

## SR320 THRU SR3200

### SCHOTTKY RECTIFIERS



**VOLTAGE:** 20-200 Volts

**CURRENT:** 3.0 Amperes

DO-27(DO-201AD)

Marking and Polarity

#### FEATURES

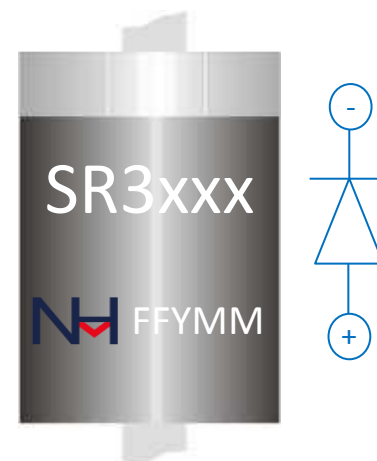
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,ultra low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU

#### MECHANICAL DATA

- Case: JEDEC DO-201AD molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750,method 2026
- Polarity: color band denotes cathode end
- Mounting Position: Any
- Weight: 1.05 grams

#### TYPICAL APPLICATIONS

- For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling ,and polarity protection applications



Remark:

- ①. SR3xxx=Model,xxx=20,30,40,45,60,80,100,150,200
- ②. NH=niuhang trademark
- ③. FFDDK=Internal control code,According to actual changes
- ④. White band denotes cathode

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

| Parameter                                                                                                    | Symbol      | SR 320 | SR 330 | SR 340 | SR 345 | SR 360 | SR 380 | SR 3100 | SR 3150 | SR 3200 | Unit |
|--------------------------------------------------------------------------------------------------------------|-------------|--------|--------|--------|--------|--------|--------|---------|---------|---------|------|
| Maximum repetitive peak reverse voltage                                                                      | $V_{RRM}$   | 20     | 30     | 40     | 45     | 60     | 80     | 100     | 150     | 200     | V    |
| Maximum RMS voltage                                                                                          | $V_{RMS}$   | 14     | 21     | 28     | 32     | 42     | 56     | 70      | 105     | 140     | V    |
| Maximum DC blocking voltage                                                                                  | $V_{DC}$    | 20     | 30     | 40     | 45     | 60     | 80     | 100     | 150     | 200     | 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) | $I_{FSM}$   | 80     |        |        |        |        |        |         |         |         | A    |

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

| Parameter                                                                                      | Symbol    | SR 320      | SR 330 | SR 340 | SR 345 | SR 360      | SR 380 | SR 3100     | SR 3150 | SR 3200 | Unit |
|------------------------------------------------------------------------------------------------|-----------|-------------|--------|--------|--------|-------------|--------|-------------|---------|---------|------|
| Maximum instantaneous forward voltage (Note 1) @ 3.0 A                                         | $V_F$     | 0.55        |        |        |        | 0.70        | 0.85   |             |         | 0.95    | V    |
| Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)<br>Ta=25℃<br>Ta=125℃ | $I_{RRM}$ | 50          |        |        |        | 10          |        |             |         | uA      |      |
|                                                                                                |           | 20          |        |        |        | 10          |        | 2           | mA      |         |      |
| Typical junction capacitance (Note 2)                                                          | $C_J$     | 500         |        |        |        | 400         |        |             |         | pF      |      |
| Operating junction and Storage temperature range                                               | $T_J$     | -65 to +125 |        |        |        | -65 to +150 |        | -65 to +175 |         | ℃       |      |
| Storage temperature range                                                                      | $T_{STG}$ | -65 to +125 |        |        |        | -65 to +150 |        | -65 to +175 |         |         |      |

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

| Parameter                           | Symbol          | SR 320 | SR 330 | SR 340 | SR 345 | SR 360 | SR 380 | SR 3100 | SR 3150 | SR 3200 | Unit |
|-------------------------------------|-----------------|--------|--------|--------|--------|--------|--------|---------|---------|---------|------|
| Typical thermal resistance (Note 3) | $R_{\theta JA}$ | 25     |        |        |        |        |        |         |         |         | °C/W |
|                                     | $R_{\theta JL}$ | 8      |        |        |        |        |        |         |         |         |      |

- Note:
- 1.Pulse width < 300 μs, Duty cycle < 2%
  - 2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
  - 3.Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length,Polymide PCB, 2 oz Copper.
  - 4.Cathode pad dimensions 18.8x14.4mm , Anode pad dimensions- (5.6x14.4mm)

SR320 THRU SR3200

SCHOTTKY RECTIFIERS



RATING AND CHARACTERISTIC CURVES

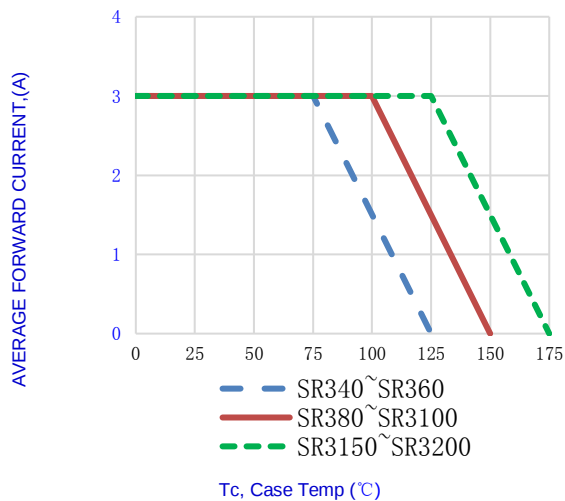


Fig.1-FORWARD CURRENT DERATING CURVE

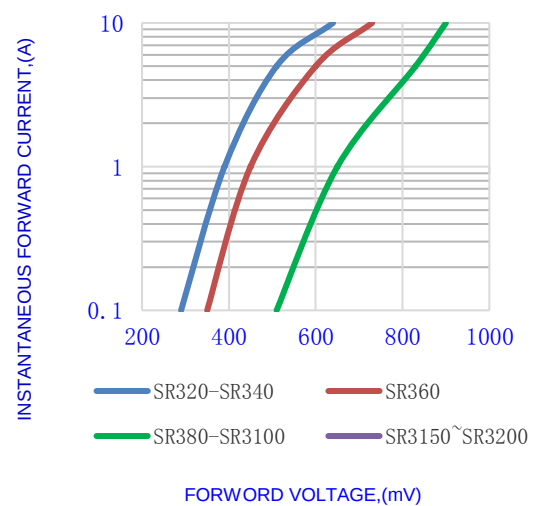


Fig.2- TYPICAL INSTANTANEOUS FORWARD

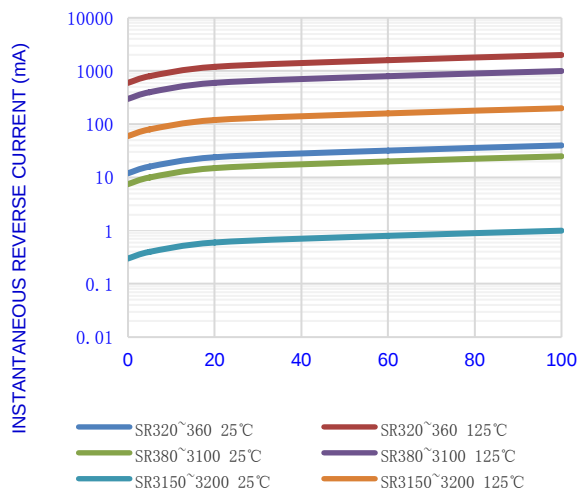


Fig.3- TYPICAL REVERSE CHARACTERISTICS

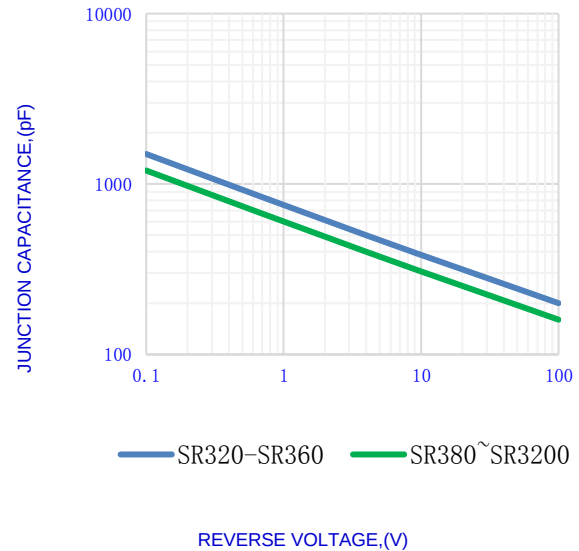


Fig.4-TYPICAL JUNCTION CAPACITANCE

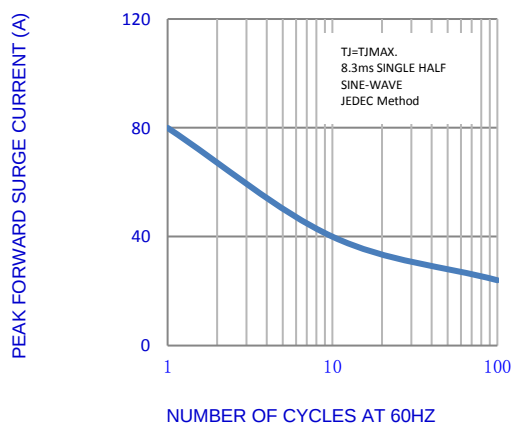


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

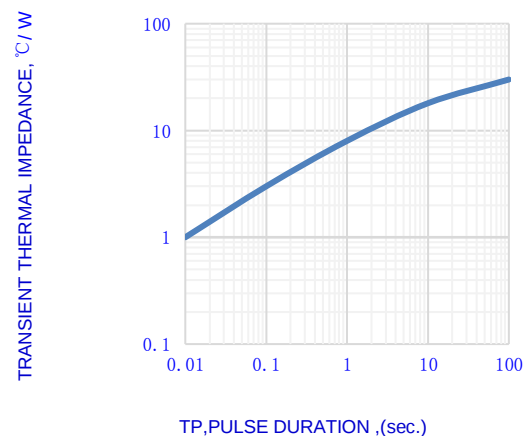


Fig.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

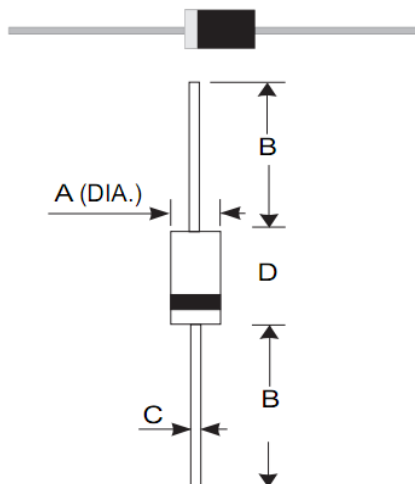


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OUTLINE DRAWINGS

DO-27(DO-201AD)



| OUTLINE DIMENSIONS |             |      |      |        |      |       |
|--------------------|-------------|------|------|--------|------|-------|
| DIM                | MILLIMETERS |      |      | INCHES |      |       |
|                    | Min.        | Typ. | Max. | Min.   | Typ. | Max.  |
| A                  | 4.9         | -    | 5.6  | 0.193  | -    | 0.220 |
| B                  | 24.5        | -    | 26.4 | 0.965  | -    | 1.039 |
| C                  | 0.9         | -    | 1.3  | 0.035  | -    | 0.051 |
| D                  | 7.2         | -    | 9.5  | 0.285  | -    | 0.374 |

Packing Information

| Package         | Pack | Box Size<br>L×W×H(mm) | Quantity<br>(pcs/box) | Carton Size<br>L×W×H(mm) | Quantity<br>(pcs/carton) |
|-----------------|------|-----------------------|-----------------------|--------------------------|--------------------------|
| DO-27(DO-201AD) | B/G  | 250*75*140            | 1250                  | 420*280*310              | 12500                    |

**SR320 THRU SR3200**

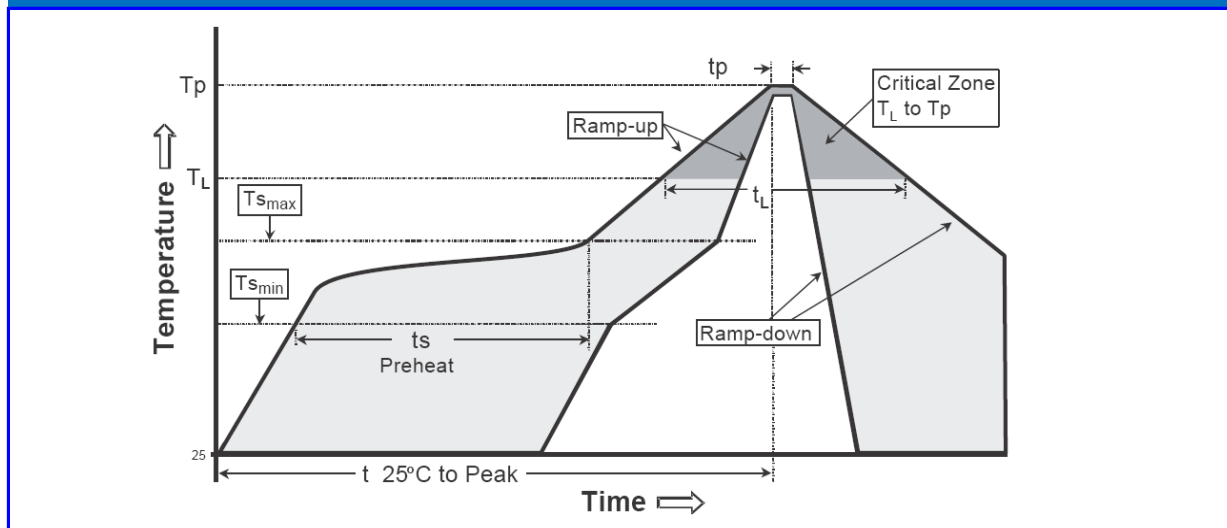
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**Recommended wave soldering condition**

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