

# PC3SF21YVZA/ PC3SF21YVZB

## ■ Features

1. Low zero-cross voltage ( $V_{OXI(MAX.)}=20V$ )
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. Internal isolation distance (0.4mm or more)
5. Recognized by UL (File No. E64380)  
Approved by VDE (VDE0884, File No.127413)  
Approved by BSI (BS415, File No.6690,  
BS7002, File No.7421)  
Approved by SEMKO (File No.0033029/01-04)  
Approved by DEMKO (File No.310107-01)  
Approved by FIMKO (File No.15795)

## ■ Applications

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

## ■ Model Line-up

Minimum trigger current ( $I_{FT(MAX.)}$ )	for AC 200V line
10mA	<b>PC3SF21YVZA</b>
7mA	<b>PC3SF21YVZB</b>

## ■ 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	$V_{iso(rms)}$	5.0	kV	
Soldering temperature	$T_{sol}$	260 (For 10s)	°C	

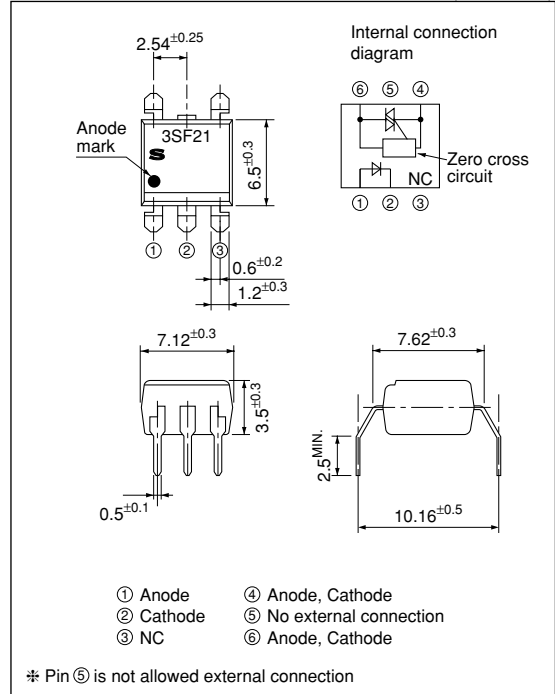
\*1 The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig. 1, 2

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

## Reinforced Insulation Type 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 <sub>F</sub>	I <sub>F</sub> =20mA	—	1.2	1.4	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =3V	—	—	10 <sup>-5</sup>	A
Output	Repetitive peak OFF-state current	I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub>	—	—	10 <sup>-6</sup>	A
	ON-state voltage	V <sub>T</sub>	I <sub>T</sub> =0.1A	—	—	2.5	V
	Holding current	I <sub>H</sub>	V <sub>D</sub> =4V	0.1	—	3.5	mA
	Critical rate of rise of OFF-state voltage	dV/dt	V <sub>D</sub> =1/√2 · V <sub>DRM</sub>	1 000	2 000	—	V/μs
	Zero-cross voltage	V <sub>OX</sub>	Resistance load, I <sub>F</sub> =15mA	—	—	20	V
Transfer characteristics	Minimum trigger current	PC3SF21YVZA	V <sub>D</sub> =4V, R <sub>L</sub> =100Ω	—	—	10	mA
		PC3SF21YVZB		—	—	7	
	Isolation resistance	R <sub>ISO</sub>	DC=500V, 40 to 60%RH	5×10 <sup>10</sup>	10 <sup>11</sup>	—	Ω
	Turn-on time	t <sub>on</sub>	V <sub>D</sub> =4V, R <sub>L</sub> =100Ω, I <sub>F</sub> =20mA	—	—	50	μs

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

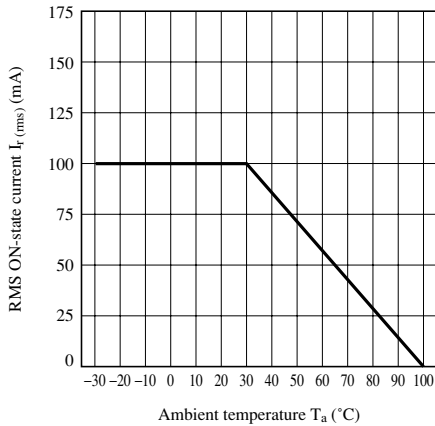


Fig.2 Forward Current vs. Ambient Temperature

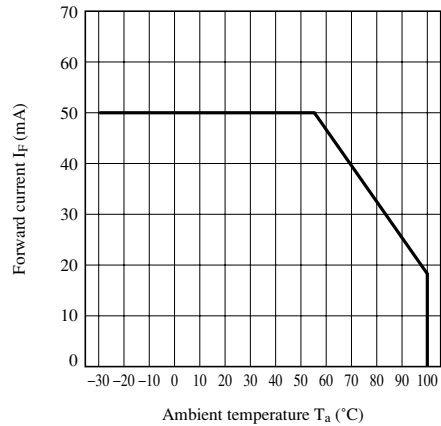


Fig.3 Forward Current vs. Forward Voltage

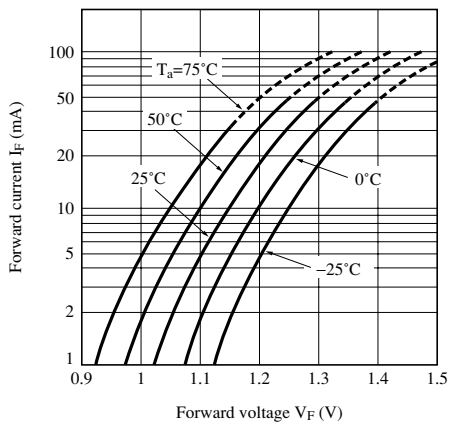
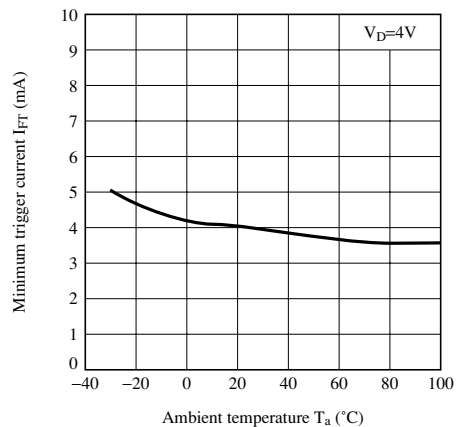
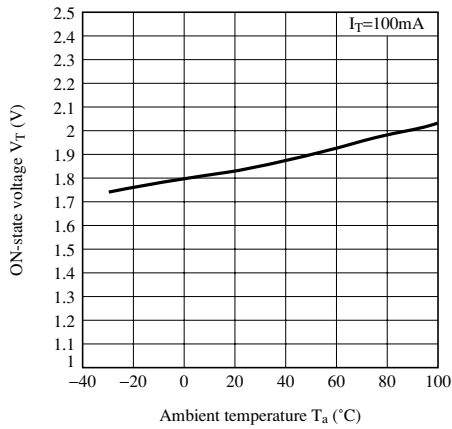


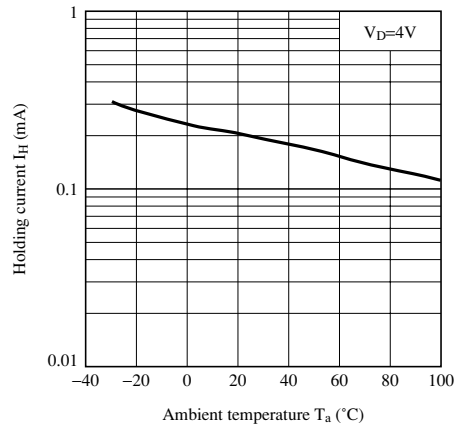
Fig.4 Minimum Trigger Current vs. Ambient Temperature



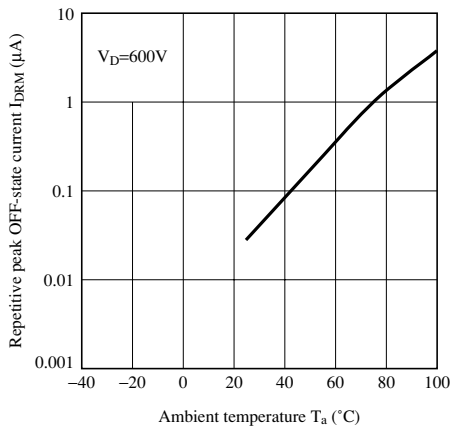
**Fig.5 ON-state Voltage vs. Ambient Temperature**



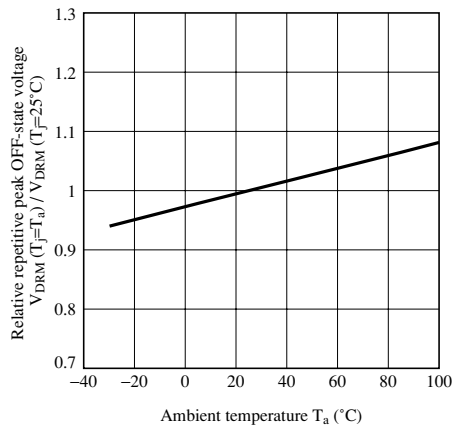
**Fig.6 Holding Current vs. Ambient Temperature**



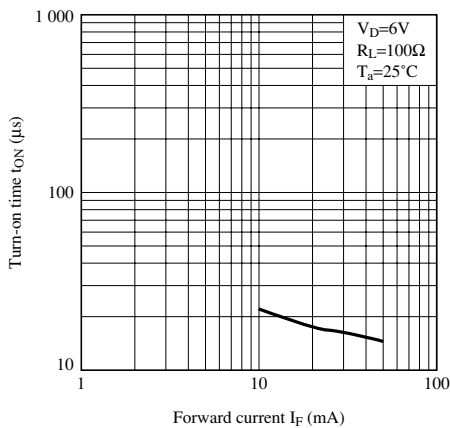
**Fig.7 Repetitive Peak OFF-state Current vs. Ambient Temperature**



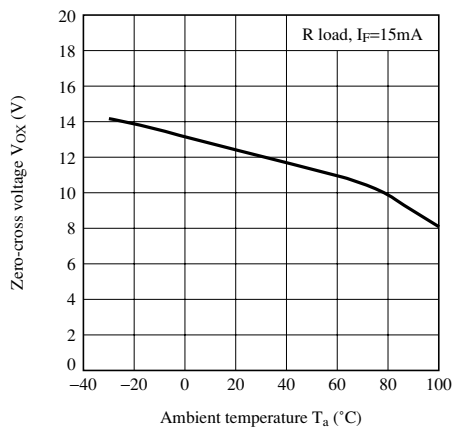
**Fig.8 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature**



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



**Fig.10 Zero-cross Voltage vs. Ambient Temperature**



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