SHARP
Solid State Relay
PR21HD22NSZ series

Under development	
New product information	
Product information	●

Low Minimum Trigger Current Type Small Current SSR

■ General Description

Sharp's **PR21HD22NSZ series** is low minimum trigger current type small current SSR (16-pin DIP package).

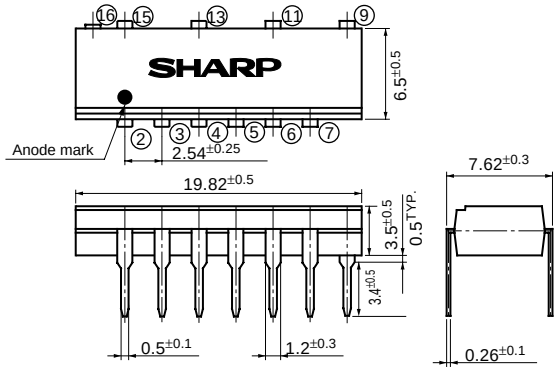
■ Features

(1) 16-pin DIP package
(2) Low minimum trigger current(I_{FT}=5mA)
(3) RMS ON-state current (I_T=1.5A_{rms})
(4) With built-in zero-cross circuit
(5) For 100 V lines (**PR21HD22NSZ**)
For 200 V lines (**PR31HD22NSZ**)
(6) Isolation voltage (Viso: 4 000Vrms)

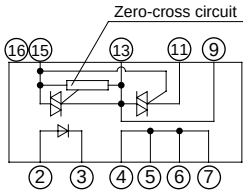
■ Applications

(1) TVs
(2) VCRs
(3) Various home appliances

■ Outline Dimensions (Unit: mm)



Internal connection diagram



② Anode
③ Cathode
⑪ T1
⑨⑬ T2
⑮ G
⑯ NC

* Solder all of the lead pins on the pattern of PCB.

■ Absolute Maximum Ratings

(Ta=25˚C)

Parameter		Symbol	Rating		Unit
			PR21HD22NSZ	PR31HD22NSZ	
Input	Forward current	I_F	50		mA
	Reverse voltage	V_R	6		V
Output	RMS ON-state current	I_T	1.5		A_{rms}
	*1 Peak one cycle surge current	I_{surge}	15		A
	Repetitive peak OFF-state voltage	V_{DRM}	400	600	V
*2 Isolation voltage		V_{iso}	4 000		V_{rms}
Operating temperature		T_{opr}	–25 to +85		˚C
Storage temperature		T_{stg}	–40 to +125		˚C
*3 Soldering temperature		T_{sol}	260		˚C

*1 50Hz, sine wave
*2 AC for 1 minute, 40 to 60% RH, f=60Hz
*3 For 10s

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Electrical 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	μA
Output	Repetitive peak OFF-state current	I_{DRM}	V_D=V_{DRM}	-	-	100	μA
	ON-state voltage	V_T	I_T=1.5A	-	-	1.7	V
	Holding current	I_H	V_D=6V	-	-	25	mA
	Critical rate of rise of OFF-state voltage	dv/dt	V_D= (1/ $\sqrt{2}$) • V_{DRM}	100	-	-	V/ μs
	Zero-cross voltage	Vox	Resistance load, I_F=10mA	-	-	35	V
Transfer characteristics	Minimum trigger current	I_{FT}	V_D=6V, R_L=100Ω	-	-	5	mA
	Isolation resistance	R_{ISO}	DC500V, 40 to 60%RH	5 x 10^{10}	1 x 10^{11}	-	Ω
	Turn-on time	t_{on}	V_D=6V, R_L=100Ω I_F=10mA	-	-	100	μs

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

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- Telecommunication equipment [trunk lines]
- Nuclear power control equipment
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