PC3SH21YFZB

Reinforced Insulation Type Compact Phototriac Coupler for Triggering

■ Features

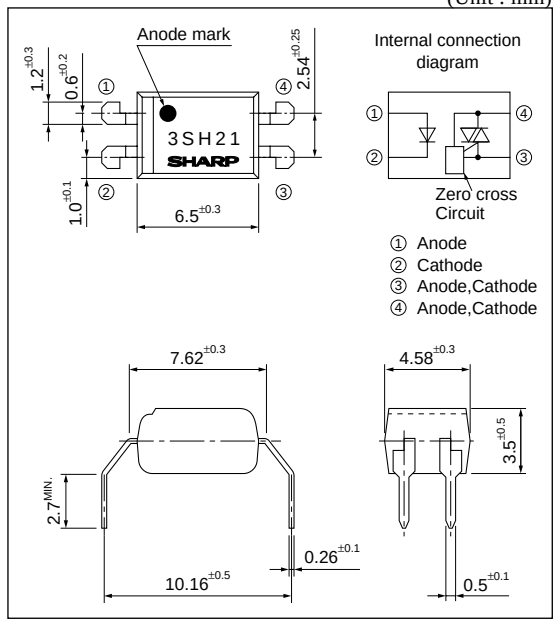
1. Low zero-cross voltage ($V_{OX[MAX.]}$=20V)
2. Isolation voltage between input and output ($V_{iso\ (rms)}$:5kV)
3. High critical rate of rise of OFF-state voltage (dV/dt:MIN. 1 000V/μs)
4. Compact dual-in line package
5. Internal isolation distance (0.4mm or more)
6. Recognized by UL, file No.E64380 (model No.**3SH21**)
   Approved by CSA, file No.CA95323 (model No.**3SH21**)
   Under preparation for VDE, BSI, SEMKŌ, DEMKŌ and FIMKŌ

■ Applications

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

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(T_a=25°C)

	Parameter	Symbol	Rating	Unit
Input	*1Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
Output	*1RMS 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
*2Isolation 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 40 to 60%RH, AC for 1minute, f=60Hz

■ Electro-optical Characteristics

(T_a=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	–	–	3.0	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	V_{OX}	Resistance load, I_F=15mA	–	–	20	V
Transfer characteristics	Minimum trigger current	I_{FT}	V_D=4V, R_L=100Ω	–	–	7	mA
	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

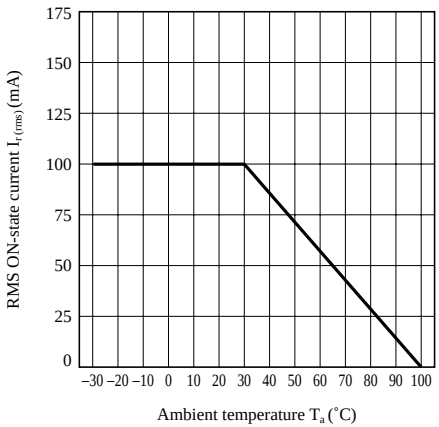
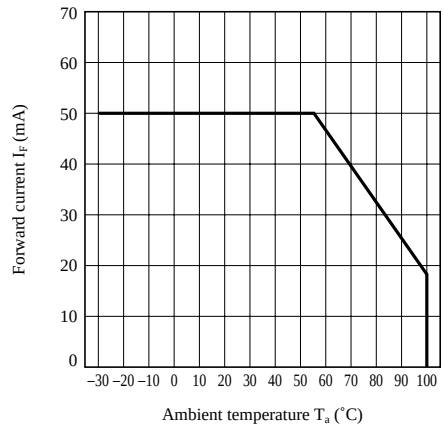


Fig.2 Forward Current vs. Ambient Temperature



NOTICE

- The circuit application examples in this publication are provided to explain representative applications of SHARP devices and are not intended to guarantee any circuit design or license any intellectual property rights. SHARP takes no responsibility for any problems related to any intellectual property right of a third party resulting from the use of SHARP's devices.
- Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device. SHARP reserves the right to make changes in the specifications, characteristics, data, materials, structure, and other contents described herein at any time without notice in order to improve design or reliability. Manufacturing locations are also subject to change without notice.
- Observe the following points when using any devices in this publication. SHARP takes no responsibility for damage caused by improper use of the devices which does not meet the conditions and absolute maximum ratings to be used specified in the relevant specification sheet nor meet the following conditions:

  (i) The devices in this publication are designed for use in general electronic equipment designs such as:
  --- Personal computers
  --- Office automation equipment
  --- Telecommunication equipment [terminal]
  --- Test and measurement equipment
  --- Industrial control
  --- Audio visual equipment
  --- Consumer electronics

  (ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
  --- Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
  --- Traffic signals
  --- Gas leakage sensor breakers
  --- Alarm equipment
  --- Various safety devices, etc.

  (iii) SHARP devices shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as:
  --- Space applications
  --- Telecommunication equipment [trunk lines]
  --- Nuclear power control equipment
  --- Medical and other life support equipment (e.g., scuba).

- If the SHARP devices listed in this publication fall within the scope of strategic products described in the Foreign Exchange and Foreign Trade Law of Japan, it is necessary to obtain approval to export such SHARP devices.
-
- Contact and consult with a SHARP representative if there are any questions about the contents of this publication.