PR26MF12NSZ/ PR36MF12NSZ Series

8-Pin DIP Type SSR for Low Power Control

■ Features

1. Compact 8-pin dual-in-line package type
2. RMS ON-state current $I_{T\ (rms)}$:0.6A
3. Low minimum trigger current (I_{FT}≤5mA)
4. Built-in zero-cross circuit **(PR36MF22NSZ)**
5. High repetitive peak OFF-state voltage
   PR26MF12NSZ V_{DRM}:MIN. 400V
   PR36MF12NSZ/PR36MF22NSZ V_{DRM}:MIN. 600V
6. Isolation voltage between input and output ($V_{iso\ (rms)}$:4kV)
7. Recognized by UL (No. E94758)
8. Recognized by CSA (No. LR63705)
9. VDE (VDE0884) approved type
   (PR36MF12YSZ, PR36MF22YSZ) is also available as an option

■ Applications

1. Various types of home appliances

■ Absolute Maximum Ratings

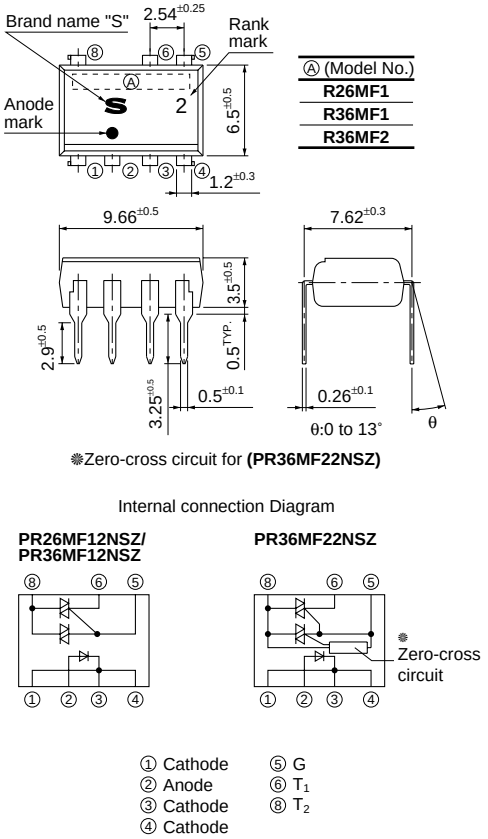
(T_a=25°C)

Parameter			Symbol	Rating	Unit
Input	*1 Forward current		I_F	50	mA
	Reverse voltage		V_R	6	V
Output	*1 RMS ON-state current		$I_{T\ (rms)}$	0.6	A
	Peak one cycle surge current		I_{surge}	6 (50Hz sine wave)	A
	Repetitive peak OFF-state voltage	PR26MF12NSZ	V_{DRM}	400	V
		PR36MF12NSZ		600	
		PR36MF22NSZ			
*2 Isolation voltage			$V_{iso\ (rms)}$	4.0	kV
Operating temperature		PR26MF12NSZ	T_{opr}	−25 to +85	°C
		PR36MF12NSZ			
		PR36MF22NSZ		−30 to +85	
Storage temperature			T_{stg}	−40 to +125	°C
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, 3, 4
*2 40 to 60%RH, AC for 1 minute, f=60Hz

■ Outline Dimensions

(Unit : mm)



❋Zero-cross circuit for **(PR36MF22NSZ)**

Internal connection Diagram

① Cathode ⑤ G
② Anode ⑥ T_1
③ Cathode ⑧ T_2
④ Cathode

Terminal ①, ③ and ④ are common ones of cathode.To radiate the heat, solder all of the lead pins on the pattern of PWB.

■ Model Line-up

	For 100V line	For 200V line
No built-in zero-cross circuit	**PR26MF12NSZ**	**PR36MF12NSZ** ＊**(PR36MF12YSZ)**
Built-in zero-cross circuit	–	**PR36MF22NSZ** ＊**(PR36MF22YSZ)**

＊ VDE (VDE0884) approved type

■ Electrical 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	μA
Output	Repetitive peak OFF-state current		I_{DRM}	V_D=V_{DRM}	–	–	100	μA
	ON-state voltage		V_T	I_T=0.6A	–	–	3.0	V
	Holding current		I_H	V_D=6V	–	–	25	mA
	Critical rate of rise of OFF-state voltage		dV/dt	V_D=1/√2 • V_{DRM}	100	–	–	V/μs
	Zero-cross voltage	**PR36MF22NSZ**	V_{OX}	I_F=10mA, R load	–	–	35	V
Transfer characteristics	Minimum trigger current		I_{FT}	V_D=6V, R_L=100Ω	–	–	5	mA
	Isolation resistance		R_{ISO}	DC=500V, 40 to 60%RH	5×10^{10}	10^{11}	–	Ω
	Turn-on time	**PR26MF12NSZ/PR36MF12NSZ**	t_{on}	V_D=6V, R_L=100Ω, I_F=10mA	–	–	100	μs
		PR36MF22NSZ					50	

Fig.1 RMS ON-state Current vs. Ambient Temperature (PR26MF12NSZ/PR36MF12NSZ)

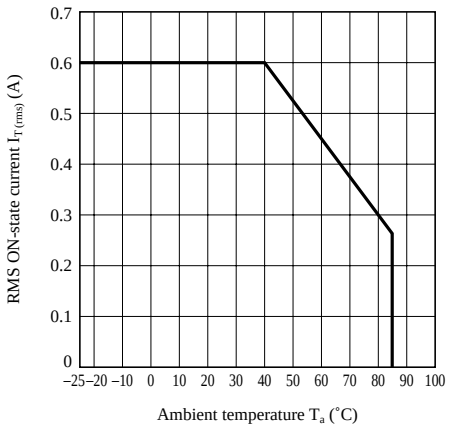


Fig.2 RMS ON-state Current vs. Ambient Temperature (PR36MF22NSZ)

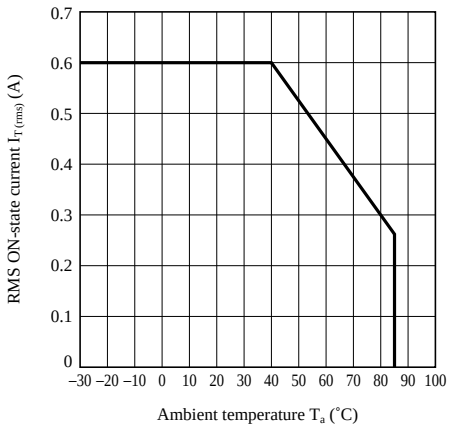


Fig.3 Forward Current vs. Ambient Temperature (PR26MF12NSZ/PR36MF12NSZ)

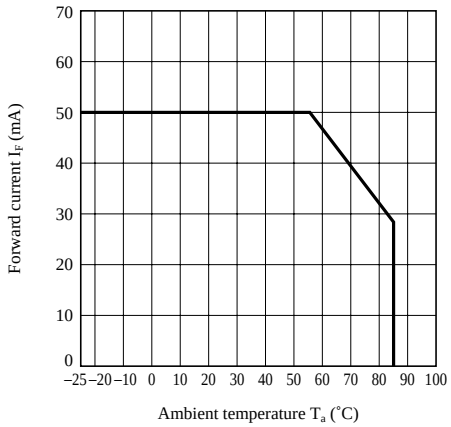


Fig.4 Forward Current vs. Ambient Temperature (PR36MF22NSZ)

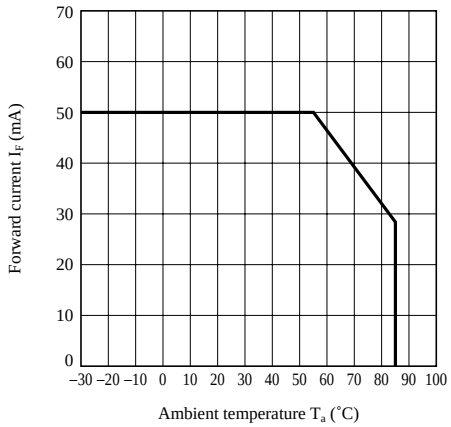


Fig.5 Forward Current vs. Forward Voltage

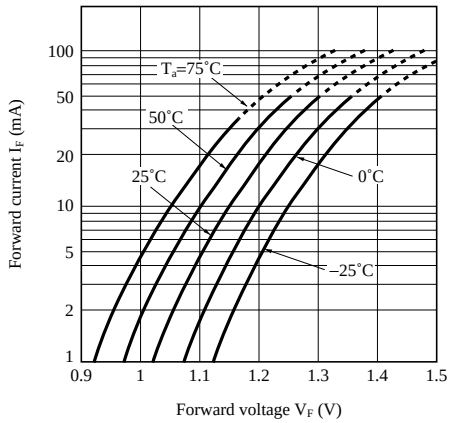


Fig.6 Minimum Trigger Current vs. Ambient Temperature (PR26MF12NSZ/PR36MF12NSZ)

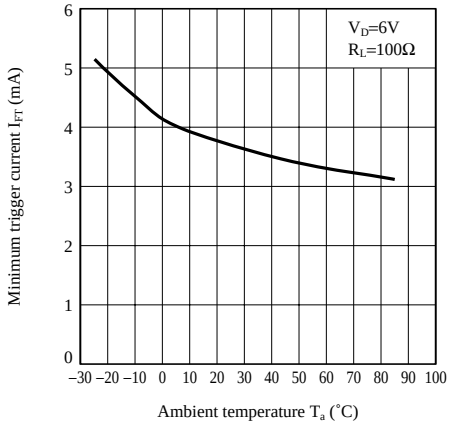


Fig.7 Minimum Trigger Current vs. Ambient Temperature (PR36MF22NSZ)

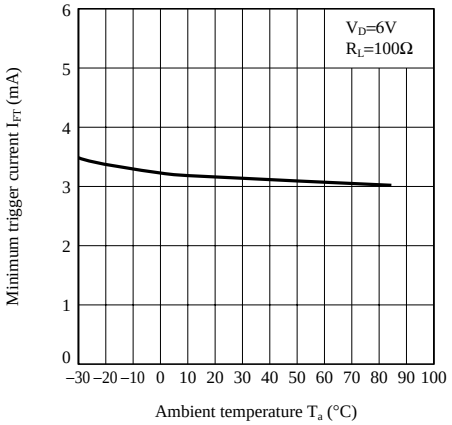


Fig.8 ON-state Voltage vs. Ambient Temperature (PR26MF12NSZ/PR36MF12NSZ)

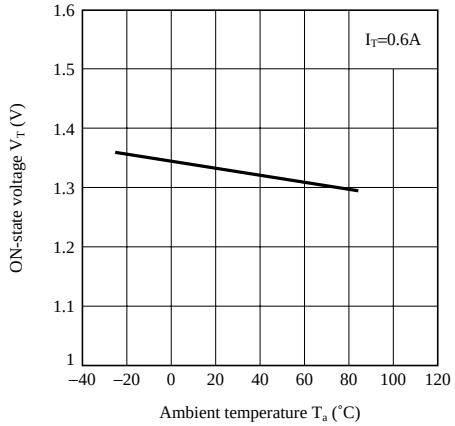


Fig.9 ON-state Voltage vs. Ambient Temperature (PR36MF22NSZ)

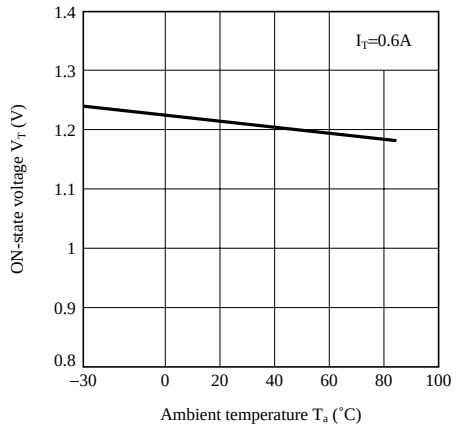


Fig.10 Relative Holding Current vs. Ambient Temprature (PR26MF12NSZ/PR36MF12NSZ)

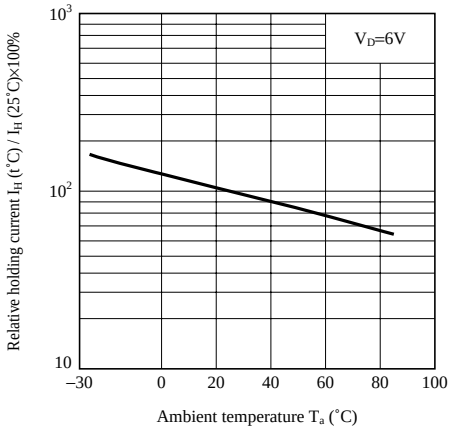


Fig.11 Relative Holding Current vs. Ambient Temperature (PR36MF22NSZ)

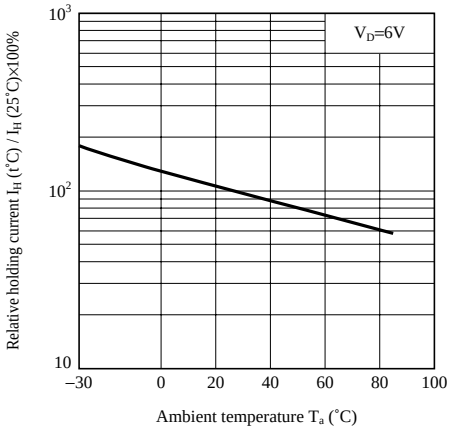


Fig.12 Zero-cross Voltage vs. Ambient Temperature (PR36MF22NSZ)

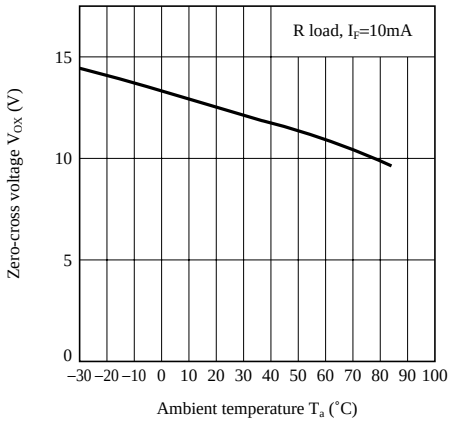


Fig.13 ON-state Current vs. ON-state Voltage (PR26MF12NSZ/PR36MF12NSZ)

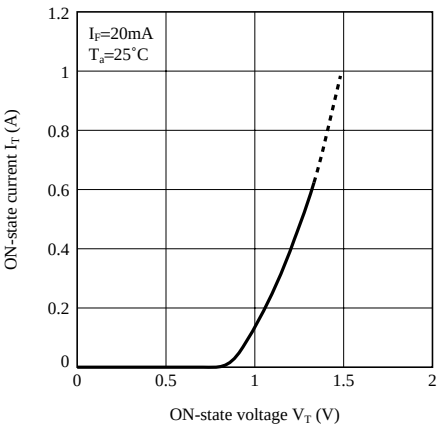


Fig.14 ON-state Current vs. ON-state Voltage (PR36MF22NSZ)

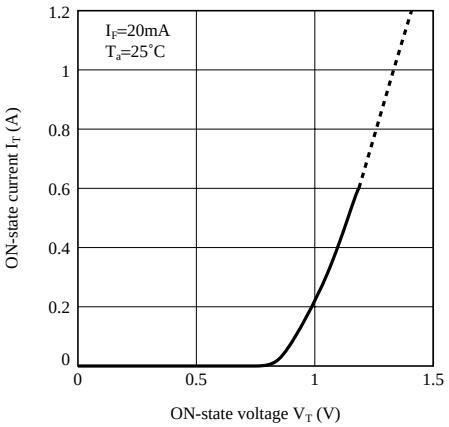


Fig.15 Turn-on Time vs. Forward Current (PR26MF12NSZ/PR36MF12NSZ)

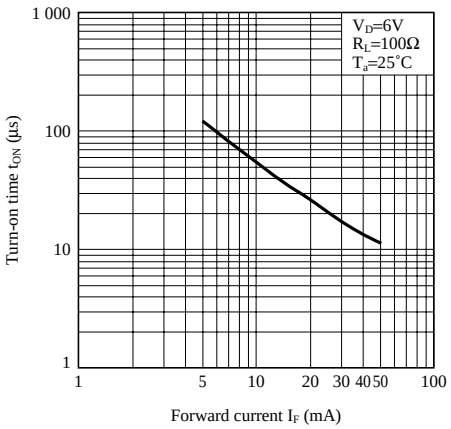
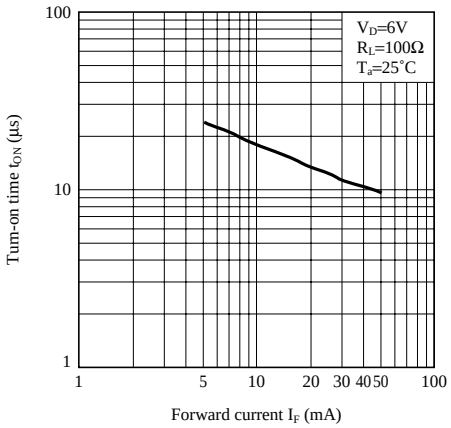


Fig.16 Turn-on Time vs. Forward Current (PR36MF22NSZ)



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