

SR540 THRU SR5200
Schottky Barrier Rectifiers



Voltage:	40~200 Volts	Current:	5 A	Package:	DO-27
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Features

- NH'S Plane Schottky Barrier Chip Technology
- Low Forward Voltage Drop For High Efficiency
- Low Power Loss For High Reliability
- High Frequency Switching Speed

Mechanical Data

- **Case:** Molded With UL-94 ClassV-0 Recognized, RoHS-Compliant
- **Polarity:** Look At The Diagram And Polarity On The Right
- **Terminals:** Tin Plated Leads,Solderable Per J-STD-002 And JESD22-B102

Typical Applications

- Switch Mode Power Supplies (SMPS)
- Fast Chargers
- LED Driver And Monitor Lighting
- Automotive Electronics And Charging Posts

Diagram:



Polarity:



Single Phase,Half Wave,60Hz,Resistive Or Inductive Load.For Capacitive Load,Derate Current By 20%

Maximum Ratings (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SR 540	SR 545	SR 560	SR 580	SR 5100	SR 5150	SR 5200	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	40	45	60	80	100	150	200	V
Maximum RMS Voltag		V_{RMS}	28	32	42	56	70	105	140	V
Maximum DC Blocking Voltage		V_{DC}	40	45	60	80	100	150	200	V
Maximum Average Forward Rectified Current		$I_{F(AV)}$	5							A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	120							A
Current Squared Time	$t < 8.3ms$	I^2t	59.8							A ² sec

Electrical Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SR 540	SR 545	SR 560	SR 580	SR 5100	SR 5150	SR 5200	Unit
Maximum Instantaneous Forward Voltage	$I_F = 5.0 \text{ A}$	V_F	0.55		0.70	0.85		0.90		V
Maximum DC Reverse Current at Rated DC Blocking Voltage	Ta=25°C , $V_R = V_{RRM}$ Ta=110°C , $V_R = V_{RRM} * 80\%$	I_{RRM}	100		80	50		10		uA
			10		8	5		3		mA
Typical Junction Capacitance	4 V,1MHz	C_J	270		230	170		90		pF

Thermal Characteristics (Ta=25°C Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	SR 540	SR 545	SR 560	SR 580	SR 5100	SR 5150	SR 5200	Unit
Operating Junction Temperature Range		T _J	-55~125			-55~150		-55~175		℃
Storage Temperature Range		T _{STD}	-55~125			-55~150		-55~175		
Thermal Resistance Junction To Ambient With Steady-State	Still Air Environment With Ta=25℃	R _{θJA}	45.0							℃/W
Thermal Resistance Junction-Case With Steady-State	At 0.375"(9.5mm) lead length Mounted On vertical P.C. Board	R _{θJC}	12.0							

Notes: 1.Pulse Test: 300 Us Pulse Width,1% Duty Cycle

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Typical Characteristics Curves

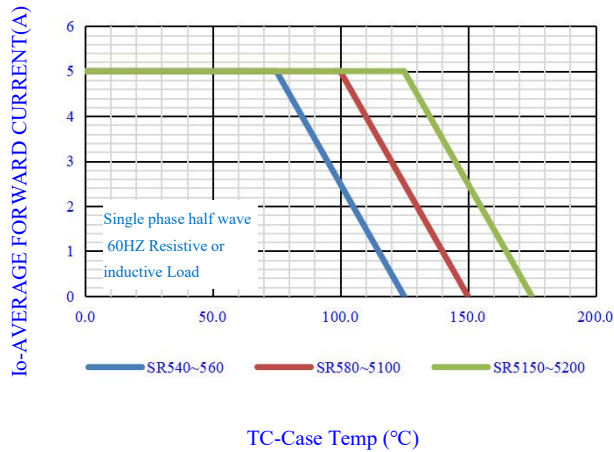


Fig.1-FORWARD CURRENT DERATING CURVE

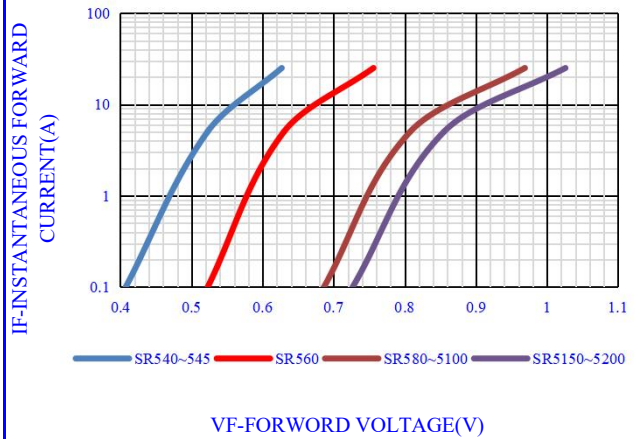


Fig.2- TYPICAL INSTANTANEOUS FORWARD

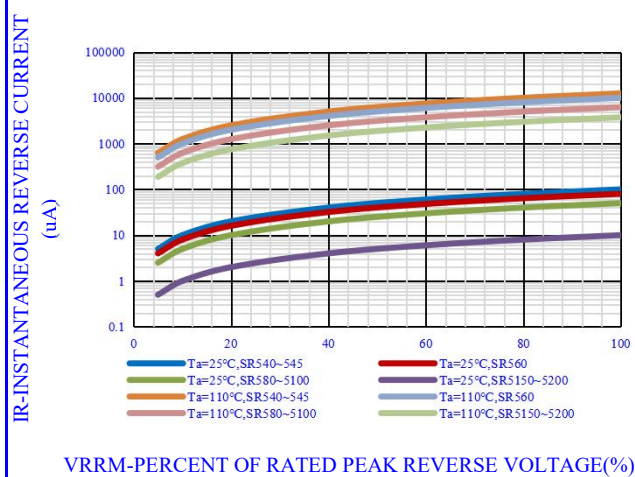


Fig.3- TYPICAL REVERSE CHARACTERISTICS

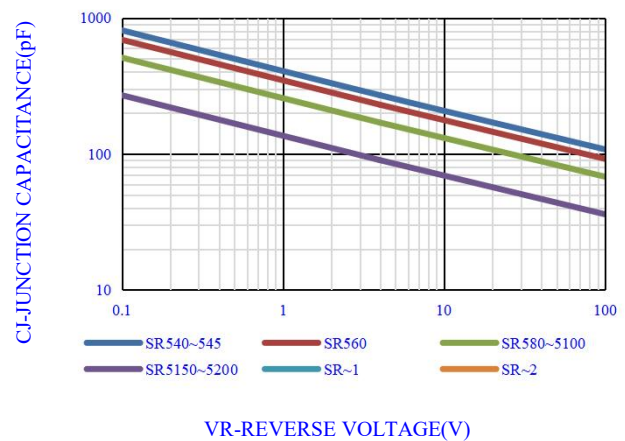


Fig.4- TYPICAL JUNCTION CAPACITANCE

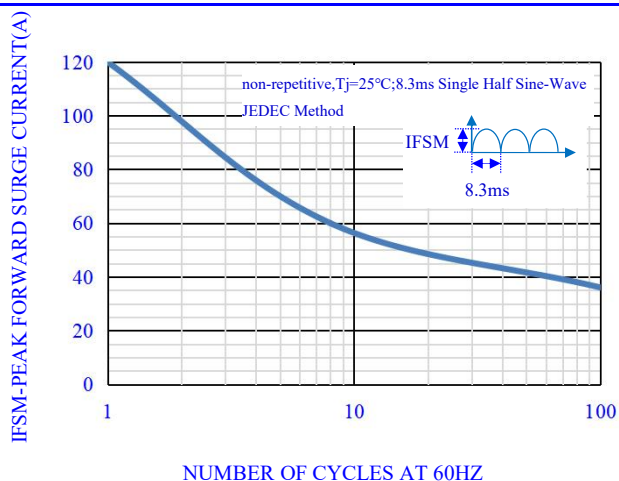


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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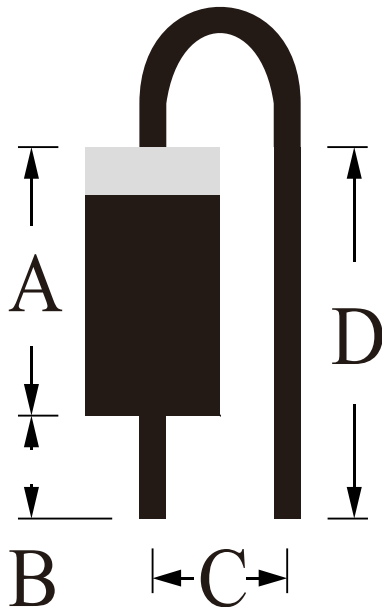
MARKING



MARKING INSTRUCTION

NH=Niuhan Trademark
FF=Product Line Code,According To Actual Changes
LLWWF=Inernal Code,According To Actual Changes
SR5xxx=Model,xx=40,45,60,80,100,150,200
White band denotes cathode

OUTLINE DRAWINGS



DO-27

OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	8.00	-	10.00	0.3150	-	0.3937
B	3.30	-	4.20	0.1299	-	0.1654
C	5.50	-	6.50	0.2165	-	0.2559
D	11.30	-	14.20	0.4449	-	0.5591

PACKING INFORMATION

Package Type	Package Code	Product Weight Approx(g/Pcs)	Package Method	Quantity (Pcs/Min. Pack.)	Quantity (Pcs/Inner Box)	Quantity (Pcs/Carton)
DO-27	P1	1	Tape	1000	1000	10000
DO-27	P2	1	Tape	1250	1250	12500

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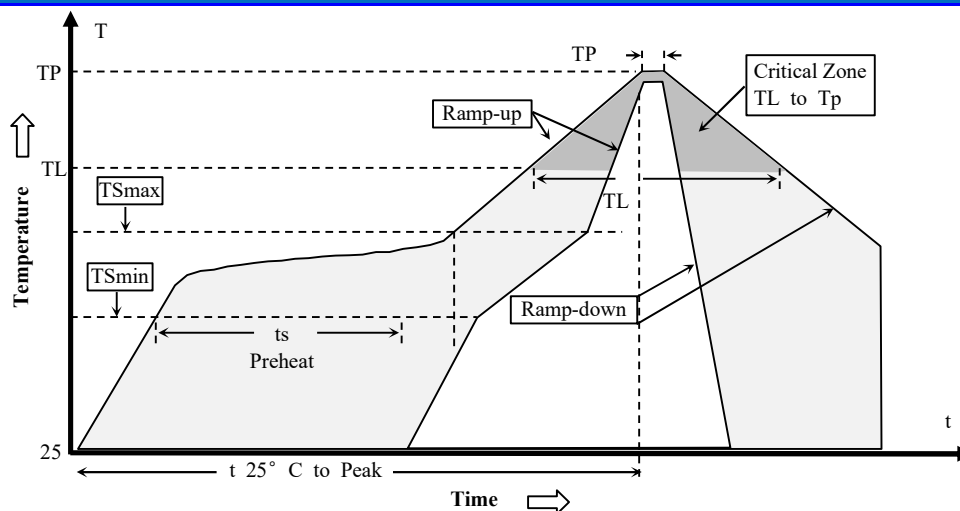
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Recommended wave soldering condition

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 (T _{smax} to T _p)	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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