

## PR33MD22NSZ series

## Solid State Relay

### Low Minimum Trigger Current Type Small Current SSR

#### General Description

Sharp's **PR33MD22NSZ series** is low minimum trigger current type small current SSR(8-pin DIP package).

#### Features

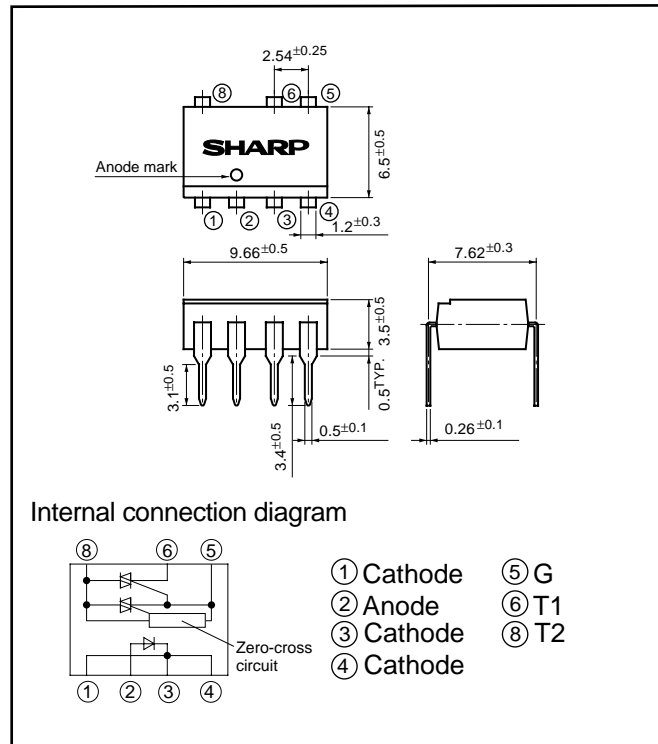
- (1) 8-pin DIP package
- (2) Low minimum trigger current( $I_{T}=5\text{mA}$ )
- (3) With built-in zero-cross circuit
- (4) RMS ON-state current
  - $I_T=0.3\text{Arms}$ : **PR33MD22NSZ**
  - $I_T=0.6\text{Arms}$ : **PR36MD22NSZ**
  - $I_T=0.9\text{Arms}$ : **PR29MD22NSZ**
  - $I_T=0.9\text{Arms}$ : **PR39MD22NSZ**
- (5) Isolation voltage( $V_{iso}$ : 4 000Vrms)

#### Applications

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

#### Outline Dimensions

(Unit: mm)



#### Absolute Maximum Ratings

( $T_a=25^\circ\text{C}$ )

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

\* PR33MD22NSZ : 0.3Arms , PR36MD22NSZ : 0.6Arms , PR29MD22NSZ : 0.9Arms , PR39MD22NSZ : 0.9Arms

\*\* PR33MD22NSZ : 3A , PR36MD22NSZ : 6A , PR29MD22NSZ , PR39MD22NSZ : 9A

\*\*\* PR33MD22NSZ , PR36MD22NSZ , PR39MD22NSZ : 600V , PR29MD22NSZ : 400V

\*1 50Hz, sine wave

\*2 AC for 1 minute, 40 to 60% RH,  $f=60\text{Hz}$

\*3 For 10s

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### ■ Electrical 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	μA
Output	Repetitive peak OFF-state current	I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub>	-	-	100	μA
	ON-state voltage	V <sub>T</sub>	I <sub>T</sub> =**	-	-	3.0	V
	Holding current	I <sub>H</sub>	V <sub>D</sub> =6V	-	-	25	mA
	Critical rate of rise of OFF-state voltage	dv/dt	V <sub>D</sub> =(1/√2)•V <sub>DRM</sub>	100	-	-	V/μs
	Zero-cross voltage	V <sub>OX</sub>	Resistance load, I <sub>F</sub> =10mA	-	-	35	V
Transfer characteristics	Minimum trigger current	I <sub>FT</sub>	V <sub>D</sub> =6V, R <sub>L</sub> =100Ω	-	-	5	mA
	Isolation resistance	R <sub>ISO</sub>	DC500V, 40 to 60%RH	5 x 10 <sup>10</sup>	1 x 10 <sup>11</sup>	-	Ω
	Turn-on time	t <sub>on</sub>	V <sub>D</sub> =6V, R <sub>L</sub> =100Ω I <sub>F</sub> =10mA	-	-	100	μs

\*\* PR33MD22NSZ : 0.3A , PR36MD22NSZ : 0.6A , PR29MD22NSZ , PR39MD22NSZ : 0.9A

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