

SS310LBF

LOW VF SCHOTTKY RECTIFIERS



VOLTAGE: 100 Volts

CURRENT: 3.0 Amperes

SMBF

Marking and Polarity

FEATURES

- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

MECHANICAL DATA

- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant
- **Weight:** App. 0.066 grams (0.0023 ounce)

TYPICAL APPLICATIONS

- For use in high frequency inverters , DC/DC converters, LED driver etc. applications



Remark:

- ①. SS310LBF=Module
- ②. NH=niuhang trademark
- ③. FF=Product line, According to actual changes;  
YWW=Periodic code, According to actual changes;
- ④. White band denotes cathode

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

Parameter	Symbol	SS310LBF	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Maximum RMS voltage	$V_{RMS}$	70	V
Maximum DC blocking voltage	$V_{DC}$	100	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	3.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)(see fig.5)	$I_{FSM}$	125	A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2t$	64.84	A <sup>2</sup> sec

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

Parameter	Test Conditions		Symbol	SS310LBF			Unit
				Min.	Typ.	Max.	
Maximum instantaneous forward voltage (see fig.2) (Note 1)	$T_A=25^\circ C$	$I_F= 3.0 A$	$V_F$	--	0.72	0.78	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (see fig.3)(Note 1)	$T_A=25^\circ C$	$V_R= V_{RRM}$	$I_R$	--	1	10	uA
	$T_A=125^\circ C$	$V_R= 80%*V_{RRM}$		--	1	5	mA
Typical junction capacitance(see fig.4)	4V, 1MHz		$C_J$	--	290	--	pF

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

Parameter	Symbol	SS310LBF	Unit
Operating junction	$T_J$	-55 to 150	°C
Storage temperature range	$T_{STG}$	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	55	°C/W
	$R_{\theta JL}$	17	

Note: 1. Pulse width < 300 uS, Duty cycle < 2%  
2. Mounted on P.C.B. with 0.3" x 0.3" (7.62 mm x 7.62 mm) copper pad areas

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RATING AND CHARACTERISTIC CURVES

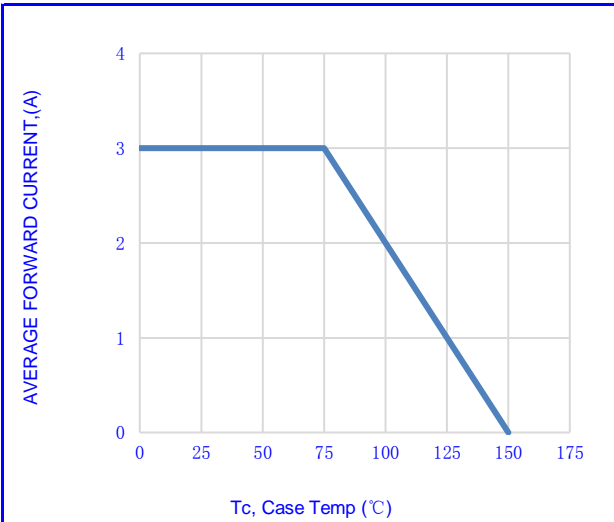


Fig.1- FORWARD CURRENT DERATING CURVE

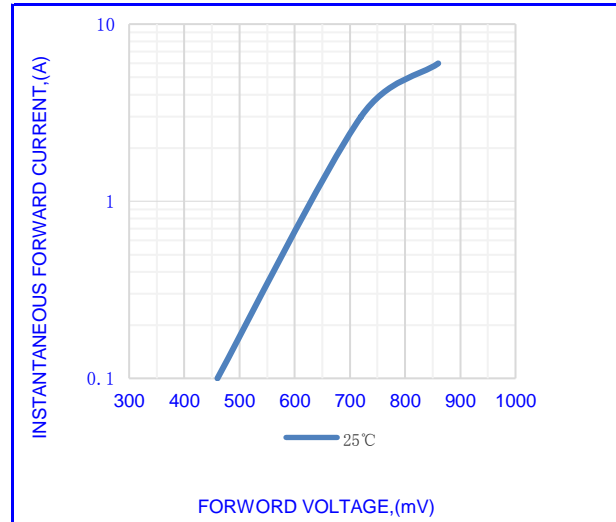


Fig.2-TYPICAL INSTANTANEOUS FORWARD

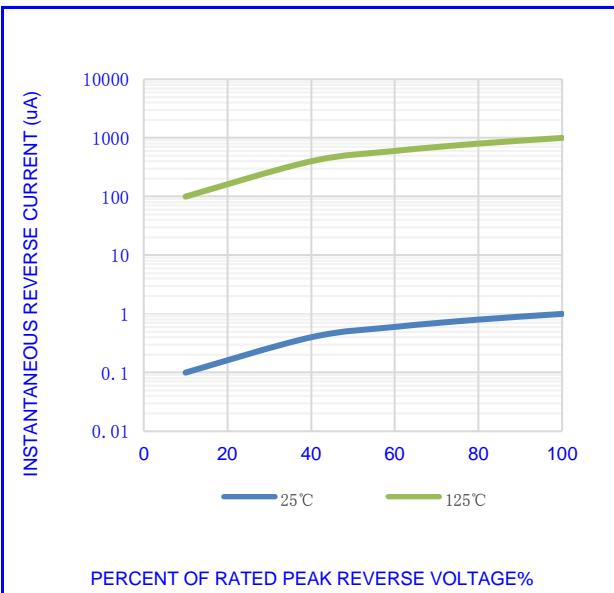


Fig.3-TYPICAL REVERSE CHARACTERISTICS

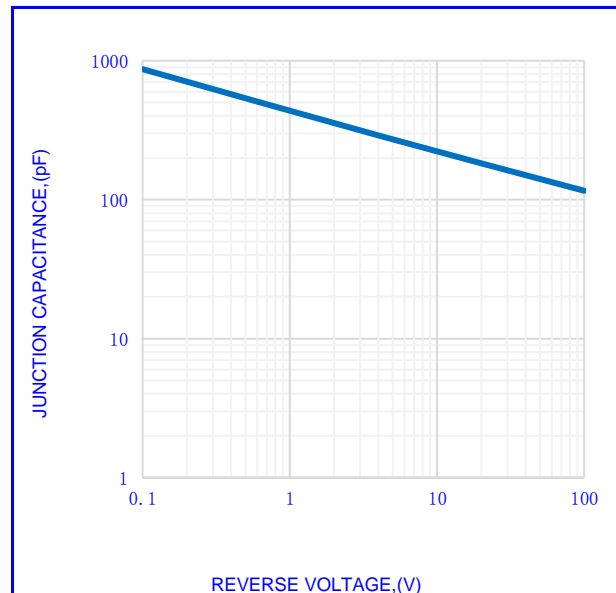


Fig.4- TYPICAL JUNCTION CAPACITANCE

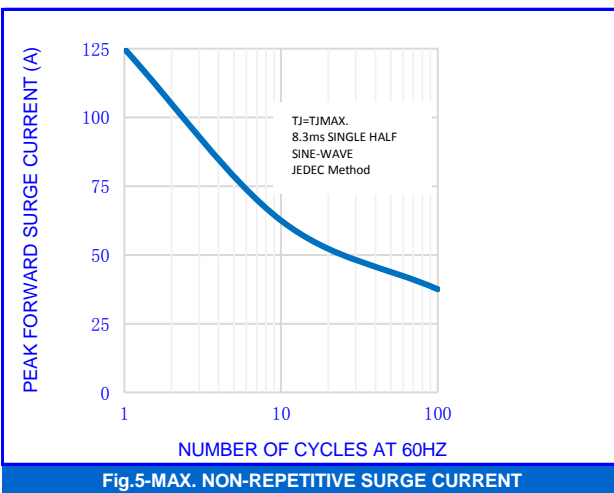


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

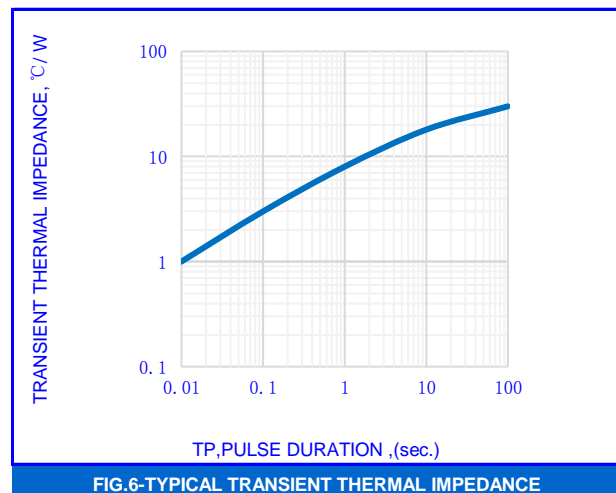


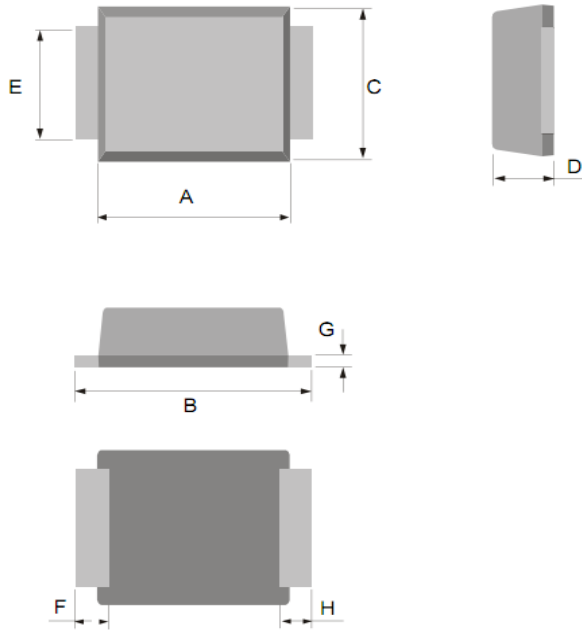
FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

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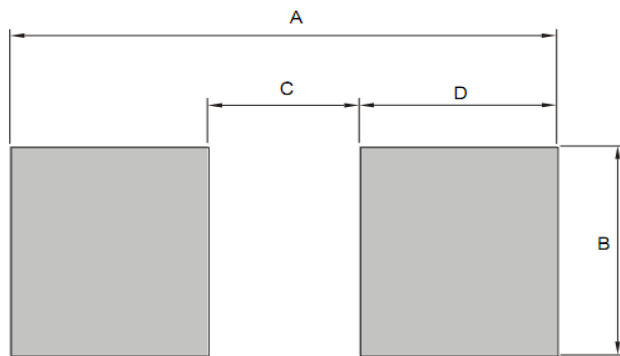
OUTLINE DRAWINGS



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OUTLINE DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.100	-	4.700	0.161	-	0.185
B	5.100	-	5.500	0.201	-	0.217
C	3.400	-	3.800	0.134	-	0.150
D	1.050	-	1.550	0.041	-	0.061
E	1.800	-	2.200	0.071	-	0.087
F	0.550	-	1.450	0.022	-	0.057
G	0.150	-	0.250	0.006	-	0.010
H	0.550	-	1.450	0.022	-	0.057

RECOMMENDED LAYOUT DRAWINGS



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RECOMMENDED MOUNTING PAD DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	6.500	-	-	0.256	-
B	-	2.200	-	-	0.087	-
C	-	2.800	-	-	0.110	-
D	-	1.850	-	-	0.073	-

PACKING INFORMATION

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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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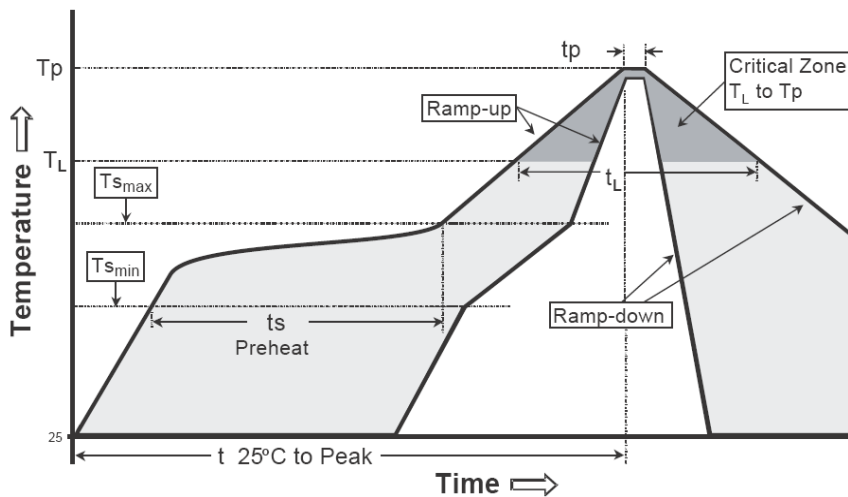
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**Recommended wave soldering condition**

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 (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	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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