

SF34G THRU SF38G

SUPER FAST RECOVERY RECTIFIERS



VOLTAGE: 200~600 Volts

CURRENT: 3.0 Amperes

DO-27(DO-201AD)

Marking and Polarity

FEATURES

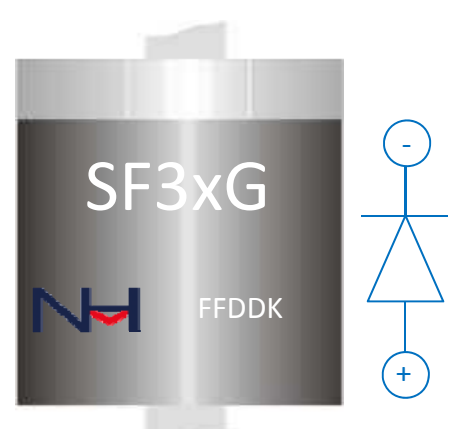
- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low leakage current for high reliability
- Low forward voltage drop for high efficiency
- High surge capability for high reliability
- High temperature soldering guaranteed:260°C max./10 seconds at terminals

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. SF3xG=Module,x=4,6,8
- 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 | SF34G | SF36G | SF38G | Unit |
|--|-------------|-------|-------|-------|------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 200 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 140 | 280 | 420 | V |
| Maximum DC blocking voltage | V_{DC} | 200 | 400 | 600 | 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) | I_{FSM} | 150 | | | A |

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

| Parameter | Test Conditions | Symbol | SF34G | SF36G | SF38G | Unit |
|---|--|-----------|----------|-------|-------|------|
| Maximum instantaneous forward voltage (Note 1) | Ta=25°C IF= 3.0 A | V_F | 0.95 | 1.25 | 1.70 | V |
| Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1) | Ta=25°C @ V_{RRM} Ta=125°C @ 80%* V_{RRM} | I_{RRM} | 5 100 | | | uA |
| 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 | SF34G | SF36G | SF38G | 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) | $R_{\theta JA}$ $R_{\theta JL}$ | 25 8 | | | °C/W |

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

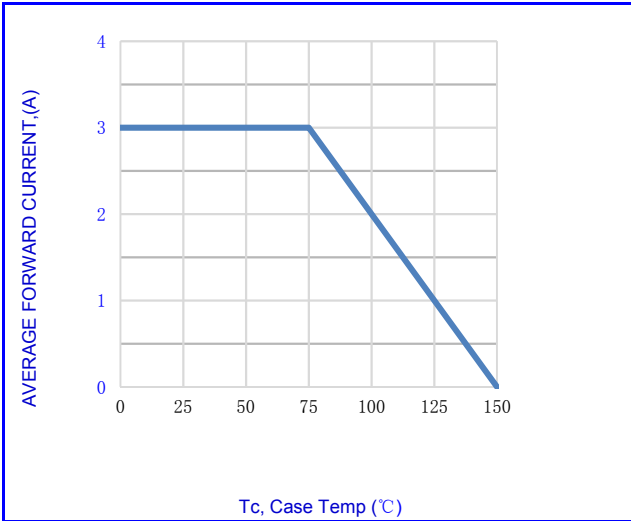


Fig.1-FORWARD CURRENT DERATING CURVE

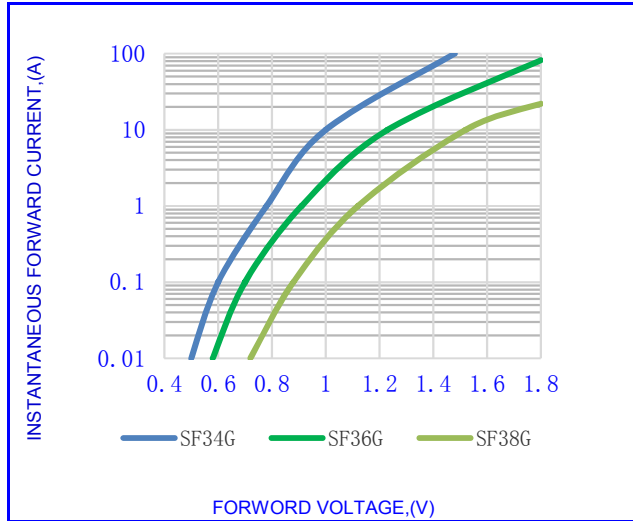


Fig.2- TYPICAL INSTANTANEOUS FORWARD

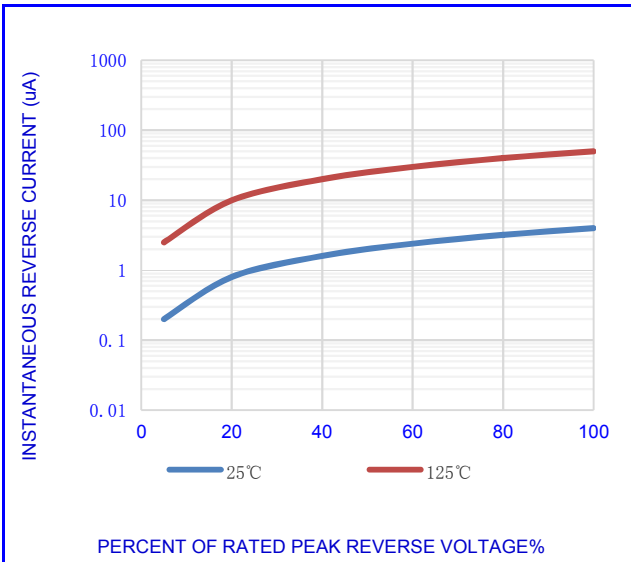


Fig.3- TYPICAL REVERSE CHARACTERISTICS

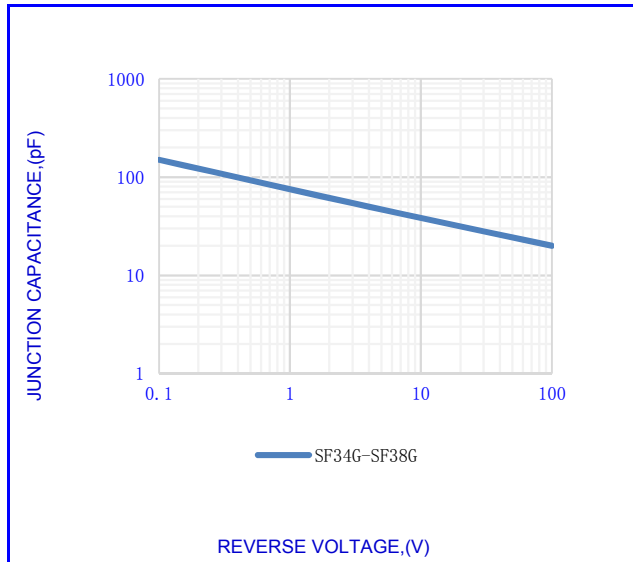


Fig.4-TYPICAL JUNCTION CAPACITANCE

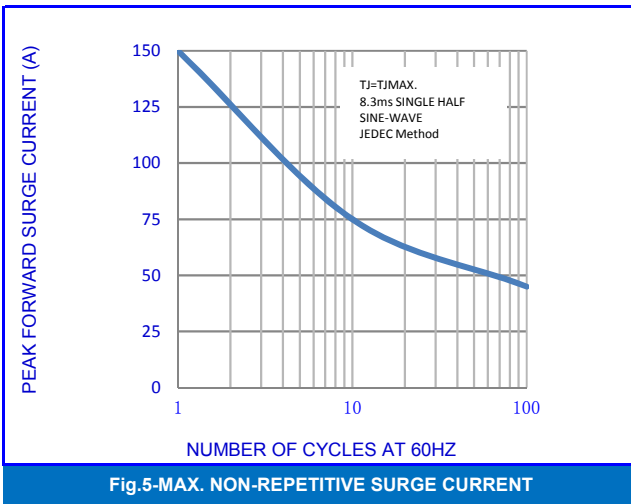


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

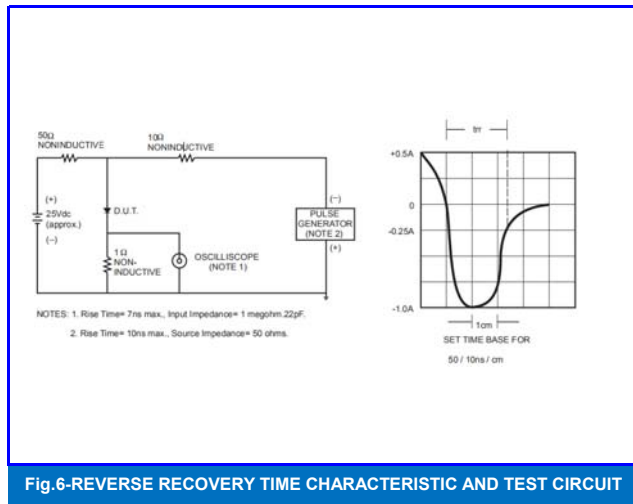


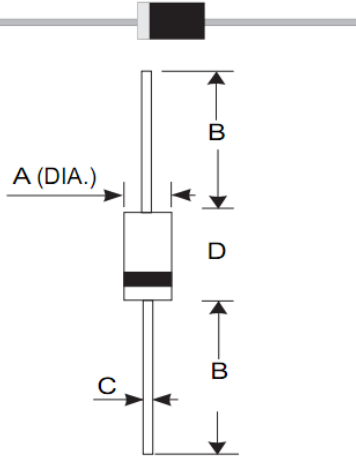
Fig.6-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT

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OUTLINE DRAWINGS

DO-27(DO-201AD)



OUTLINE DIMENSIONS

| DIM. | Milimeters | | | 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 |

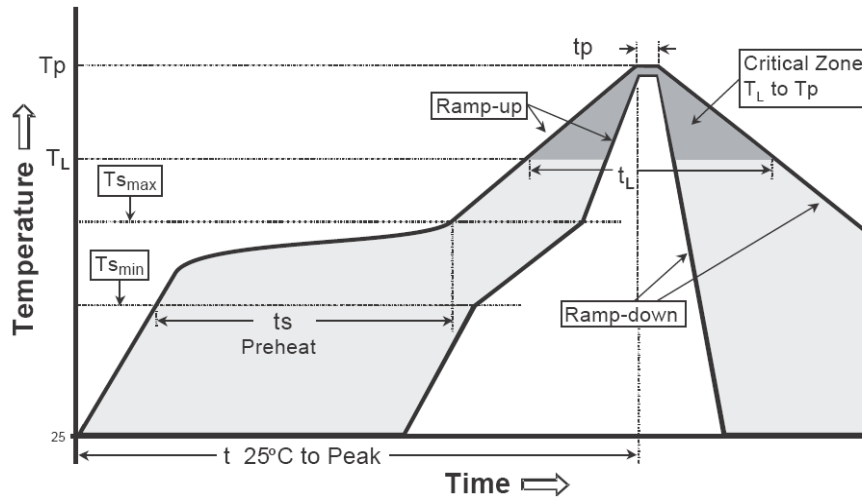
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Recommended wave soldering condition

| | | |
|-----------------|------------------|-----------------|
| 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 (Tsmmax 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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