Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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S101N11/S101N12 S201N11/S201N12

Voltage Input Type Solid State Relay with Built-in Snubber Circuit

■ Features

1. Built-in snubber circuit
2. Input side voltage operation type
3. Built-in zero-cross circuit **(S101N12/S201N12)**
4. RMS ON-state current I_T : MAX. 1.6Arms

■ Applications

1. Programmable controllers
2. Copiers
3. Air conditioners
4. Automatic vending machines

■ Model line-ups

	For 100V lines	For 200V lines
No zero-cross circuit	**S101N11**	**S201N11**
Built-in zero-cross circuit	**S101N12**	**S201N12**

■ Absolute Maximum Ratings

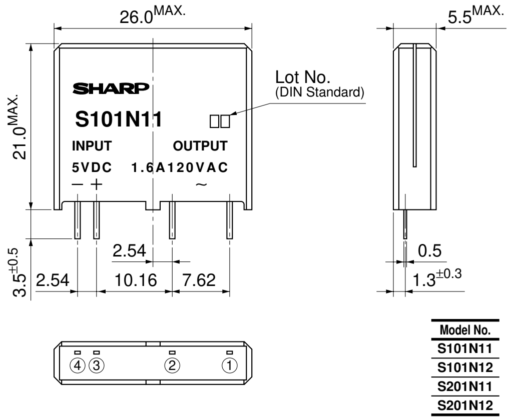
(Ta=25°C)

Parameter			Symbol	Rating	Unit
Input	Input signal voltage		V_{IN}	3 to 6	V
	Reverse voltage		V_R	6	V
Output	Standard voltage	**S101N11** **S101N12**	–	120	V_{rms}
		S201N11 **S201N12**		240	
	Operating frequency		f	47 to 63	Hz
	Output supply voltage	**S101N11** **S101N12**	V_{out}	60 to 140	V_{rms}
		S201N11 **S201N12**		60 to 280	
	RMS ON-state current		I_T	*1 1.6	A_{rms}
	*2 Peak one cycle surge current		I_{surge}	15	A
Operating temperature			T_{opr}	–25 to +80	°C
Storage temperature			T_{stg}	–30 to +85	°C
*3 Isolation voltage			V_{iso}	3.0	kV_{rms}
*4 Soldering temperature			T_{sol}	260	°C

*1 Refer to Fig.1
*2 50Hz sine wave, start at Tj=25°C
*3 Isolation voltage measuring method
(1) Dielectric withstand voltage tester with zero cross circuit shall be used.
(2) The applied voltage waveform shall be sine wave.
(3) Voltage shall be applied between input and output.
(Input and output terminals shall be shorted respectively.)
(4) AC 60Hz, 1min, 40 to 60%RH.
*4 For 5s

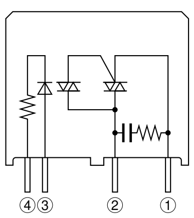
■ Outline Dimensions

(Unit : mm)

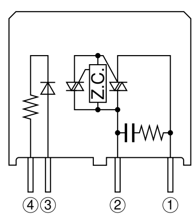


Internal connection diagram

S101N11/S201N11



S101N12/S201N12



Z.C. : Zero-cross circuit

① Output (Triac T1)
② Output (Triac T2)
③ Input (+)
④ Input (–)

❋ Unspecified tolerance : ±0.4mm

■ Recommended Operating Conditions

(Ta=25°C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Input voltage		V_{IN}	–	4	–	6	V
Output	Load supply voltage	S101N11 S101N12	V_{out}	–	80	–	120	V_{rms}
		S201N11 S201N12					260	
	Load operating current		–	Refer to Fig.1	0.05	–	1.6	A_{rms}
	Operating frequency		f	–	47	–	63	Hz

■ Electrical Characteristics

(Ta=25°C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Input resistance		R_{IN}	–	–	160	–	Ω
	Pickup voltage	S101N11/S101N12	V_{pu}	V_D=120V_{rms}, R_L=500Ω	–	–	3	V
		S201N11/S201N12		V_D=240V_{rms}, R_L=500Ω				
	Dropout voltage	S101N11/S101N12	V_{do}	V_D=120V_{rms}, R_L=500Ω	1	–	–	V
		S201N11/S201N12		V_D=240V_{rms}, R_L=500Ω				
Output	ON-state voltage		V_T	I_T=1.6A_{rms}, Resistance load, V_{IN}=3V	–	–	1.6	V_{rms}
	Open circuit leak current	S101N11/S101N12	I_{leak}	V_D=120V_{rms}	–	–	0.7	mA_{rms}
		S201N11/S201N12		V_D=240V_{rms}			1.3	
	Minimum operating current	S101N11/S101N12	I_{OP}	V_D=60V, Resistance load, V_{IN}=3V	–	–	10	mA_{rms}
		S201N11/S201N12					20	
	Zero-cross voltage	S101N12/S201N12	V_{OX}	V_{IN}=3V, R_L=400Ω	–	–	35	V
Transfer characteristics	Turn-on time	S101N11	t_{on}	V_D=120V_{rms}, AC50Hz, R_L=500Ω, V_{IN}=3V	–	–	0.5	ms
		S101N12					11	
		S201N11		V_D=240V_{rms}, AC50Hz, R_L=500Ω, V_{IN}=3V			0.5	
		S201N12					11	
	Turn-off time	S101N11/S101N12	t_{off}	V_D=120V_{rms}, AC50Hz, R_L=500Ω, V_{IN}=3V	–	–	11	ms
		S201N11/S201N12		V_D=240V_{rms}, AC50Hz, R_L=500Ω, V_{IN}=3V				
	Isolation resistance		R_{iso}	DC500V, 40 to 60%RH	100	–	–	MΩ

Fig.1 RMS ON-state Current vs. Ambient Temperature

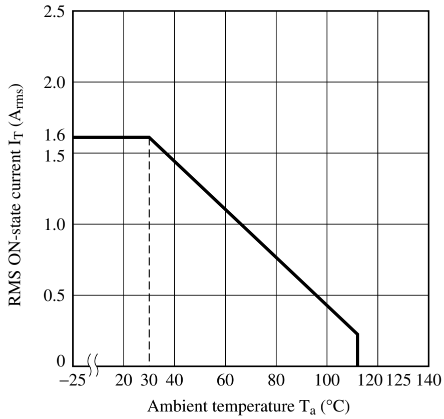


Fig.2 Open Circuit Leak Current vs. Ambient Temperature (Typical Value)

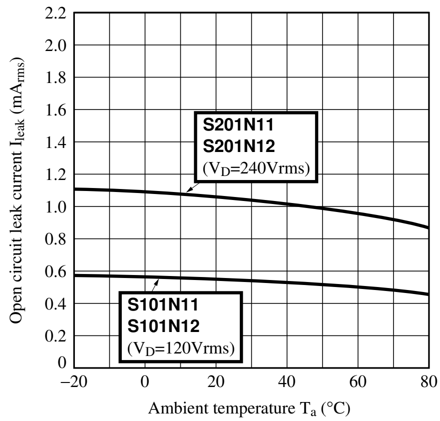


Fig.3 Input Current vs. Input Voltage (Typical Value)

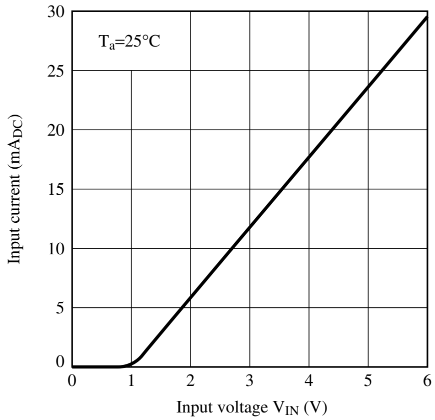


Fig.4 Non-repetitive Surge Current vs. Time

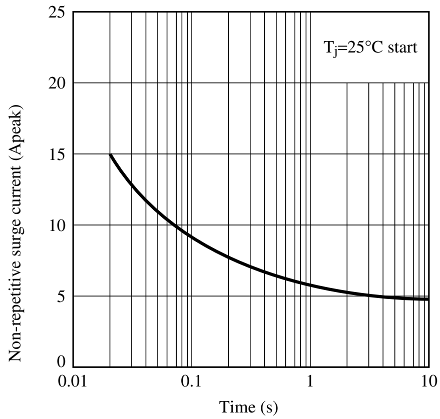


Fig.5 Pickup Voltage, Dropout Voltage vs. Ambient Temperature

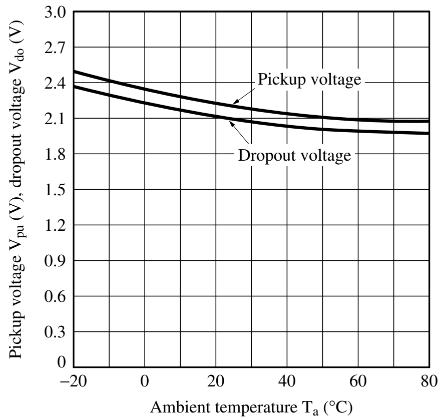
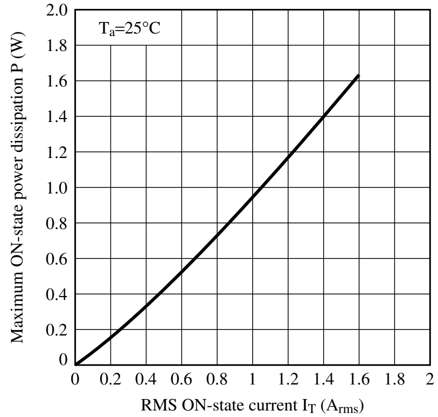


Fig.6 Maximum ON-state Power Dissipation vs. RMS ON-state Current



NOTICE