PC3SF21YVZA/ PC3SF21YVZB

Reinforced Insulation Type Phototriac Coupler for Triggering

■ 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. Internal isolation distance (0.4mm or more)
5. Recognized by UL, file No. E64380
   VDE, BSI, SEMKO, EI:Under application

■ Applications

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

■ Model Line-up

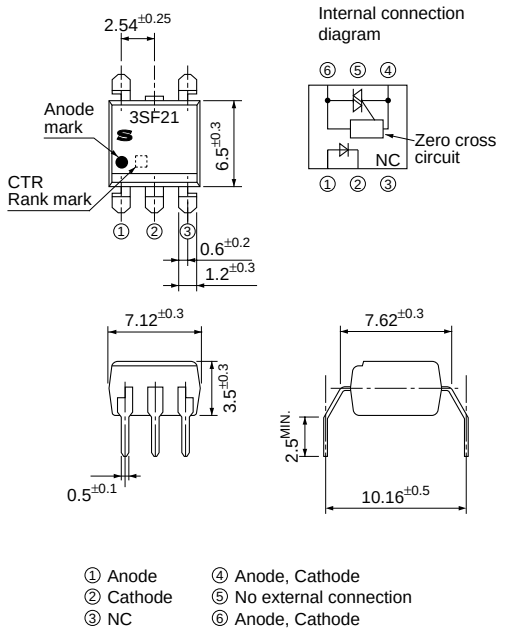
Minimum trigger current ($I_{FT[MAX.]}$)	for AC 200V line
10mA	**PC3SF21YVZA**
7mA	**PC3SF21YVZB**

■ 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

■ Outline Dimensions (Unit : mm)



① Anode ④ Anode, Cathode
② Cathode ⑤ No external connection
③ NC ⑥ Anode, Cathode

※ Pin ⑤ is not allowed external connection

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Internet Internet address for Electronic Components Group http://www.sharp.co.jp/ecg/

■ 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_D=V_{DRM}	–	–	10^{-6}	A
	ON-state voltage		V_T	I_T=0.1A	–	–	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/$\sqrt{2}$ • V_{DRM}	1 000	2 000	–	V/μs
	Zero-cross voltage		V_{OX}	Resistance load, I_F=15mA	–	–	20	V
Transfer characteristics	Minimum trigger current	PC3SF21YVZA	I_{FT}	V_D=4V, R_L=100Ω	–	–	10	mA
		PC3SF21YVZB			–	–	7	
	Isolation resistance		R_{ISO}	DC=500V, 40 to 60%RH	5×10^{10}	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

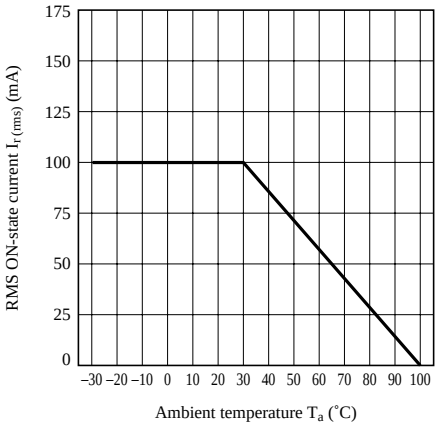


Fig.2 Forward Current vs. Ambient Temperature

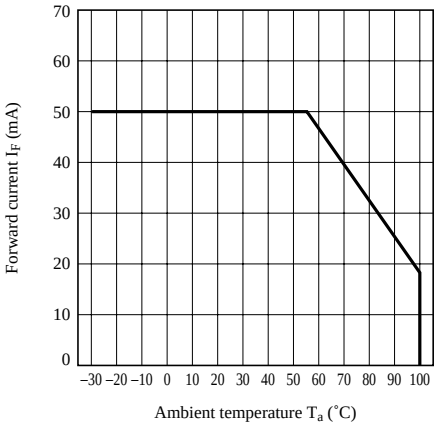


Fig.3 Forward Current vs. Forward Voltage

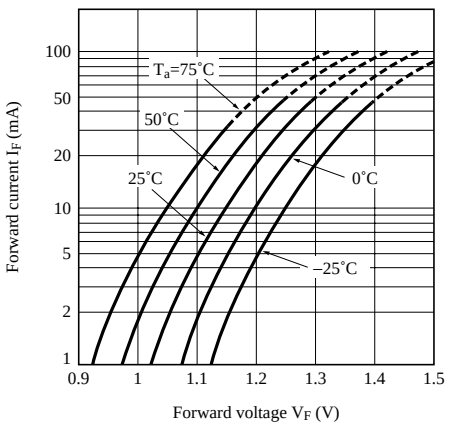


Fig.4 Minimum Trigger Current vs. Ambient Temperature

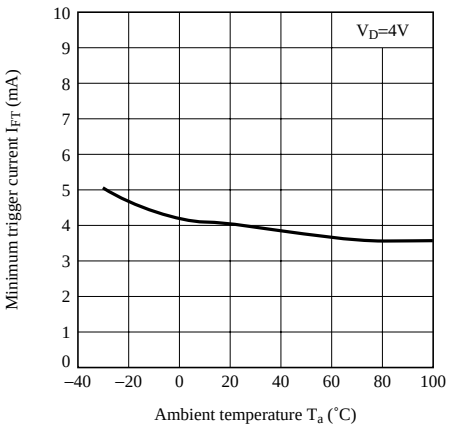


Fig.5 ON-state Voltage vs. Ambient Temperature

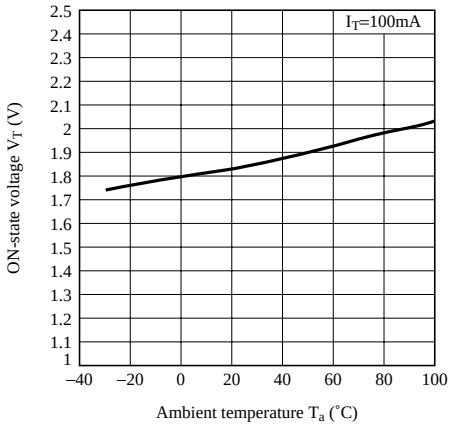


Fig.6 Holding Current vs. Ambient Temperature

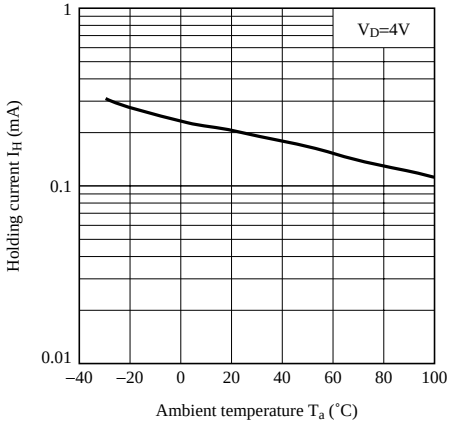


Fig.7 Repetitive Peak OFF-state Current vs. Ambient Temperature

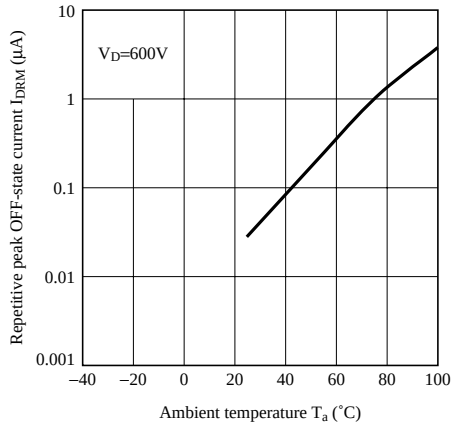


Fig.8 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

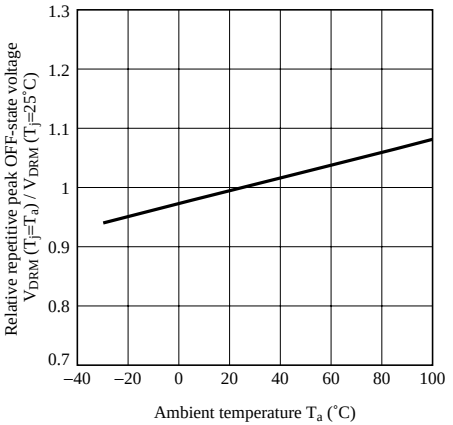


Fig.9 Turn-on Time vs. Forward Current

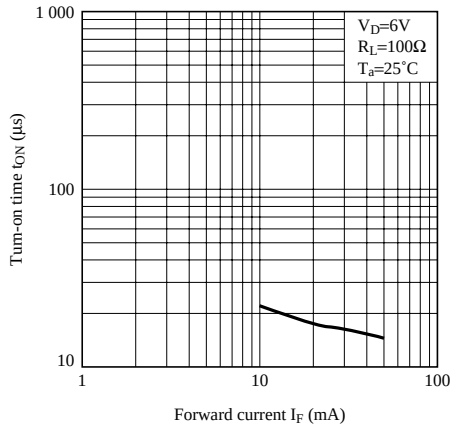
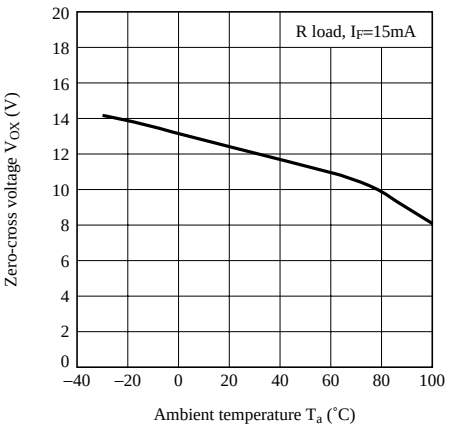


Fig.10 Zero-cross Voltage vs. Ambient Temperature



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- Industrial control
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- Consumer electronics

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- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

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