

SR545L

SUPER LOW VF SCHOTTKY RECTIFIERS



VOLTAGE: 45 Volts **CURRENT:** 5 Amperes **DO-27(DO-201AD)** Marking and Polarity

FEATURES

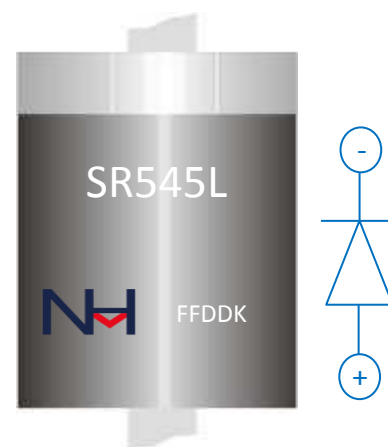
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Softest, fast switching capability
- Low Forward Voltage Drop
- High temperature soldering guaranteed: 260 °C/10 seconds at terminals
- Lead Free Finish, RoHS Compliant

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:

- SR545L=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	SR545L	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum RMS voltage	V_{RMS}	31.5	V
Maximum DC blocking voltage	V_{DC}	45	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	SR545L			Unit
				Min.	Typ.	Max.	
Maximum instantaneous forward voltage(see fig.2)(Note 1)	$T_A=25^{\circ}\text{C}$	$I_F=5\text{ A}$	V_F	--	0.49	0.56	V
	$T_A=125^{\circ}\text{C}$			--	0.44	0.51	
Maximum instantaneous reverse current at rated DC blocking voltage (see fig.3)(Note 1)	$T_A=25^{\circ}\text{C}$	$V_R=V_{RRM}$	I_R	--	50	100	μA
	$T_A=125^{\circ}\text{C}$	$V_R=80\%*V_{RRM}$		--	--	20	
Typical junction capacitance(see fig.4)	4V, 1MHz		C_J	--	300	--	pF

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

Parameter	Symbol	SR545L	Unit
Operating junction	T_J	-55 to 150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	25	$^{\circ}\text{C/W}$
	$R_{\theta JL}$	8	

Note:

- Pulse width < 300 μs , 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

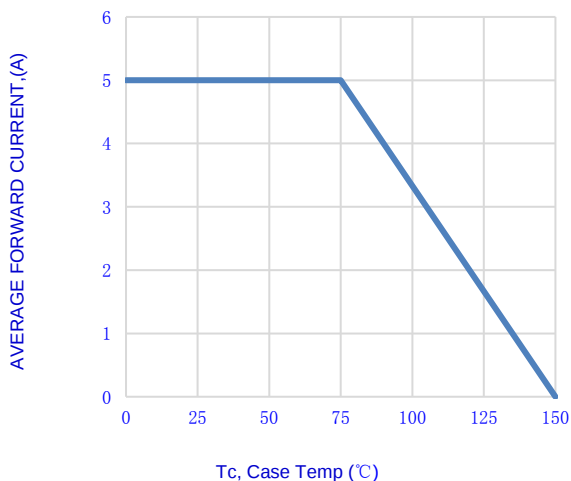


Fig.1- FORWARD CURRENT DERATING CURVE

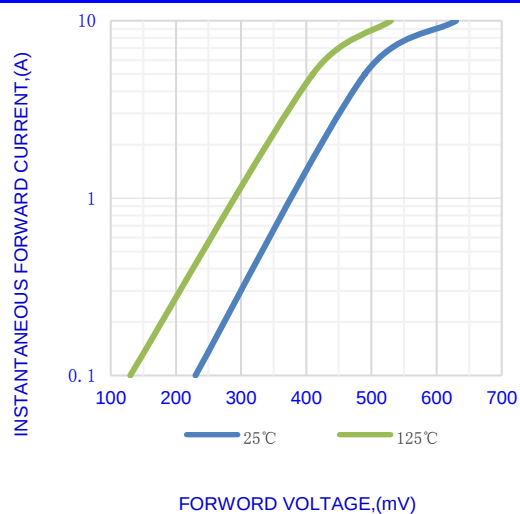


Fig.2-TYPICAL INSTANTANEOUS FORWARD

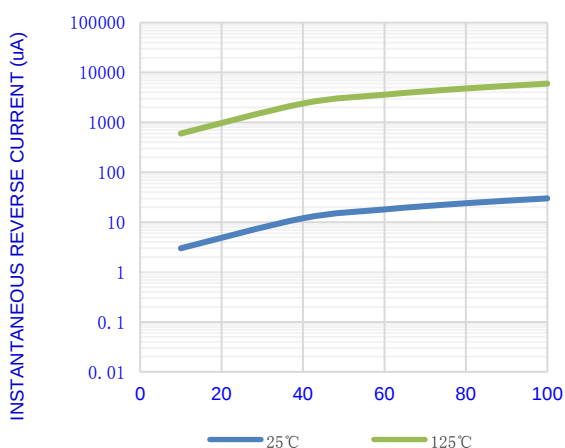


Fig.3-TYPICAL REVERSE CHARACTERISTICS

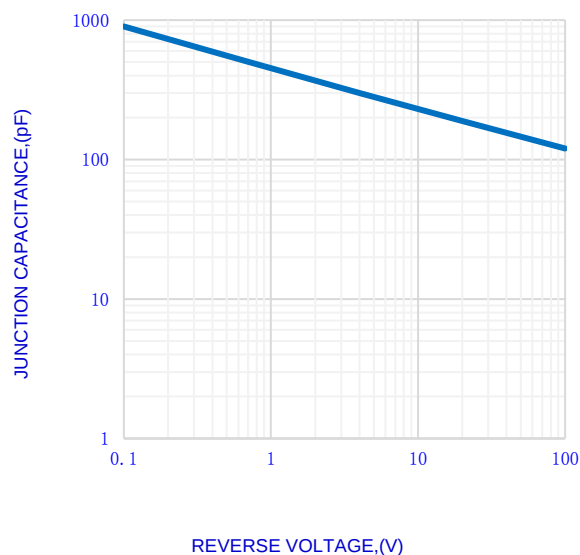


Fig.4- TYPICAL JUNCTION CAPACITANCE

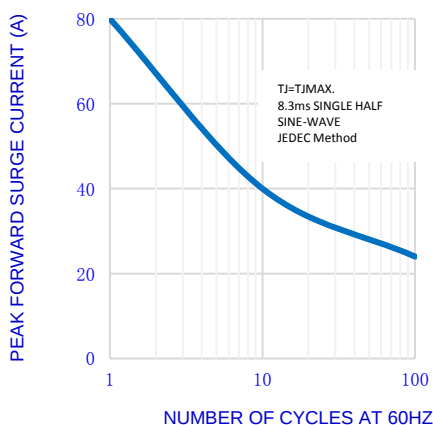


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

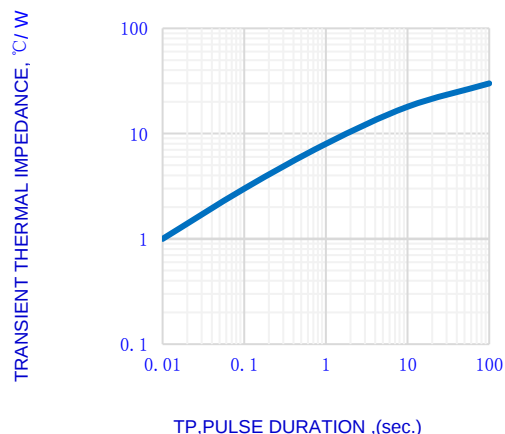


FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

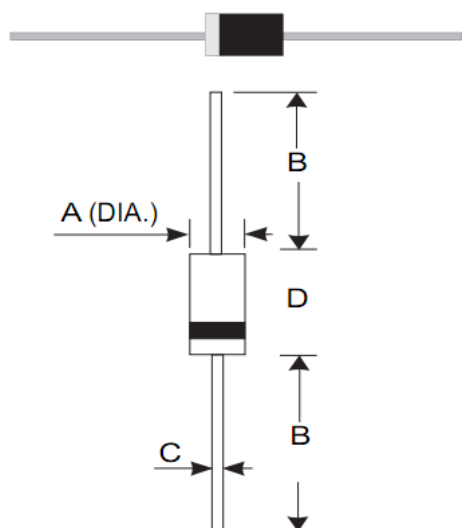
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OUTLINE DRAWINGS

DO-27(DO-201AD)



OUTLINE DIMENSIONS

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

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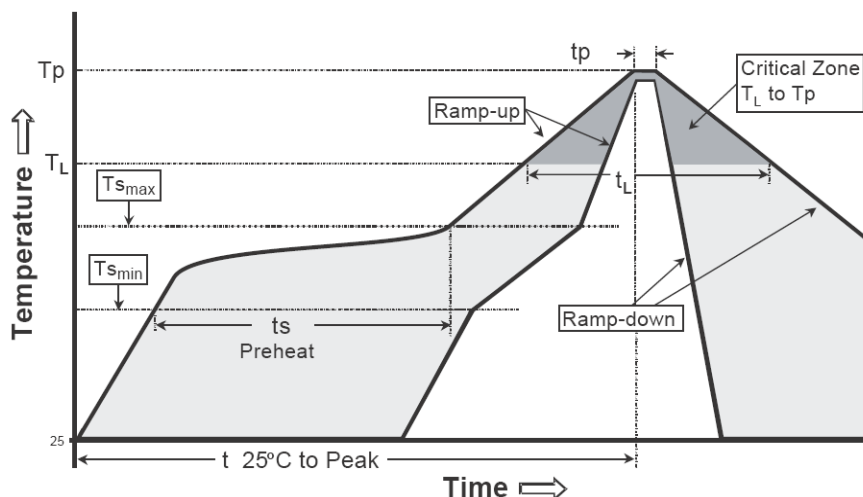
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Recommended wave soldering condition

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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