


1N5391 THRU 1N5399

GENERAL PURPOSE RECTIFIERS



<b>VOLTAGE:</b> 50~1000 Volts	<b>CURRENT:</b> 1.5 Amperes	<b>DO-15</b>	<b>Marking and Polarity</b>
<b>FEATURES</b> <ul style="list-style-type: none"> <li>■ Glass passivated chip junction</li> <li>■ Low Forward Voltage Drop for high efficiency</li> <li>■ Low leakage current for high reliability</li> <li>■ High forward surge capability for high reliability</li> </ul>		 <p>Remark:</p> <ul style="list-style-type: none"> <li>①. NH=niuhang trademark</li> <li>②. 1N539x=Modle,x=1,2,3,,5,7,8,9</li> <li>③. FF=Production line,According to actual changes</li> </ul>	
<b>MECHANICAL DATA</b> <ul style="list-style-type: none"> <li>■ <b>Terminals:</b> Plated axial leads, solderable per MIL-STD-750,method 2026</li> <li>■ <b>Mounting Position:</b> Any</li> <li>■ <b>Lead Free:</b> Lead Free Finish, RoHS Compliant</li> <li>■ <b>Weight:</b> 0.40 grams</li> </ul>			
<b>TYPICAL APPLICATIONS</b> <ul style="list-style-type: none"> <li>■ For use in low voltage ,high frequency inverters ,DC/DC converters, free wheeling ,and polarity protection applications</li> </ul>			

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

Parameter	Symbol	1N 5391	1N 5392	1N 5393	1N 5395	1N 5397	1N 5398	1N 5399	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	1.5							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)(see fig.5)	$I_{FSM}$	50							A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2t$	10.38							A <sup>2</sup> sec

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

Parameter	Symbol	1N 5391	1N 5392	1N 5393	1N 5395	1N 5397	1N 5398	1N 5399	Unit
Maximum instantaneous forward voltage (see fig.2) (Note 1)	$V_F$	1.0							V
Maximum instantaneous reverse current at rated DC blocking voltage (see fig.3)(Note 1)	$I_R$	5							uA
Typical junction capacitance(see fig.4)	$C_J$	20							pF

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

Parameter	Symbol	1N 5391	1N 5392	1N 5393	1N 5395	1N 5397	1N 5398	1N 5399	Unit
Operating junction	$T_J$	-55 to 150							°C
Storage temperature range	$T_{STG}$	-55 to 150							
Typical thermal resistance (Note 2)	$R_{\theta JA}$	35							°C/W
	$R_{\theta JC}$	8							

Note: 1. Pulse width < 300 uS, Duty cycle < 2%  
2.P. C. B mounted with 0.1\*0.1\*(2.54 x 2.54 mm) copper Pad Areas

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RATING AND CHARACTERISTIC CURVES

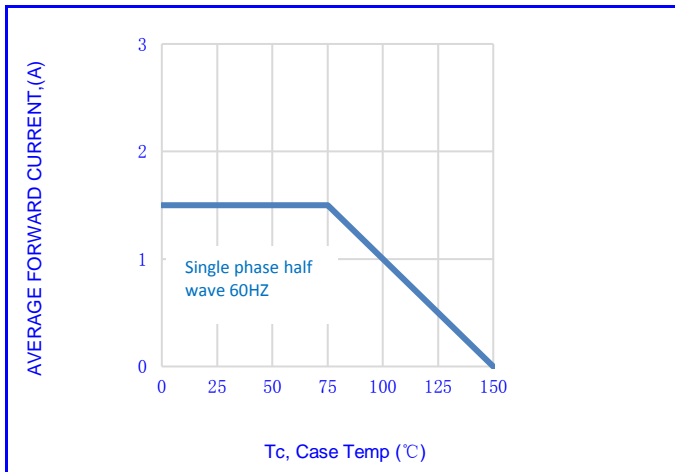


Fig.1- FORWARD CURRENT DERATING CURVE

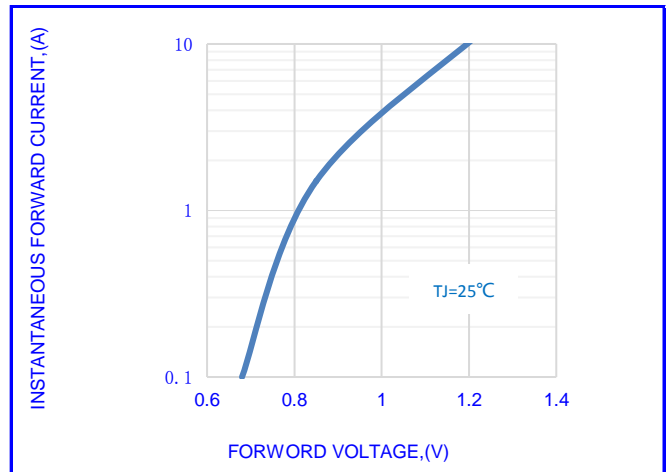


Fig.2-TYPICAL INSTANTANEOUS FORWARD

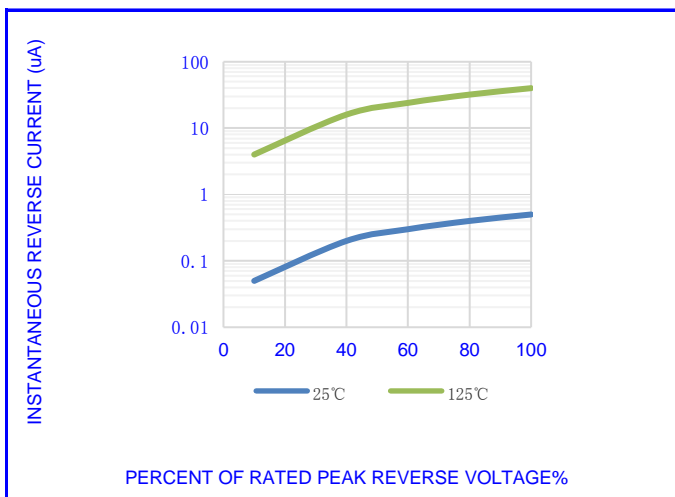


Fig.3-TYPICAL REVERSE CHARACTERISTICS

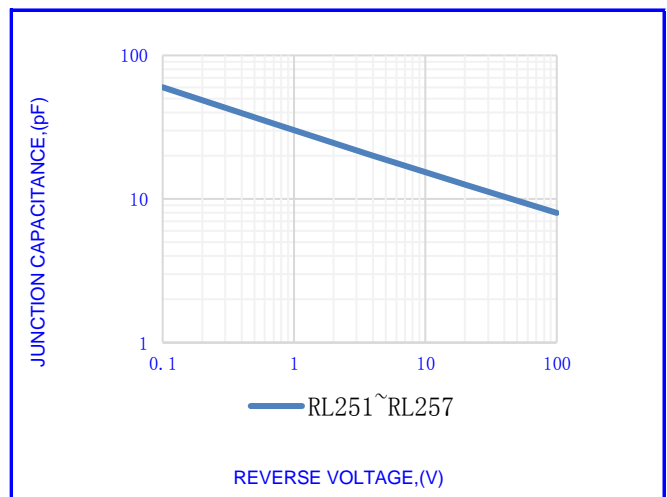


Fig.4- TYPICAL JUNCTION CAPACITANCE

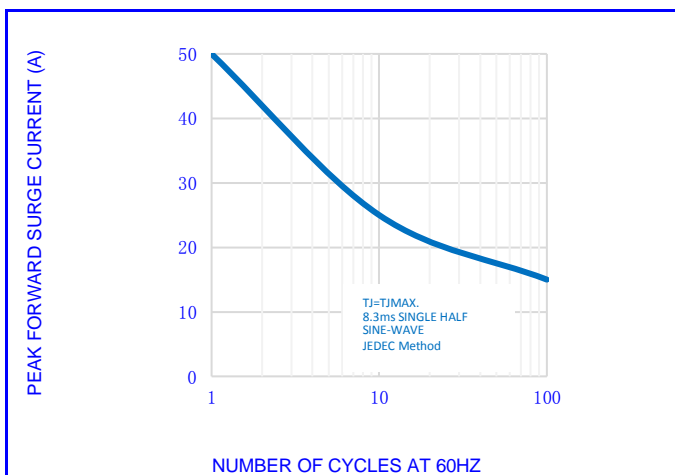


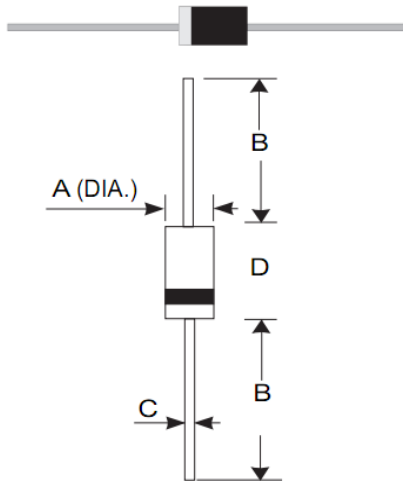
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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OUTLINE DRAWINGS

DO-15



OUTLINE DIMENSIONS

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.6	-	3.6	0.104	-	0.140
B	24.0	-	27.0	0.945	-	1.063
C	0.7	-	0.9	0.028	-	0.035
D	5.8	-	7.6	0.230	-	0.300

Packing Information

Package	Pack	Box Size LxWxH(mm)	Quantity (pcs/box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
DO-15	B/G	250*75*140	3000	420*280*310	30000

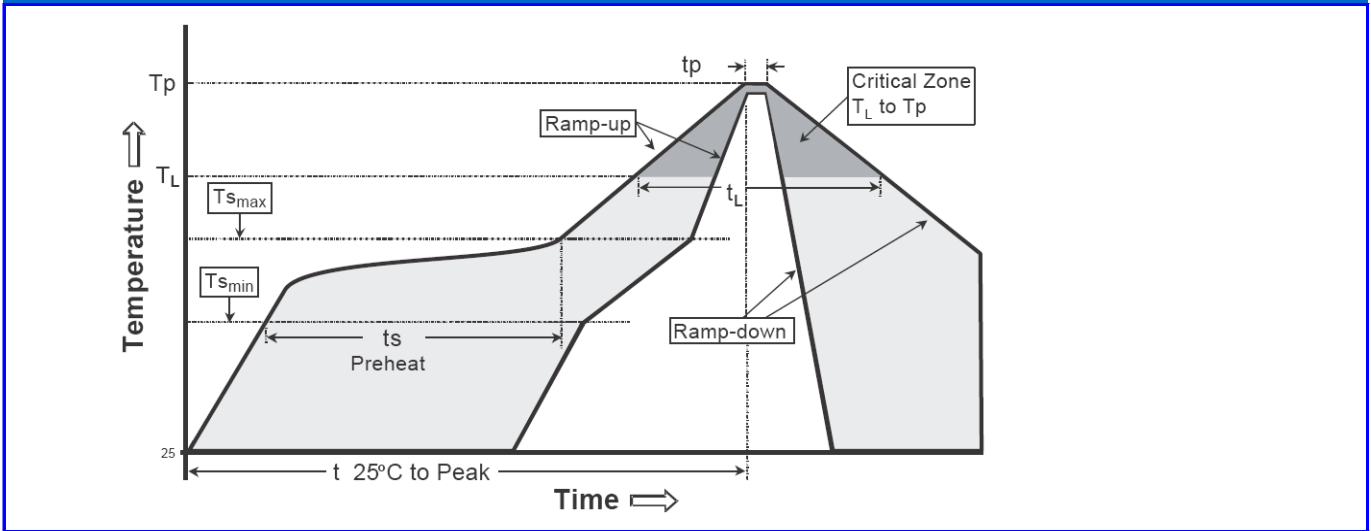
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**Recommended wave soldering condition**

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 (Tsmmax 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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