

### HBR30L150YD

#### SCHOTTKY RECTIFIERS



**VOLTAGE:** 150 Volts

**CURRENT:** 30.0 Amperes

**TO-263**

**Marking and Polarity**

#### FEATURES

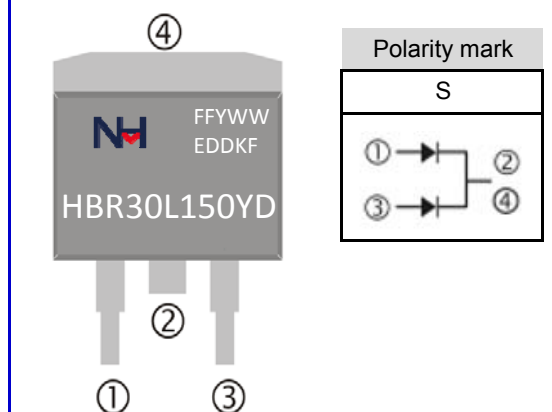
- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

#### MECHANICAL DATA

- **Package:** TO-263
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant
- **Weight:** App.1.36 grams (0.048 ounce)

#### TYPICAL APPLICATIONS

- For use in high frequency inverters ,AC/DC converters, DC/DC converters,LED driver etc. applications



Remark:

- ①. NH=niuhang trademark
- ②. FF=Product line code,According to actual changes  
YWW=Date code,According to actual changes  
EDDKF=Internal code,According to actual changes
- ③. HBR30L150YD=Modle

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

Parameter	Symbol	HBR30L150YD	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	150	V
Maximum RMS voltage	$V_{RMS}$	105	V
Maximum DC blocking voltage	$V_{DC}$	150	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	30.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	200	A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2t$	166.00	A <sup>2</sup> sec

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

Parameter	Test Conditions	Symbol	HBR30L150YD			Unit
			Min.	Typ.	Max.	
Maximum instantaneous forward voltage (Note 1)	Ta=25°C IF= 15.0 A	$V_F$	--	0.84	0.90	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	Ta=25°C @ $V_{RRM}$	$I_{RRM}$	--	2	5	uA
	Ta=125°C @ 80%* $V_{RRM}$		--	0.5	5	mA
Typical junction capacitance	4V,1MHz	$C_J$	--	750	--	pF

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

Parameter	Symbol	HBR30L150YD		Unit	
Operating junction and storage temperature range	$T_J$	-55	to	175	°C
Storage temperature range	$T_{STG}$	-55	to	175	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	62.5		°C/W	
	$R_{\theta JL}$	3.5			

- Note:
1. Pulse width < 300 uS, Duty cycle < 2%
  2. P.C.B mounted with 10cm\*10cm\*1mm copper pad areas.

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RATING AND CHARACTERISTIC CURVES

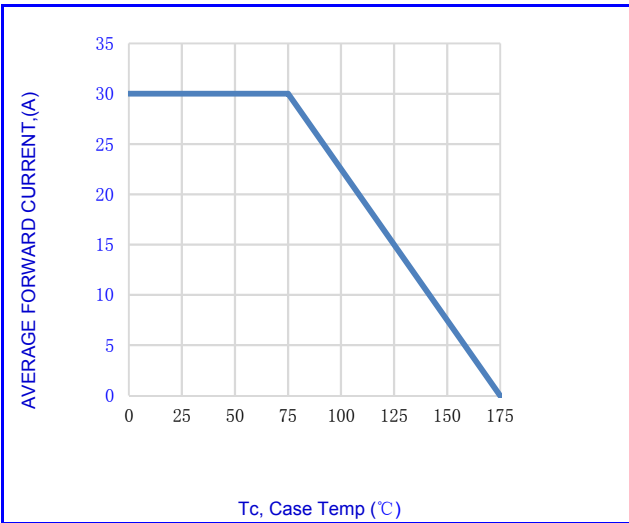


Fig.1-FORWARD CURRENT DERATING CURVE

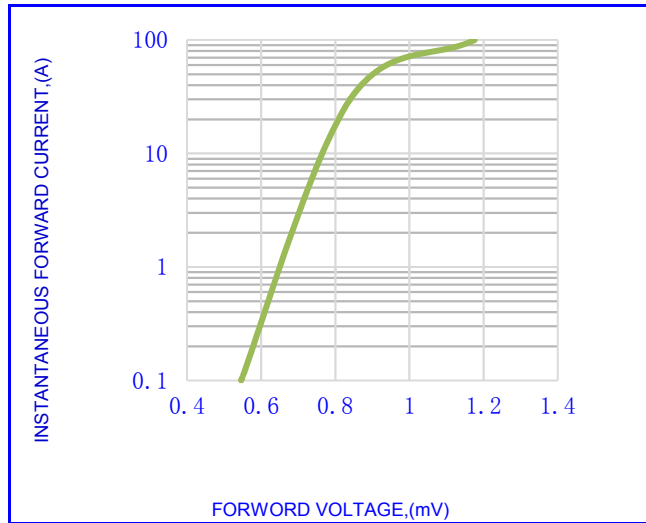


Fig.2- TYPICAL INSTANTANEOUS FORWARD

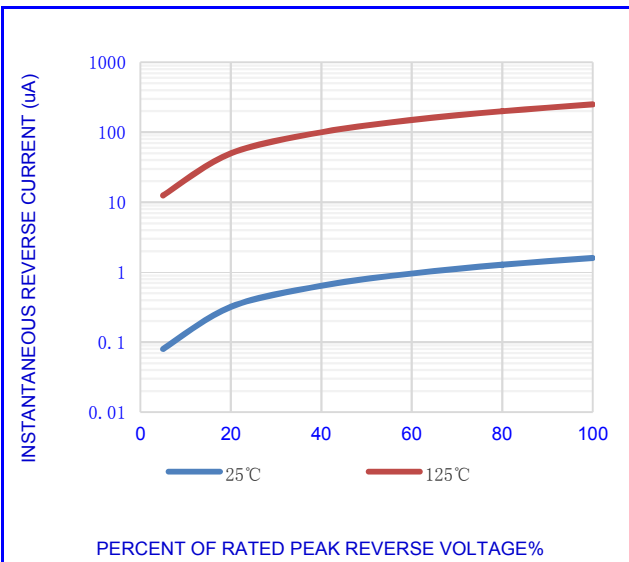


Fig.3- TYPICAL REVERSE CHARACTERISTICS

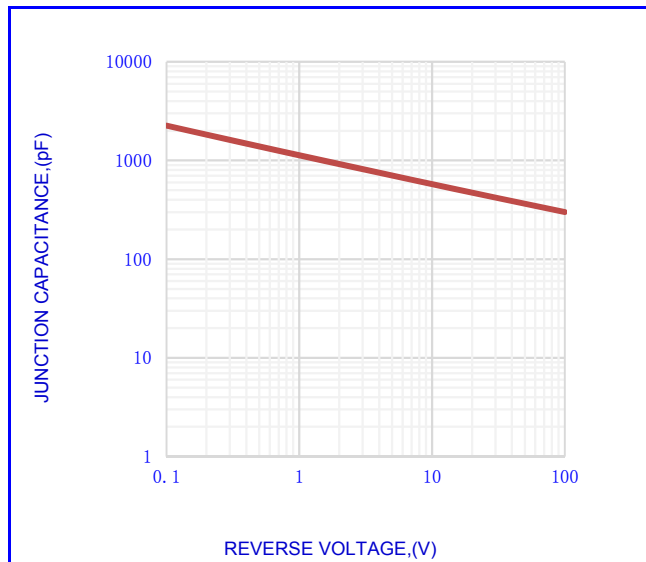


Fig.4-TYPICAL JUNCTION CAPACITANCE

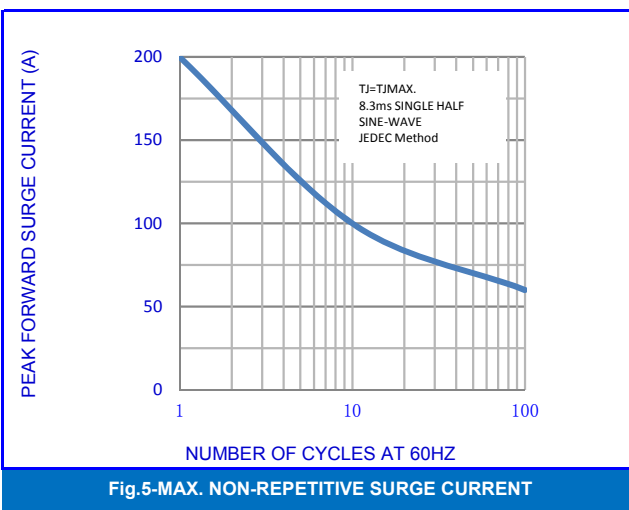


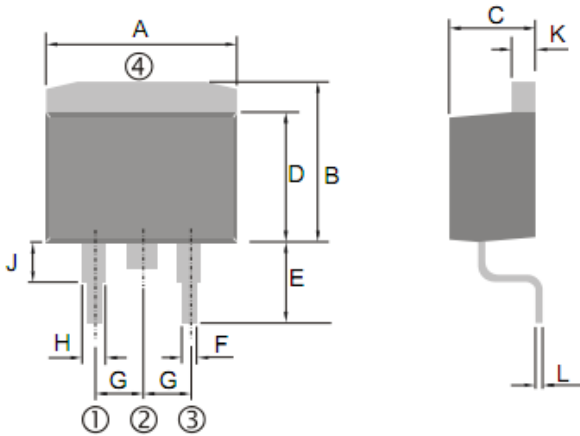
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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**OUTLINE DRAWINGS**

**TO-263**

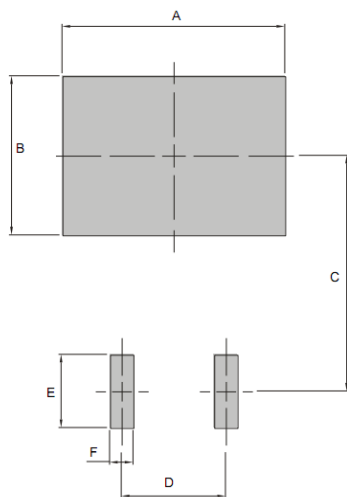


**OUTLINE DIMENSIONS**

DIM.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.8	-	10.4	0.386	-	0.409
B	9.6	-	10.6	0.378	-	0.417
C	4.4	-	4.8	0.173	-	0.189
D	8.5	-	9.1	0.335	-	0.358
E	5.0	-	6.0	0.197	-	0.236
F	0.8	-	0.9	0.031	-	0.035
G	2.35	-	2.75	0.093	-	0.108
H	1.0	-	1.4	0.039	-	0.055
J	2.5	-	3.0	0.098	-	0.118
K	1.2	-	1.4	0.047	-	0.055
L	0.3	-	0.7	0.012	-	0.028

**RECOMMENDED LAYOUT DRAWINGS**

**TO-263**



**RECOMMENDED LAYOUT DIMENSIONS**

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	10.86	-	-	0.24	-
B	-	7.86	-	-	0.298	-
C	-	11.64	-	-	0.261	-
D	-	5.08	-	-	0.091	-
E	-	3.62	-	-	0.109	-
F	-	1.14	-	-	0.056	-

**PACKING INFORMATION**

**TO-263**

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size L×W×H(mm)	Quantity (pcs/Inner Box)	Outer Carton Size L×W×H(mm)	Quantity (pcs/carton)
Tape Reel	Φ330	800	355×340×40	800	370×360×420	8000

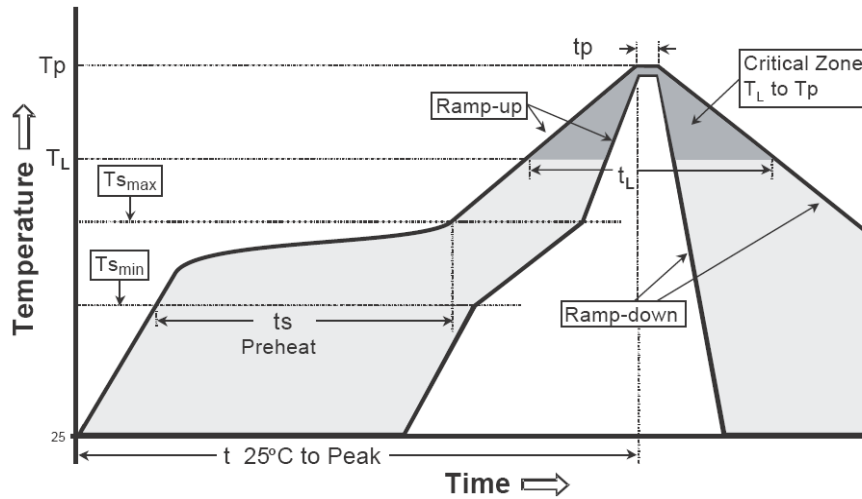
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Recommended wave soldering condition

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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