voltage vs. Ambient Temperature (PC3SD21NTZB)

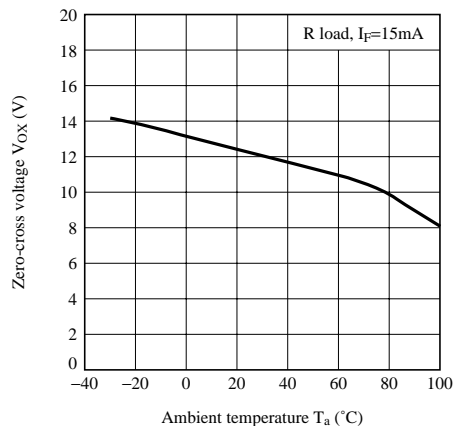
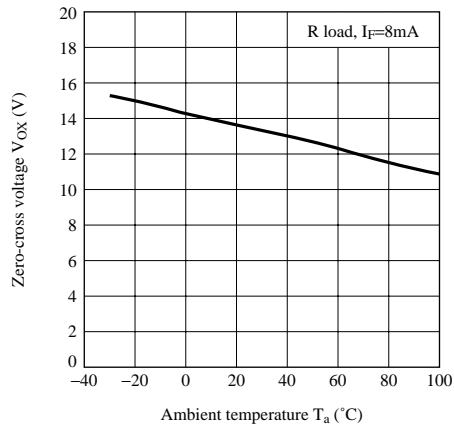


Fig.14 Zero-cross Voltage vs. Ambient Temperature (PC3SD21NTZC, PC3SD21NTZD)



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