

S101N11/S101N12 S201N11/S201N12

■ 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	120	V _{rms}	
		S101N12			
		S201N11	240		
		S201N12			
	Operating frequency	f	47 to 63	Hz	
	Output supply voltage	S101N11 S101N12 S201N11 S201N12	V _{out}	60 to 140	V _{rms}
				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 $T_j=25^\circ\text{C}$

*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.)

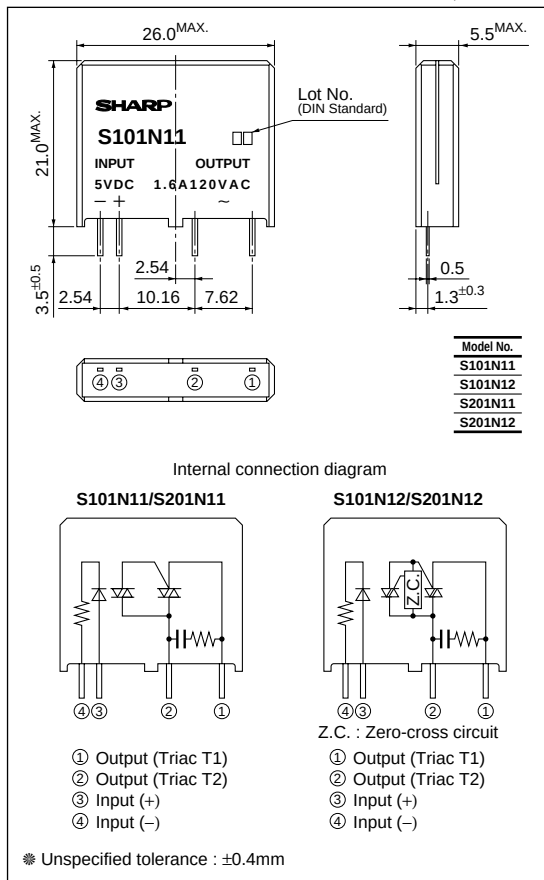
(4) AC 60Hz, 1min, 40 to 60%RH.

*4 For 5s

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

■ Outline Dimensions

(Unit : mm)



■ 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	—	80	—	120	V _{rms}
		S101N12					
		S201N11					
		S201N12					
	Load operating current		—	Refer to Fig.1	0.05	—	1.6
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		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

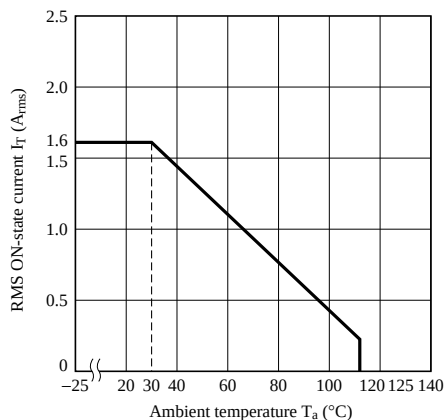


Fig.2 Open Circuit Leak Current vs. Ambient Temperature (Typical Value)

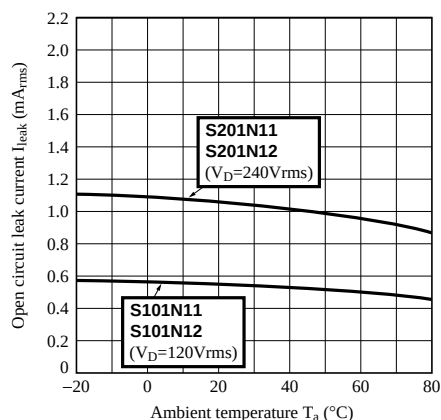


Fig.3 Input Current vs. Input Voltage
(Typical Value)

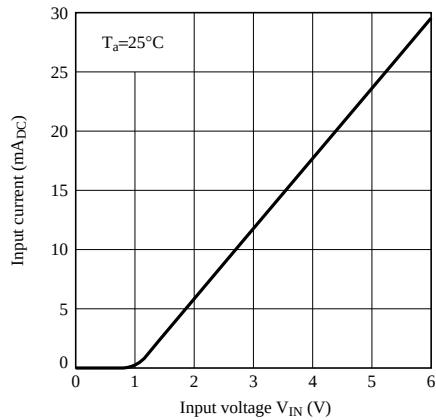


Fig.4 Non-repetitive Surge Current vs. Time

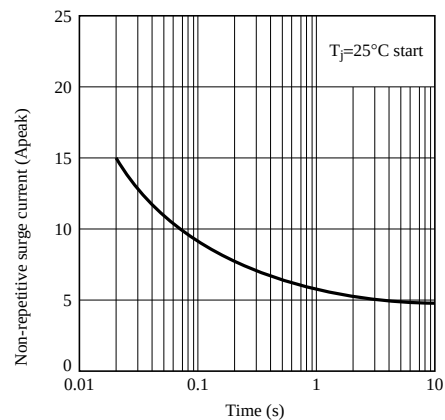


Fig.5 Pickup Voltage, Dropout Voltage vs.
Ambient Temperature

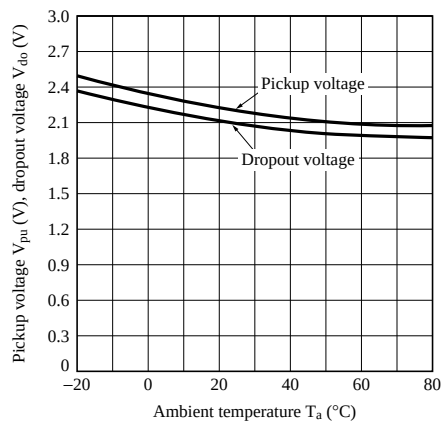
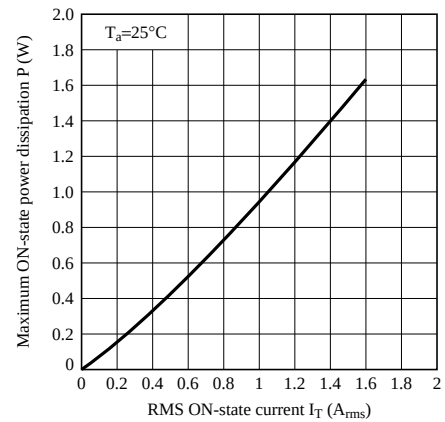


Fig.6 Maximum ON-state Power Dissipation
vs. RMS ON-state Current



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