

SR520 THRU SR5200
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VOLTAGE 20~200 Volts

CURRENT 5.0 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:

- SR5xxx=Modle,xxx=20,30,40,45C60,80,100,150,200
- NH=niu hang trademark
- FFDDK=Inernal control code,According to actual changes
- White band denotes cathode

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

Parameter	Symbol	SR 520	SR 530	SR 540	SR 545	SR 560	SR 580	SR 5100	SR 5150	SR 5200	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)	$I_{F(AV)}$	5.0									A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	120									A

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

Parameter	Symbol	SR 520	SR 530	SR 540	SR 545	SR 560	SR 580	SR 5100	SR 5150	SR 5200	Unit	
Maximum instantaneous forward voltage (Note 1) @ 5.0 A	V_F	0.55				0.70	0.80	0.90			V	
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	I_{RRM}	100				50		10			uA	
		15				10		8			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			°C	
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 520	SR 530	SR 540	SR 545	SR 560	SR 580	SR 5100	SR 5150	SR 5200	Unit	
Typical thermal resistance (Note 3)	$R_{\theta JA}$	25										°C/W
	$R_{\theta JL}$	8										

Note: Pulse width < 300 uS, Duty cycle < 2%

Measured at 1MHz and applied reverse voltage of 4.0V D.C.

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

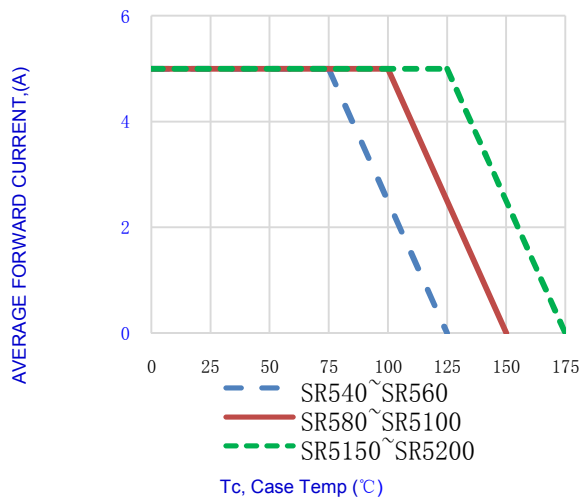


Fig.1-FORWARD CURRENT DERATING CURVE

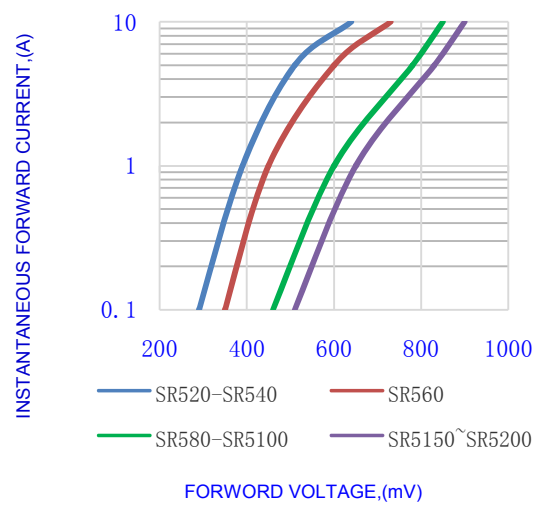


Fig.2- TYPICAL INSTANTANEOUS FORWARD

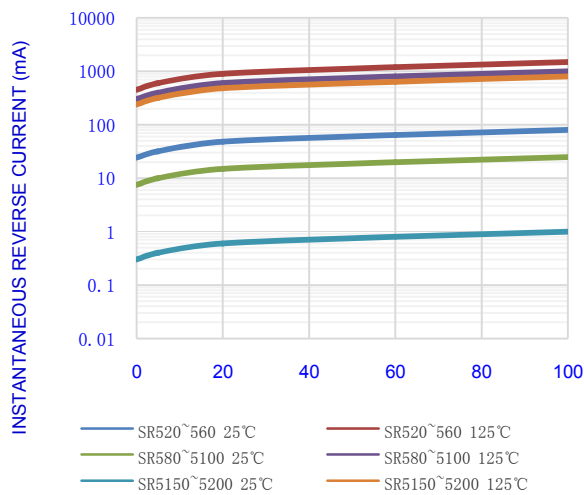


Fig.3- TYPICAL REVERSE CHARACTERISTICS

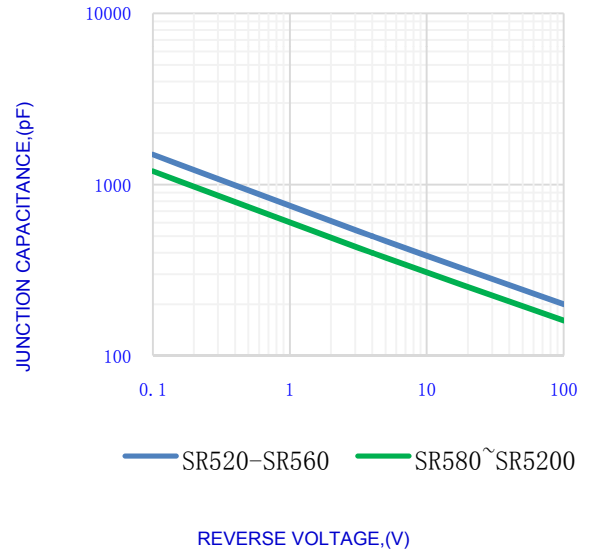


Fig.4-TYPICAL JUNCTION CAPACITANCE

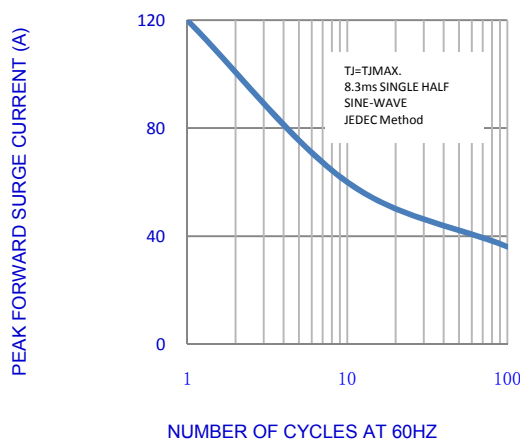


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

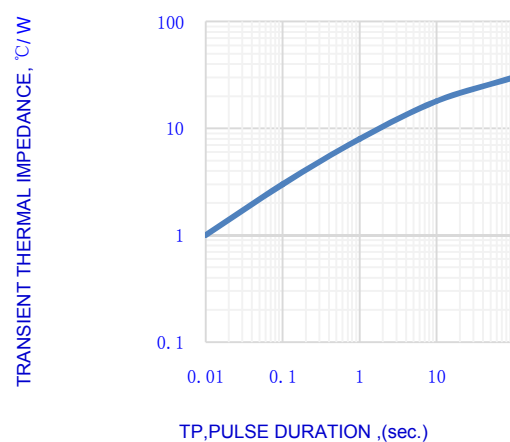


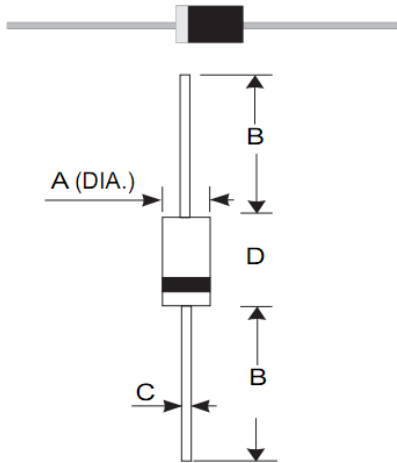
Fig.6-TYPICAL TRANSIENT THERMAL IMPEDANCE



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OUTLINE DRAWINGS



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

DO-27(DO-201AD)

Packing Information

Package	Pack	Box Size L×W×H(mm)	Quantity (pcs/box)	Carton Size L×W×H(mm)	Quantity (box/carton)
DO-27(DO-201AD)	B/G	250*75*140	1250	420*280*310	10

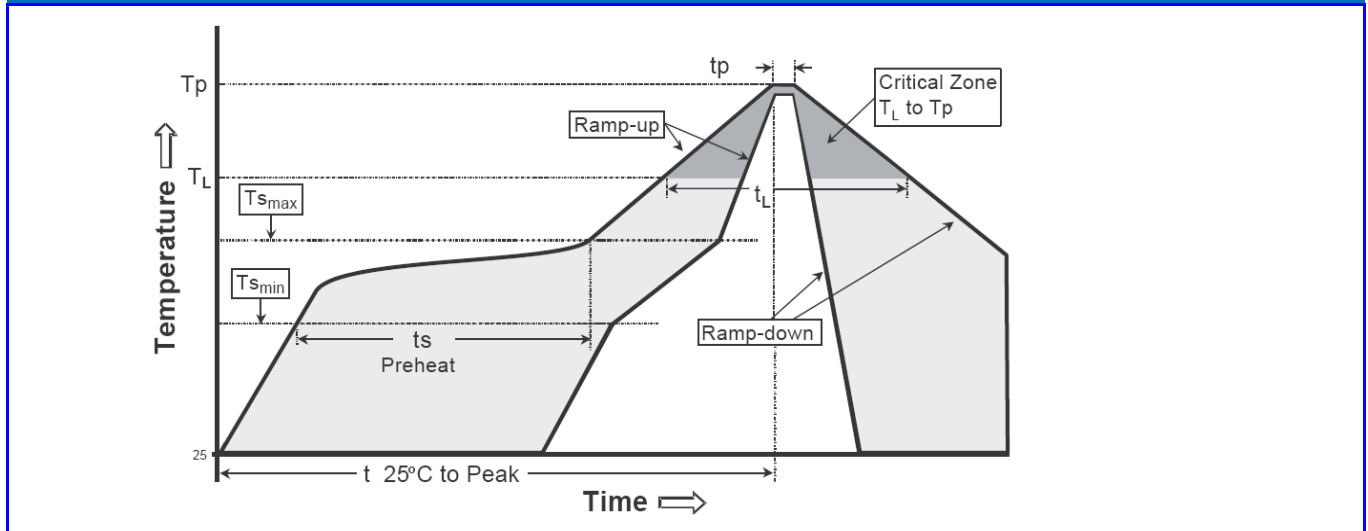
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Recommended wave soldering condition

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 (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T _{s min}) -Temperature Max(T _{s max}) -Time(t _{s min} to t _{s max})	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T _P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t _p)	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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