

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/ μs)
4. Recognized by UL, file No. E64380
5. Approved by VDE0884, file No.127413 (available as an option)

※ **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 ($T_a=25^{\circ}C$)

	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	$^{\circ}C$
	Storage temperature	T_{stg}	-55 to +125	$^{\circ}C$
	*2 Isolation voltage	$V_{iso(rms)}$	5	kV
	Soldering temperature	T_{sol}	260 (For 10s)	$^{\circ}C$

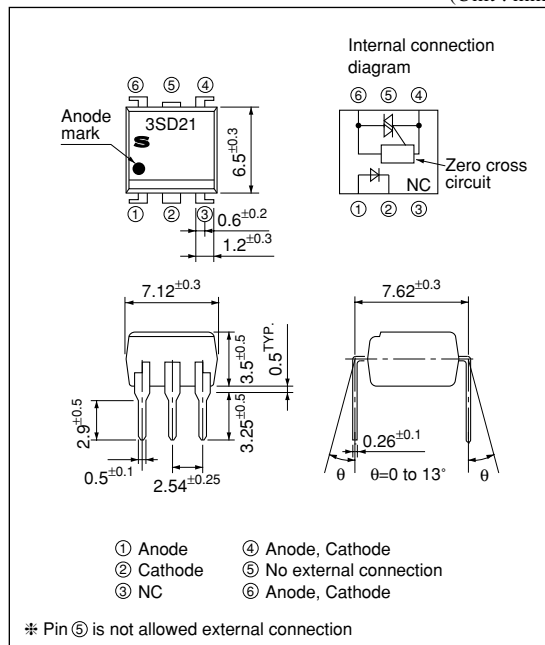
*1 The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig.1, 2

*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 =20mA	—	1.2	1.4	V
	Reverse current		I _R	V _R =3V	—	—	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 =0.1mA	—	—	2.5	V
	Holding current		I _H	V _D =4V	0.1	—	3.5	mA
	Critical rate of rise of OFF-state voltage		dV/dt	V _D =(1/√2) • V _{DRM}	1 000	2 000	—	V/μs
	Zero-cross voltage	PC3SD21NTZB	V _{OX}	Resistance load, I _F =15mA	—	—	20	V
		PC3SD21NTZC		Resistance load, I _F =8mA				
		PC3SD21NTZD						
Transfer charac- teristics	Minimum trigger current	PC3SD21NTZB	I _{FT}	V _D =4V, R _L =100Ω	—	—	7	mA
		PC3SD21NTZC			—	—	5	
		PC3SD21NTZD			—	—	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 =4V, R _L =100Ω, I _F =20mA	—	—	50	μs

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

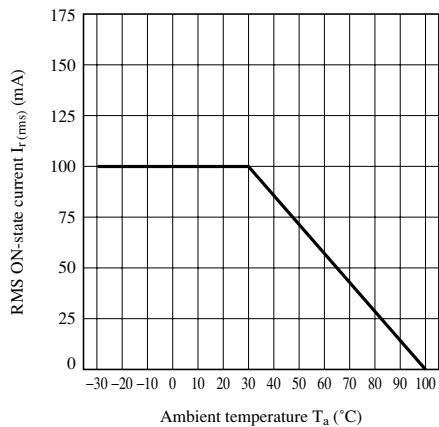


Fig.2 Forward Current vs. Ambient Temperature

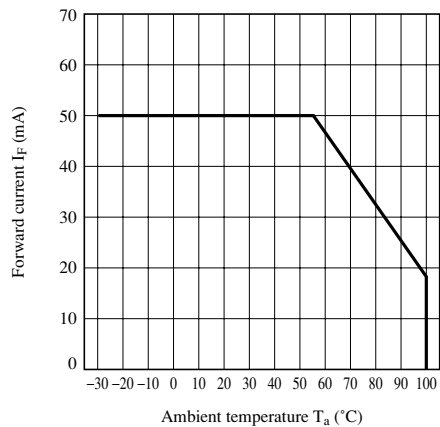


Fig.3 Forward Current vs. Forward Voltage (PC3SD21NTZB)

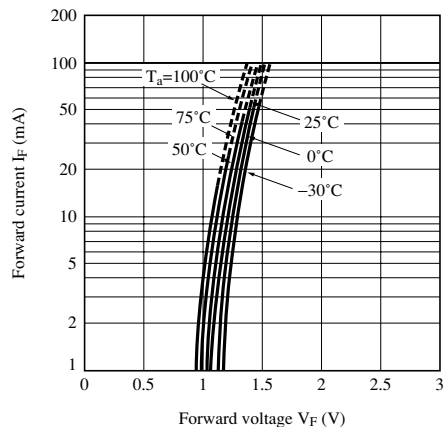


Fig.4 Forward Current vs. Forward Voltage (PC3SD21NTZC, PC3SD21NTZD)

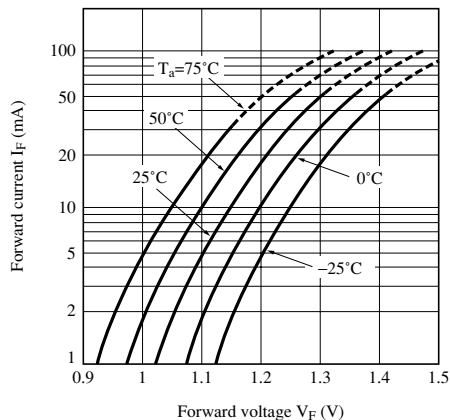


Fig.5 Minimum Trigger Current vs. Ambient Temperature (PC3SD21NTZB)

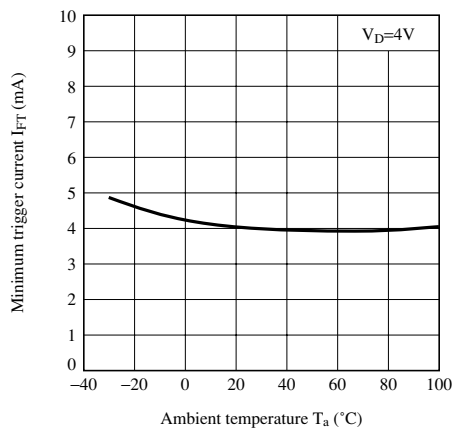


Fig.6 Minimum Trigger Current vs. Ambient Temperature (PC3SD21NTZC, PC3SD21NTZD)

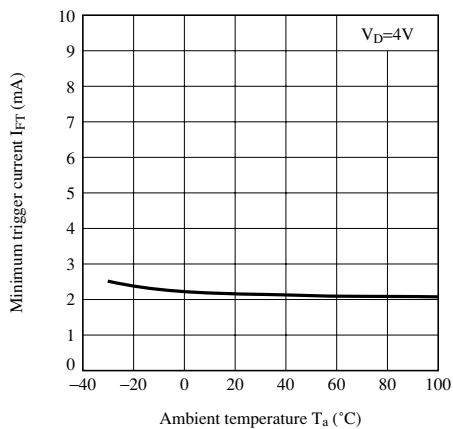


Fig.7 ON-state Voltage vs. Ambient Temperature

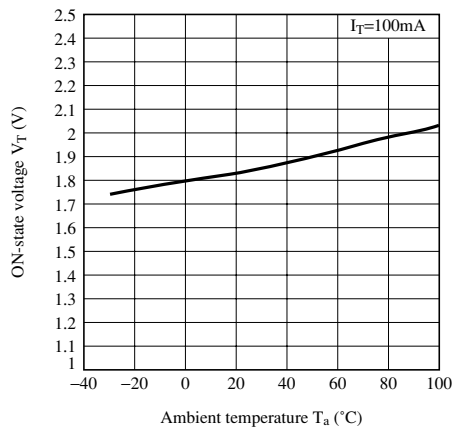


Fig.8 Holding Current vs. Ambient Temperature

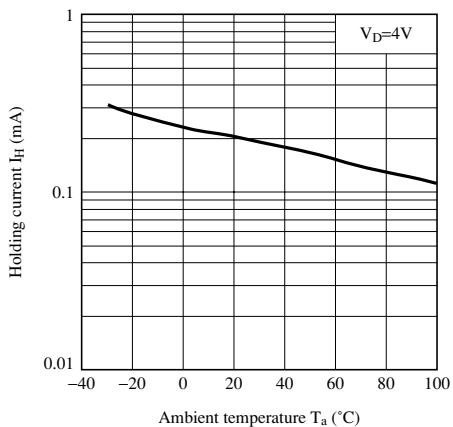


Fig.9 Repetitive Peak OFF-state Current vs. Ambient Temperature

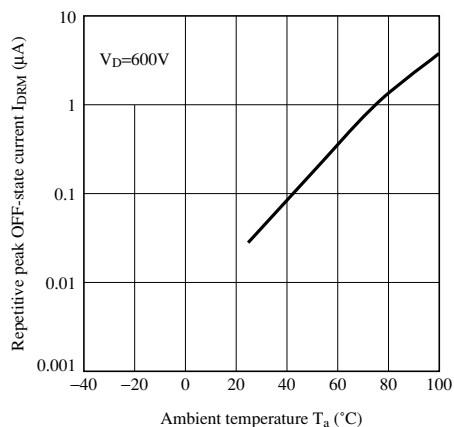


Fig.10 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

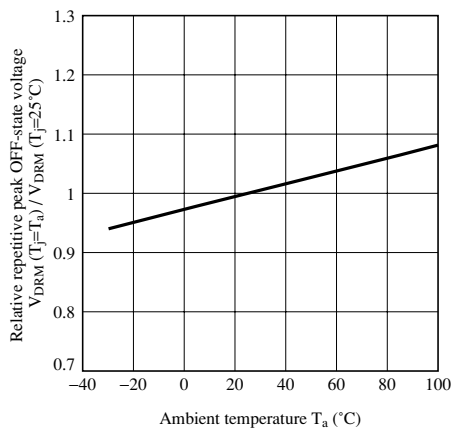


Fig.11 Turn-on Time vs. Forward Current (PC3SD21NTZB)

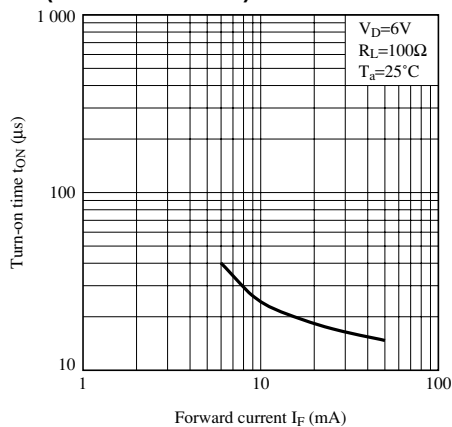


Fig.12 Turn-on Time vs. Forward Current (PC3SD21NTZC, PC3SD21NTZD)

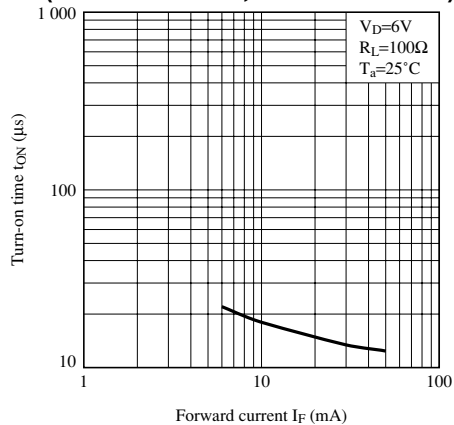


Fig.13 Zero-cross Voltage vs. Ambient Temperature (PC3SD21NTZB)

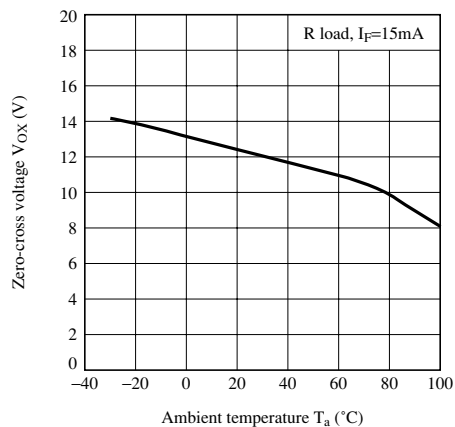
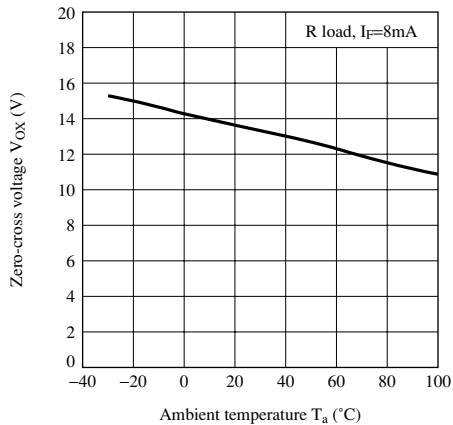


Fig.14 Zero-cross Voltage vs. Ambient Temperature (PC3SD21NTZC, PC3SD21NTZD)



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