

SF55G

SUPER FAST RECOVERY RECTIFIERS



VOLTAGE: 300 Volts

CURRENT: 5.0 Amperes

DO-27(DO-201AD)

Marking and Polarity

FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low leakage current for high reliability
- Low forward voltage drop for high efficiency
- High surge capability for high reliability
- High temperature soldering guaranteed: 260°C max./10 seconds at terminals

MECHANICAL DATA

- **Package:** DO-27(DO-201AD)
- **Terminals:** Plated axial leads, solderable per MIL-STD-750, method 2026
- **Polarity:** color band denotes cathode end
- **Mounting Position:** Any
- Component in accordance to RoHS 2011/65/EU
- **Weight:** App. 1.0 grams (0.0353 ounce)

TYPICAL APPLICATIONS

- For use in high frequency inverters ,LED Driver etc applications



Remark:

- ①. SF55G=Model,
- ②. NH=niuhang trademark
- ③. FF=Product line code, According to actual changes
DDK=Inter control code, According to actual changes
- ④. White band denotes cathode

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

Parameter	Symbol	SF55G	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	300	V
Maximum RMS voltage	V_{RMS}	210	V
Maximum DC blocking voltage	V_{DC}	300	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	5.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	150	A

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

Parameter	Test Conditions	Symbol	SF55G	Unit
Maximum instantaneous forward voltage (Note 1)	Ta=25°C IF= 5.0 A	V_F	1.25	V
Maximum instantaneous reverse current at rated DC blocking voltage (Note 1)	Ta=25°C @ V_{RRM}	I_{RRM}	5	uA
	Ta=125°C @ 80%* V_{RRM}		100	
Maximum reverse recovery time	$I_F=0.5A$, $I_R=1.0A$, $I_{RR}=0.25A$	T_{RR}	35	ns
Typical junction capacitance	4V, 1MHz	C_J	50	pF

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

Parameter	Symbol	SF55G	Unit
Operating junction and storage temperature range	T_J	-55 to 150	°C
Storage temperature range	T_{STG}	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	25	°C/W
	$R_{\theta JL}$	8	

Note:

1. Pulse width < 300 uS, Duty cycle < 2%
2. Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length, Polymide PCB, 2 oz Copper.
Cathode pad dimensions 18.8x14.4mm , Anode pad dimensions- (5.6x14.4mm)

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RATING AND CHARACTERISTIC CURVES

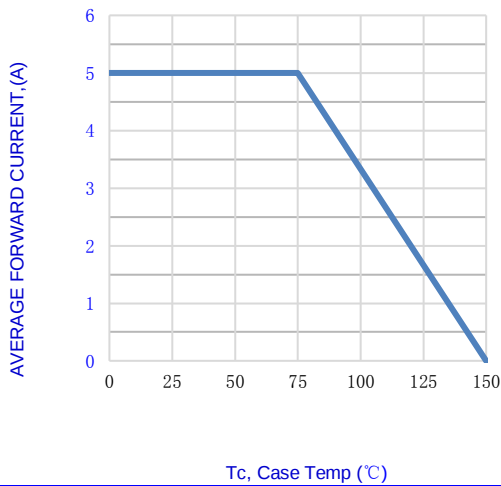


Fig.1-FORWARD CURRENT DERATING CURVE

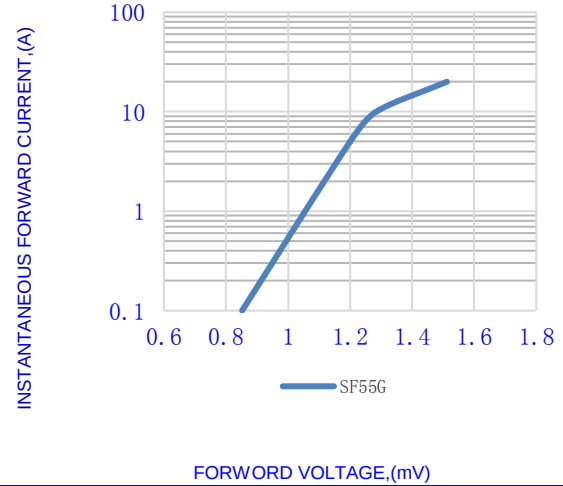


Fig.2- TYPICAL INSTANTANEOUS FORWARD

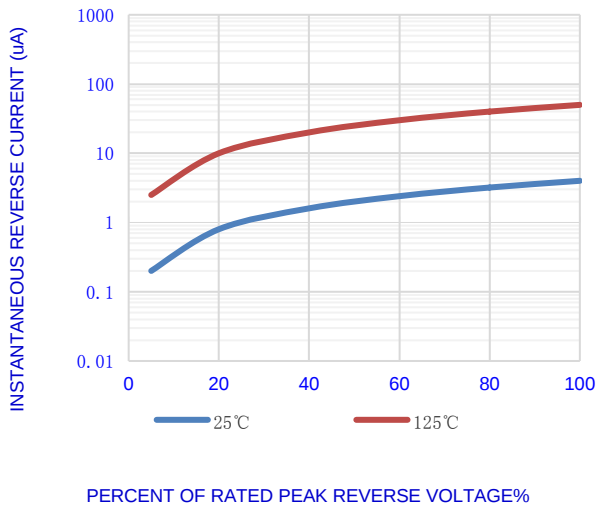


Fig.3- TYPICAL REVERSE CHARACTERISTICS

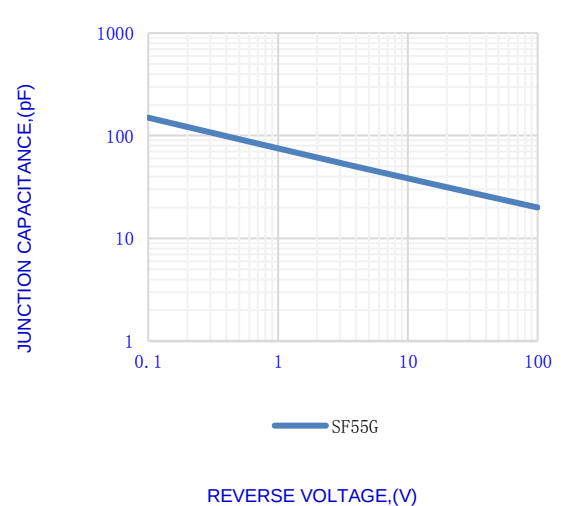


Fig.4-TYPICAL JUNCTION CAPACITANCE

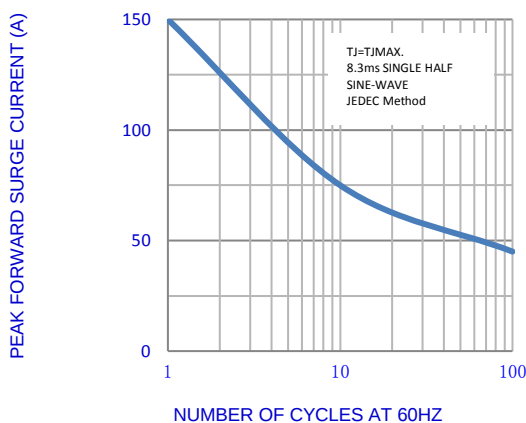


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

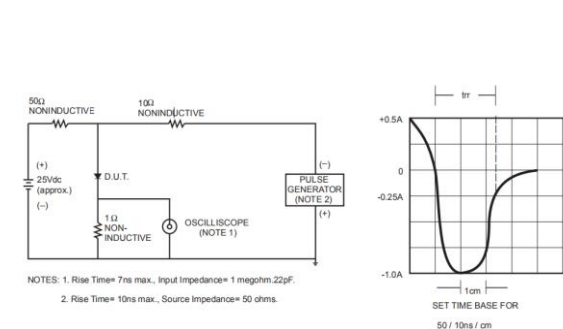


Fig.6-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT



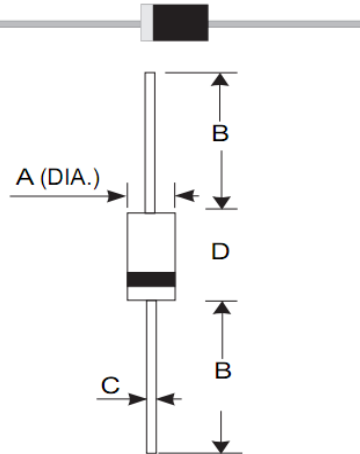
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OUTLINE DRAWINGS

DO-27(DO-201AD)



OUTLINE DIMENSIONS

DIM.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.900	-	5.600	0.193	-	0.220
B	24.500	-	26.400	0.965	-	1.039
C	0.900	-	1.300	0.035	-	0.051
D	7.200	-	9.500	0.285	-	0.374

PACKING INFORMATION

DO-27(DO-201AD)

Package Method	Inter Box Size L×W×H(mm)	Quantity (pcs/box)	Outer Carton Size L×W×H(mm)	Quantity (pcs/carton)
Box Package	250*75*140	1250	420*280*310	12500

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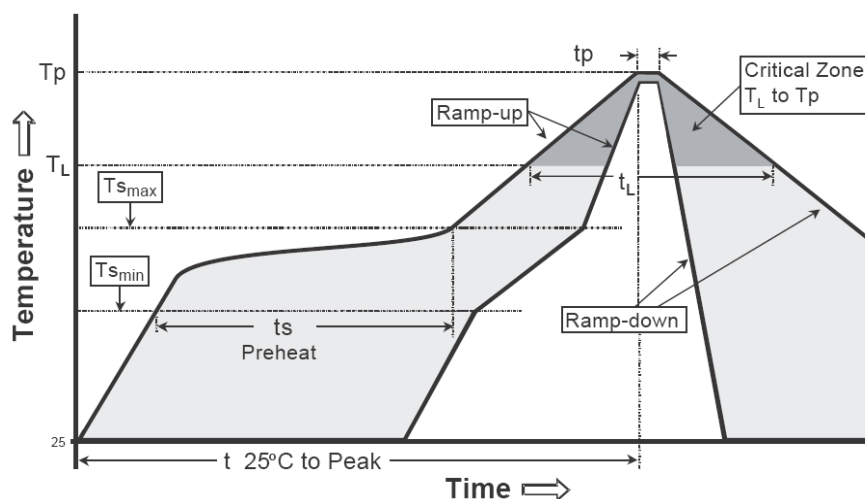
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Recommended wave soldering condition

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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