

SS12 THRU SS120  
SCHOTTKY BARRIER RECTIFIERS



<b>VOLTAGE:</b> 20~200 Volts	<b>CURRENT:</b> 1.0 Amperes	DO-214AC(SMA)	Marking and Polarity
<b>FEATURES</b> <ul style="list-style-type: none"> <li>Low Forward Voltage Drop for high efficiency</li> <li>Low leakage current for high reliability</li> <li>High forward surge capability for high reliability</li> </ul>		<p>Remark:</p> <ul style="list-style-type: none"> <li>①. NH=niuhang trademark</li> <li>②. FF=Product line,According to actual changes; YWW=Periodic code,According to actual changes;</li> <li>③. SS1xx=Modle,xxx=2,4,6,8,10,15,20</li> <li>④. White band denotes cathode</li> </ul>	
<b>MECHANICAL DATA</b> <ul style="list-style-type: none"> <li><b>Terminals:</b> Plated Leads Solderable per MIL-STD-202, Method 208</li> <li><b>Mounting Position:</b> Any</li> <li><b>Lead Free:</b> Lead Free Finish, RoHS Compliant</li> <li><b>Weight:</b>App. 0.063 grams (0.0022 ounce)</li> </ul>			
<b>TYPICAL APPLICATIONS</b> <ul style="list-style-type: none"> <li>For use in high frequency inverters , DC/DC converters,LED driver etc. applications</li> </ul>			

Maximum Ratings(Ratings at 25°C ambient temperature unless otherwise specified )

Parameter	Symbol	SS12	SS14	SS16	SS18	SS110	SS115	SS120	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	40	60	80	100	150	200	V
Maximum RMS voltage	$V_{RMS}$	14	28	42	56	70	105	140	V
Maximum DC blocking voltage	$V_{DC}$	20	40	60	80	100	150	200	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	30							A
Current Squared Time Per Diode(t<8.3ms)	$I^2t$	3.74							A <sup>2</sup> sec

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Test Conditions		Symbol	SS12	SS14	SS16	SS18	SS110	SS115	SS120	Unit
Maximum Forward Voltage(Note 1)	Ta=25°C	IF= 1.0 A	$V_F$	0.55	0.70	0.80	0.90				V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	Ta=25°C	VR= $V_{RRM}$	$I_{RRM}$	50	30	20	10				uA
	Ta=125°C	VR= 80%* $V_{RRM}$		10	8	5	3				mA
Typical junction capacitance	4V,1MHz		$C_J$	110			90				pF

Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified )

Parameter	Symbol	SS12	SS14	SS16	SS18	SS110	SS115	SS120	Unit
Operating junction and Storage temperature range	$T_J$	-55 to 125			-55 to 150				°C
Storage temperature range	$T_{STG}$	-55 to 150							
Typical thermal resistance (Note 2)	$R_{\theta JA}$				88				°C/W
	$R_{\theta JC}$				20				

- Note:**
- Pulse width < 300 uS, Duty cycle < 2%
  - Mounted on P.C.B. with 0.2" x 0.2" (5.08 mm x 5.08 mm) copper pad areas

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RATING AND CHARACTERISTIC CURVES

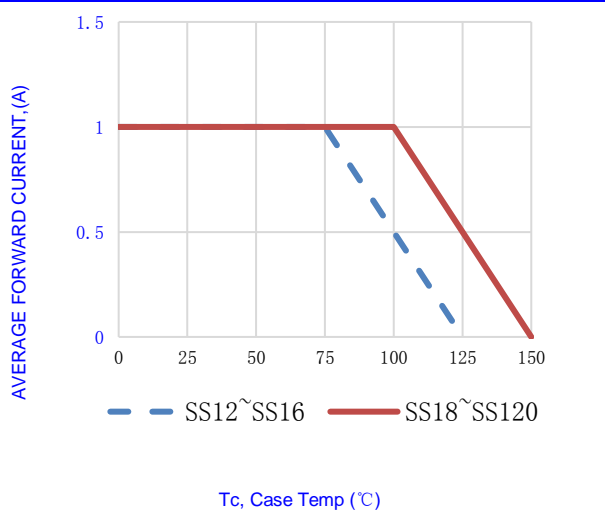


Fig.1-FORWARD CURRENT DERATING CURVE

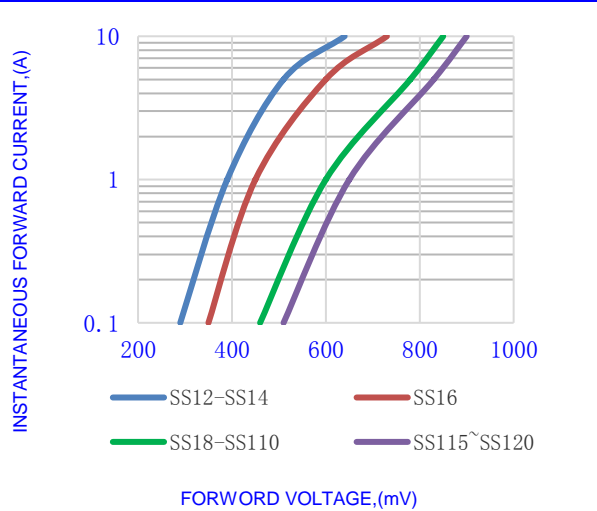


Fig.2- TYPICAL INSTANTANEOUS FORWARD

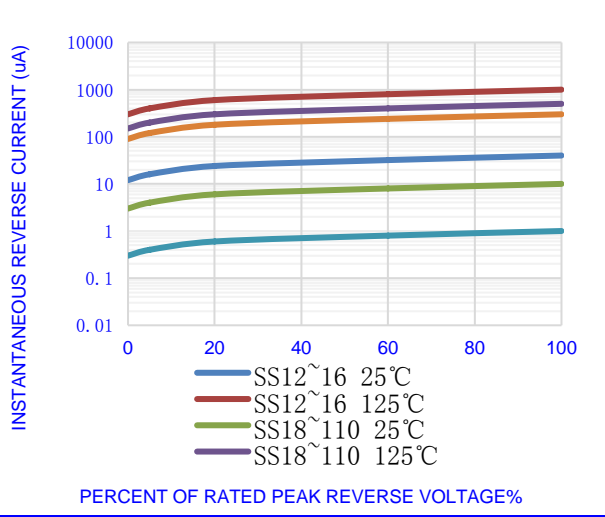


Fig.3- TYPICAL REVERSE CHARACTERISTICS

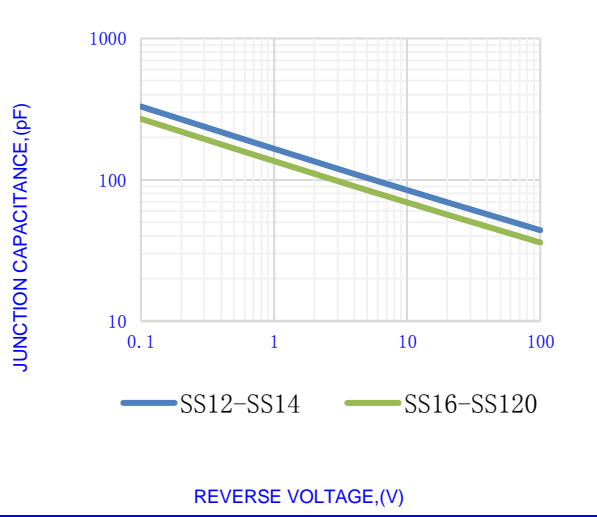


Fig.4-TYPICAL JUNCTION CAPACITANCE

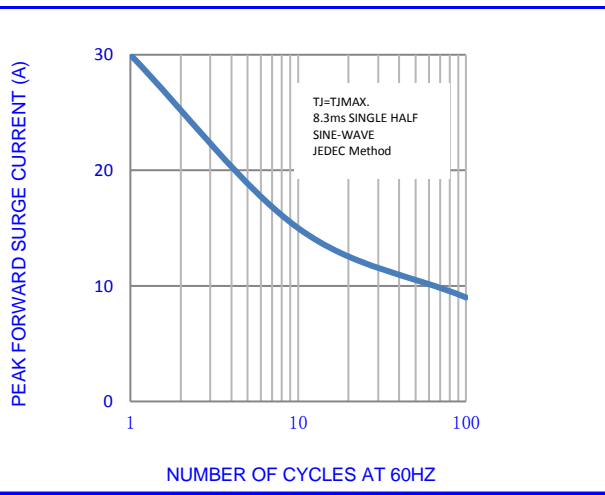


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

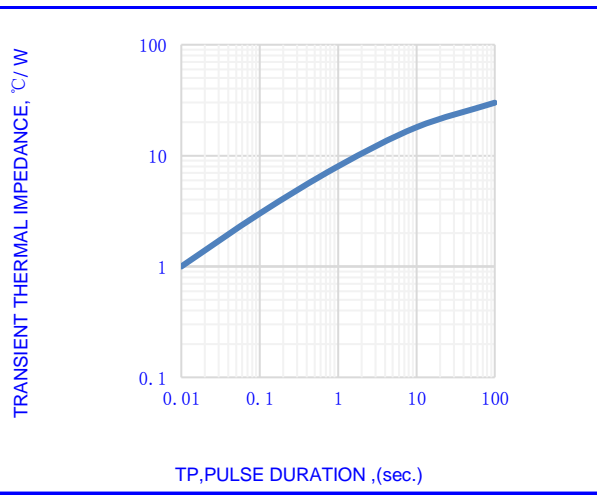


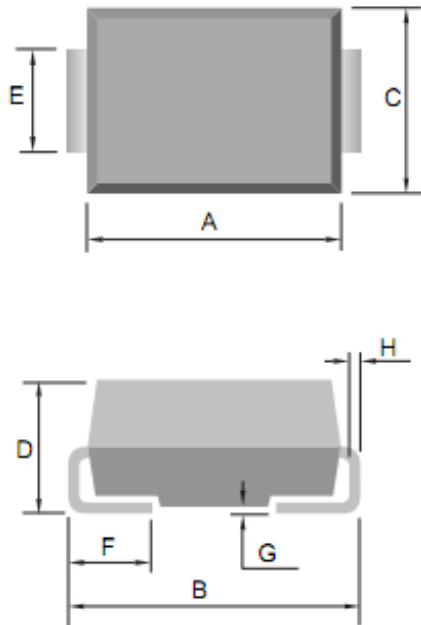
Fig.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

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**OUTLINE DRAWINGS**

**DO-214AC(SMA)**

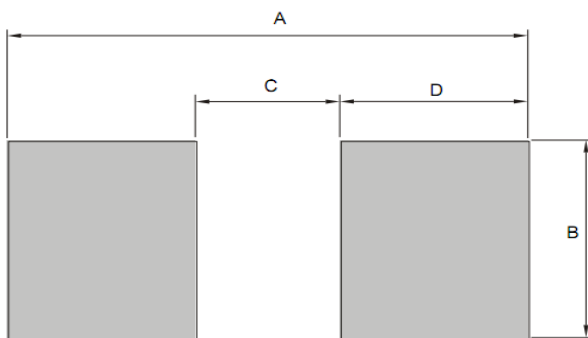


**OUTLINE DIMENSIONS**

DIM	MILLIMETERS			INCHES		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.000	-	4.600	0.181	-	0.157
B	4.700	-	5.280	0.185	-	0.208
C	2.400	-	2.800	0.094	-	0.110
D	1.900	-	2.400	0.075	-	0.094
E	1.300	-	1.500	0.051	-	0.059
F	0.760	-	1.520	0.030	-	0.060
G	0.100	-	0.250	0.004	-	0.010
H	0.150	-	0.305	0.006	-	0.012

**RECOMMENDED LAYOUT DRAWINGS**

**DO-214AC(SMA)**



**RECOMMENDED MOUNTING PAD DIMENSIONS**

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	5.800	-	-	0.228	-
B	-	2.060	-	-	0.081	-
C	-	1.660	-	-	0.065	-
D	-	2.070	-	-	0.082	-

**PACKING INFORMATION**

**DO-214AC(SMA)**

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ330	5000	340x340x45	10000	360x360x470	100000

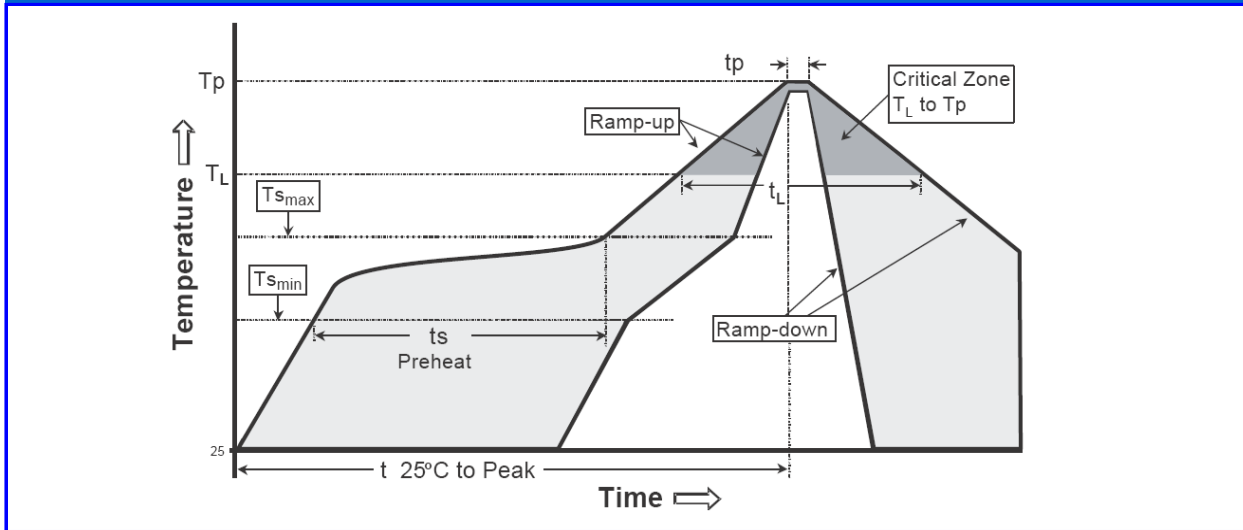
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**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T <sub>s min</sub> ) -Temperature Max(T <sub>s max</sub> ) -Time(t <sub>s min</sub> to t <sub>s max</sub> )	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T <sub>L</sub> ) - Time (t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T <sub>P</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t <sub>p</sub> )	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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