SS56F

SCHOTTKY BARRIER RECTIFIERS

VOLTAGE:	60 Volts	CURRENT：	5.0 Amperes

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. 0.026 grams（0.0009 ounce)

TYPICAL APPLICATIONS

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

SMAF — **Marking and Polarity**

Remark:

①. NH=niuhang trademark

②. SS56F=Modle

③. White band denotes cathode

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

Parameter	Symbol	SS56F	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	60	V
Maximum RMS voltage	V_{RMS}	42	V
Maximum DC blocking voltage	V_{DC}	60	V
Maximum average forward rectified current(see fig.1)	$IF_{(AV)}$	5.0	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}	120	A
Current Squared Time Per Diode(t<8.3ms)	I^2t	59.76	A^2sec

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

Parameter	Test Conditions		Symbol	SS56F			Unit
				Min.	Typ.	Max.	
Maximum instantaneous forward voltage(see fig.2) (Note 1)	T_A=25℃	IF= 5.0 A	V_F	--	0.60	0.65	V
	T_A=125℃	IF= 5.0 A		--	0.55	0.60	
Maximum instantaneous reversecurrent at rated DC blockingvoltage (see fig.3)(Note 1)	T_A=25℃	VR= V_{RRM}	I_R	--	6	100	uA
	T_A=125℃	VR= 80%*V_{RRM}		--	1	5	mA
Typical junction capacitance(see fig.4)	4V,1MHz		C_J	--	200	--	pF

Thermal Characteristcs (Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Symbol	SS56F	Unit
Operating junction	T_J	-55 to 150	℃
Storage temperature range	T_{STG}	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	60	℃/W
	$R_{\theta JC}$	20	

Note： 1.Pulse width < 300 uS, Duty cycle < 2%

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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RATINGANDCHARACTERISTICCURVES

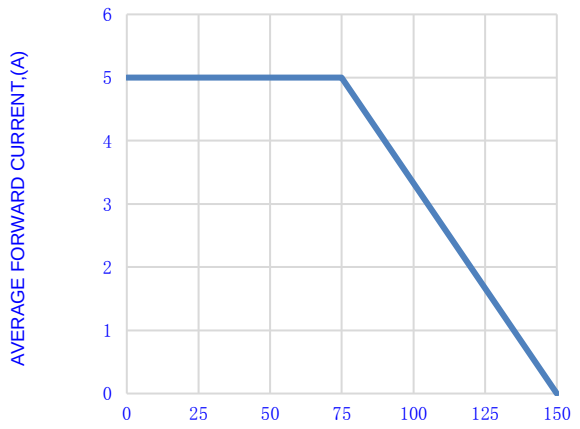

Fig.1- FORWARD CURRENT DERATING CURVE

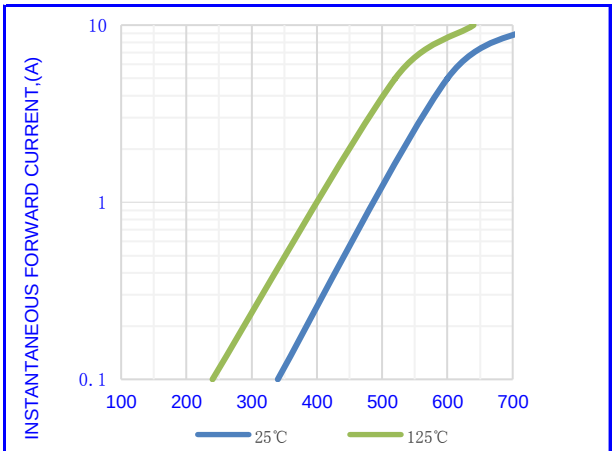

Fig.2-TYPICAL INSTANTANEOUS FORWARD

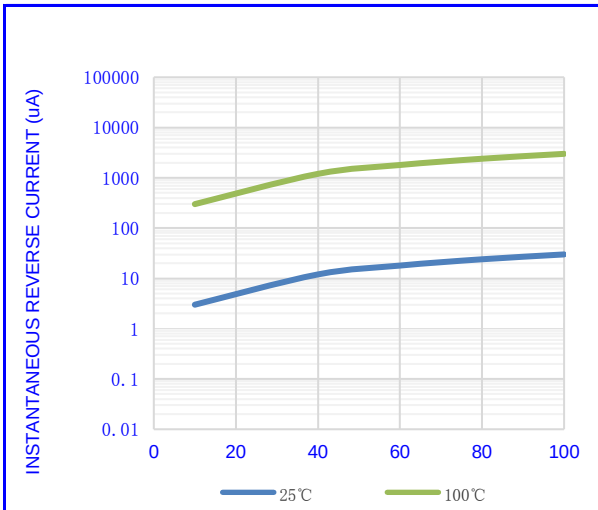

Fig.3-TYPICAL REVERSE CHARACTERISTICS

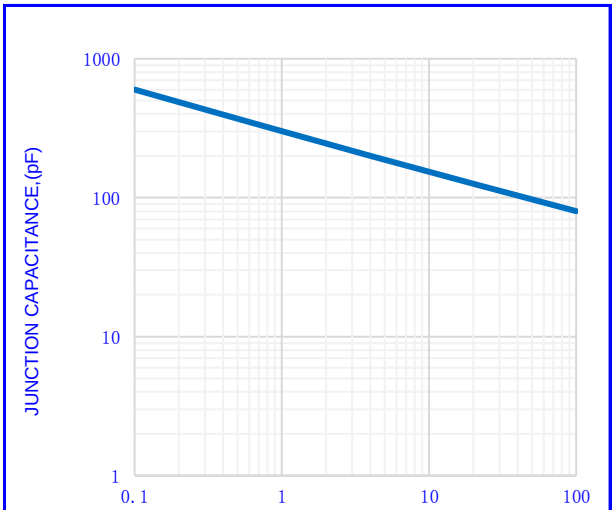

Fig.4- TYPICAL JUNCTION CAPACITANCE

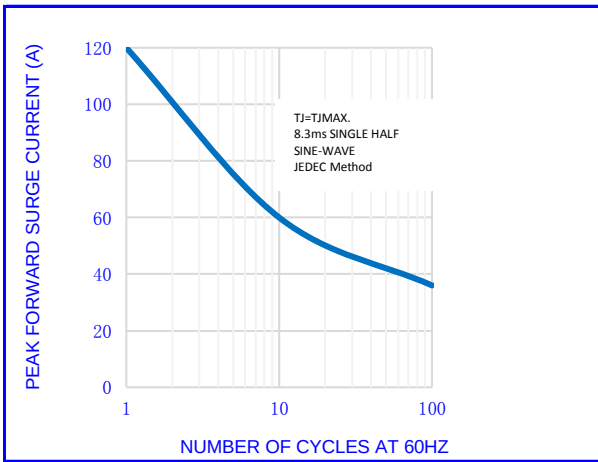

Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

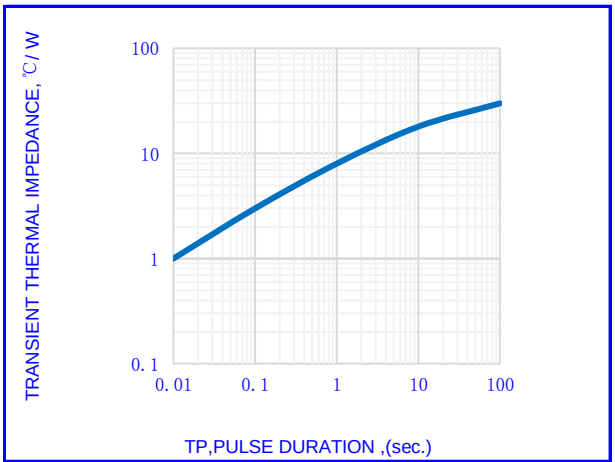

FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

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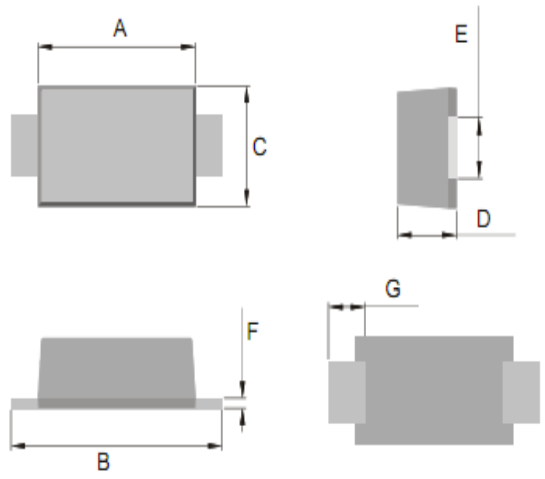
OUTLINE DRAWINGS



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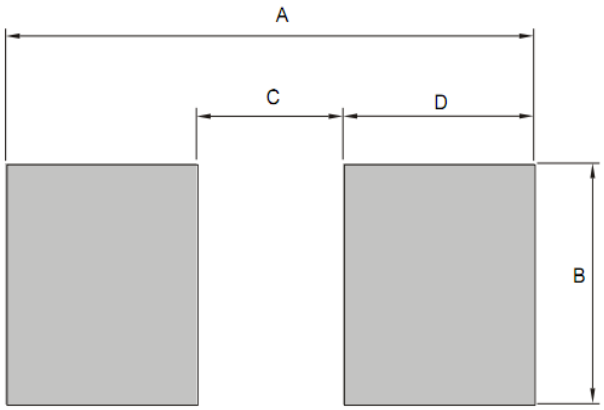
OUTLINE DIMENSIONS

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	3.200	-	3.800	0.126	-	0.150
B	4.400	-	5.300	0.173	-	0.209
C	2.300	-	2.700	0.091	-	0.106
D	0.950	-	1.200	0.037	-	0.047
E	1.300	-	1.600	0.051	-	0.063
F	0.080	-	0.170	0.003	-	0.007
G	0.500	-	1.200	0.020	-	0.047

RECOMMEDNED LAYOUT DRAWINGS



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RECOMMEDNED MOUNTING PAD DIMENSIONS

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	5.300	-	-	0.20866	-
B	-	2.060	-	-	0.081	-
C	-	1.660	-	-	0.065	-
D	-	2.070	-	-	0.082	-

PACKING INFORMATION

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Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size L×W×H(mm)	Quantity (pcs/Inner Box)	Carton Size L×W×H(mm)	Quantity (pcs/carton)
Tape Reel	Φ330	5000	340×340×45	10000	360×360×470	100000

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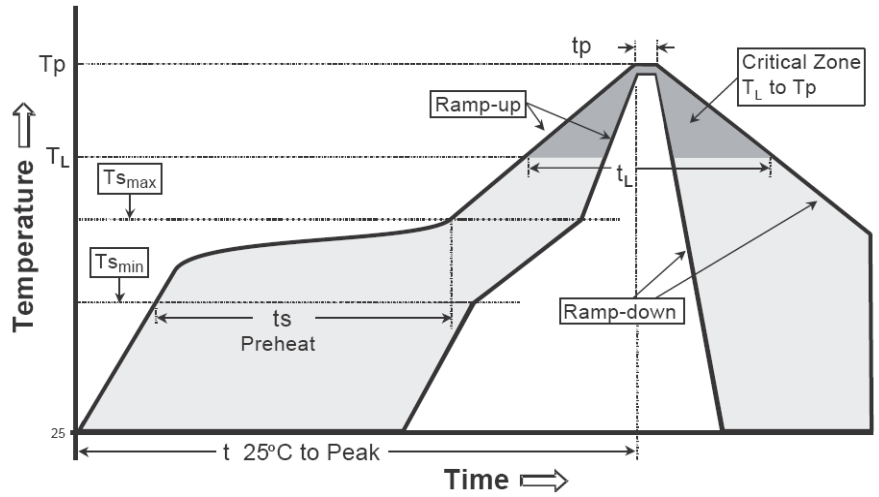
Recommended wave soldering condition

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 (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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