

SR540L

SUPER LOW VF SCHOTTKY RECTIFIERS



| | | | | | |
|-----------------|----------|-----------------|-----------|------------------------|-----------------------------|
| VOLTAGE: | 40 Volts | CURRENT: | 5 Amperes | DO-27(DO-201AD) | Marking and Polarity |
|-----------------|----------|-----------------|-----------|------------------------|-----------------------------|

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Softest, fast switching capability
- Low Forward Voltage Drop
- High temperature soldering guaranteed:260 C/10 seconds at terminals
- Lead Free Finish, RoHS Compliant

MECHANICAL DATA

- Case:** JEDEC DO-201AD molded plastic body
- Terminals:** Plated axial leads, solderable per MIL-STD-750,method 2026
- Mounting Position:** Any
- Weight:**App. 1.05 grams (0.0353 ounce)

TYPICAL APPLICATIONS

- Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

Remark:

- SR540L=Model No.
- NH=niuhang trademark
- FFDDK=Internal control code,According to actual changes
- White band denotes cathode

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

| Parameter | Symbol | SR540L | Unit |
|---|--------------------|--------|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 40 | V |
| Maximum RMS voltage | V _{RMS} | 28 | V |
| Maximum DC blocking voltage | V _{DC} | 40 | V |
| Maximum average forward rectified current(see fig.1) | I _{F(AV)} | 5 | 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} | 80 | A |

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

| Parameter | Test Conditions | | Symbol | SR540L | | | Unit |
|--|-----------------------|--|----------------|--------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| Maximum instantaneous forward voltage(see fig.2)(Note 1) | T _A =25°C | I _F = 5 A | V _F | -- | 0.44 | 0.51 | V |
| | T _A =125°C | | | -- | 0.40 | 0.46 | |
| Maximum instantaneous reversecurrent at rated DC blockingvoltage (see fig.3)(Note 1) | T _A =25°C | V _R = V _{RRM} V _R = 80%*V _{RRM} | I _R | -- | 50 | 100 | uA |
| | T _A =125°C | | | -- | -- | 20 | mA |
| Typical junction capacitance(see fig.4) | 4V,1MHz | | C _J | -- | 300 | -- | pF |

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

| Parameter | Symbol | SR540L | Unit |
|-------------------------------------|------------------|------------|------|
| Operating junction | T _J | -55 to 150 | °C |
| Storage temperature range | T _{STG} | -55 to 150 | |
| Typical thermal resistance (Note 2) | R _{θJA} | 25 | °C/W |
| | R _{θJL} | 8 | |

Note:

- Pulse width < 300 uS, Duty cycle < 2%
- Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length,Polymide PCB, 2 oz Copper.

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RATING AND CHARACTERISTIC CURVES

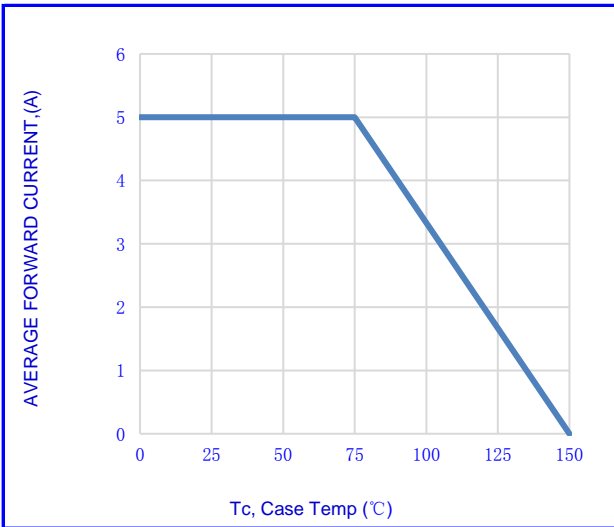


Fig.1- FORWARD CURRENT DERATING CURVE

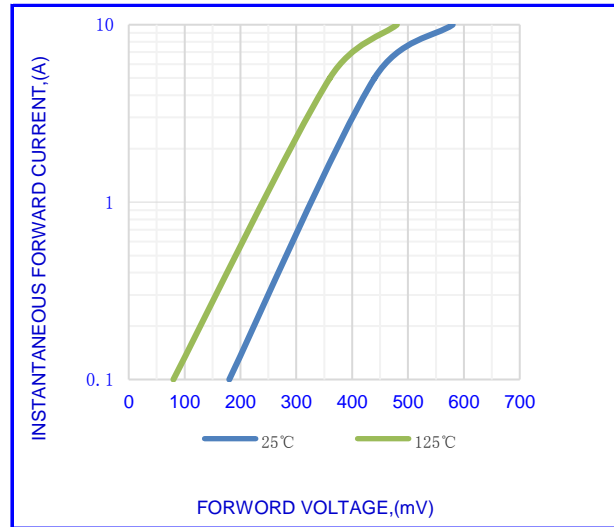


Fig.2-TYPICAL INSTANTANEOUS FORWARD

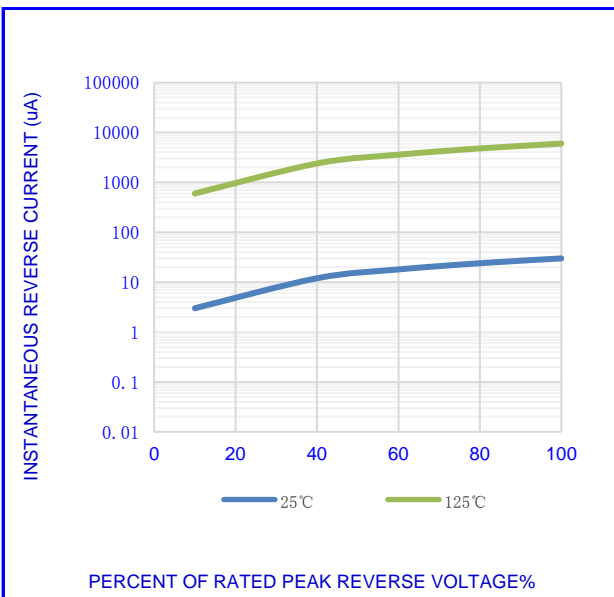


Fig.3-TYPICAL REVERSE CHARACTERISTICS

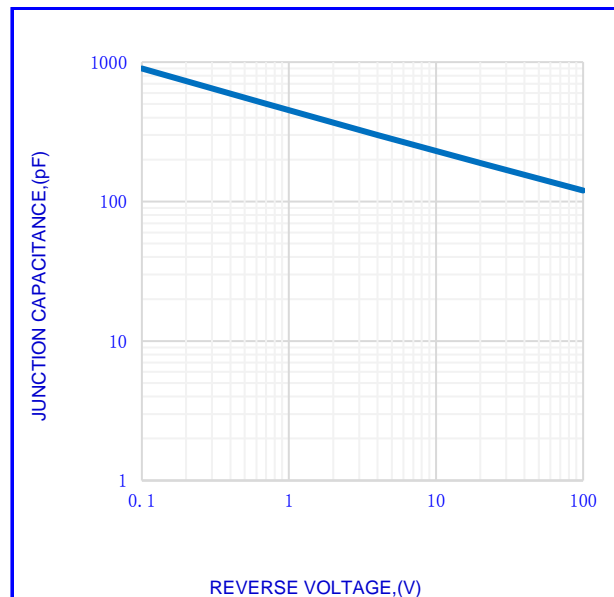


Fig.4- TYPICAL JUNCTION CAPACITANCE

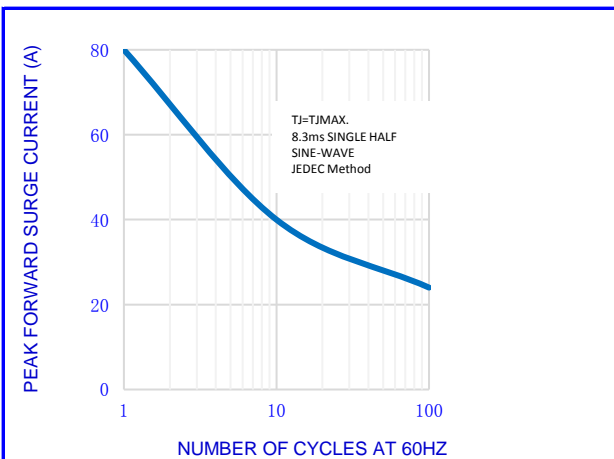


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

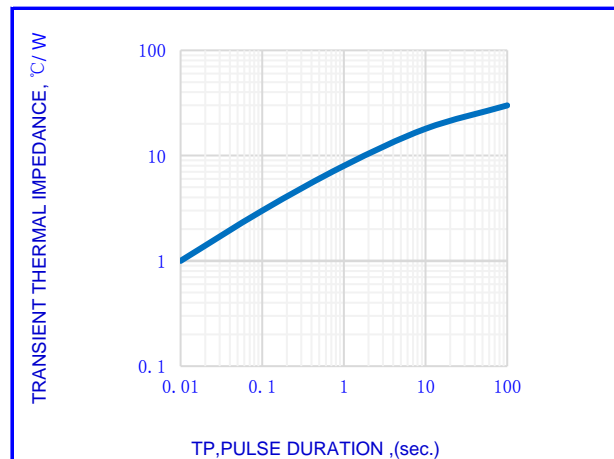


FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

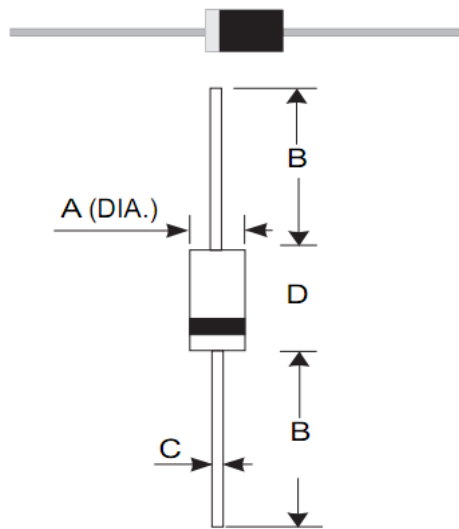
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OUTLINE DRAWINGS

DO-27(DO-201AD)



OUTLINE DIMENSIONS

| Dim. | Milimeters | | | 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 LxWxH(mm) | Quantity (pcs/box) | Carton Size LxWxH(mm) | Quantity (pcs/carton) |
|-----------------|------|-----------------------|-----------------------|--------------------------|--------------------------|
| DO-27(DO-201AD) | B/G | 255*75*140 | 1250 | 410*280*330 | 12500 |

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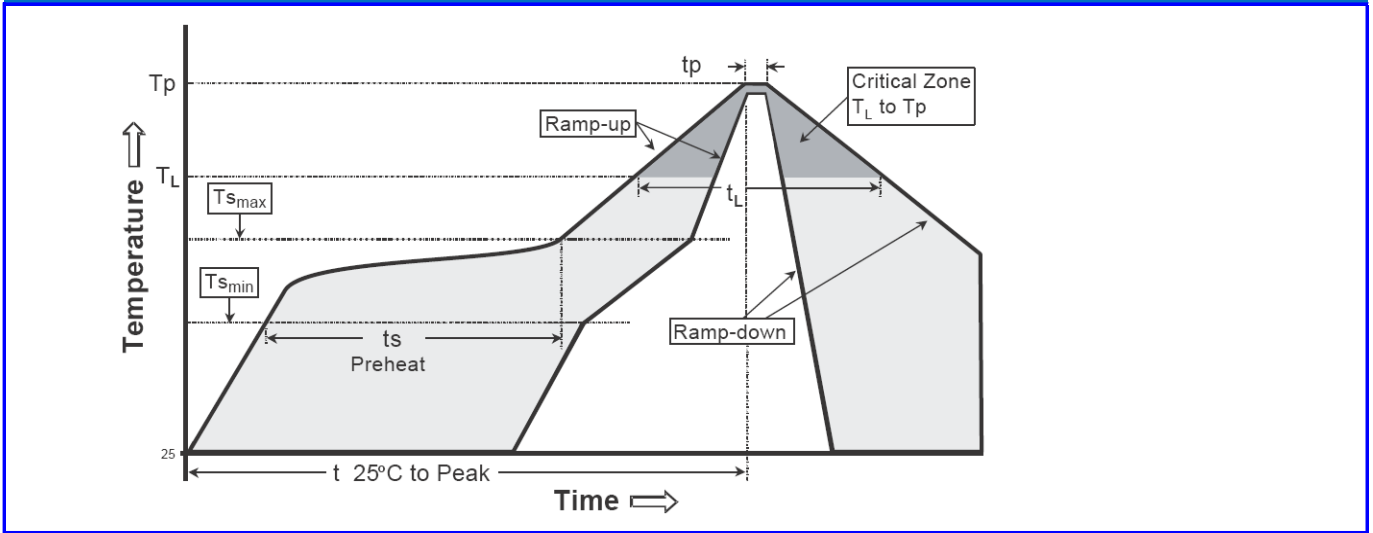
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Recommended wave soldering condition

| | | |
|-----------------|------------------|-----------------|
| 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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