

HBR30L200YD

LOW VF SCHOTTKY RECTIFIERS



VOLTAGE: 200 Volts

CURRENT: 30.0 Amperes

TO-263

Marking and Polarity

FEATURES

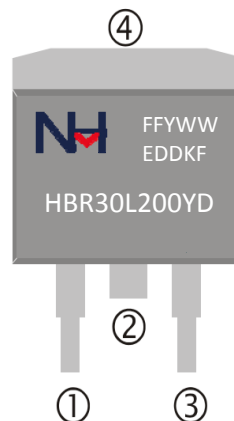
- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

MECHANICAL DATA

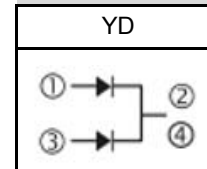
- Package:** TO-263
- Mounting Position:** Any
- Lead Free:** Lead Free Finish, RoHS Compliant
- Weight:** App.1.36 grams (0.048 ounce)

TYPICAL APPLICATIONS

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



Polarity mark



Remark:

- NH=niuhang trademark
- FF=Product line code,According to actual changes
YWW=Date code,According to actual changes
EDDKF=Internal code,According to actual changes
- HBR30L200YD=Model

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

Parameter	Symbol	HBR30L200YD	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum RMS voltage	V_{RMS}	140	V
Maximum DC blocking voltage	V_{DC}	200	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 ² sec

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

Parameter	Test Conditions	Symbol	HBR30L200YD			Unit
			Min.	Typ.	Max.	
Maximum instantaneous forward voltage (Note 1)	Ta=25°C IF= 15.0 A	V_F	--	0.82	0.88	V
Maximum instantaneous reverse current at rated DC blocking voltage (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 Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	HBR30L200YD	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.

HBR30L200YD

LOW VF SCHOTTKY RECTIFIERS



RATING AND CHARACTERISTIC CURVES

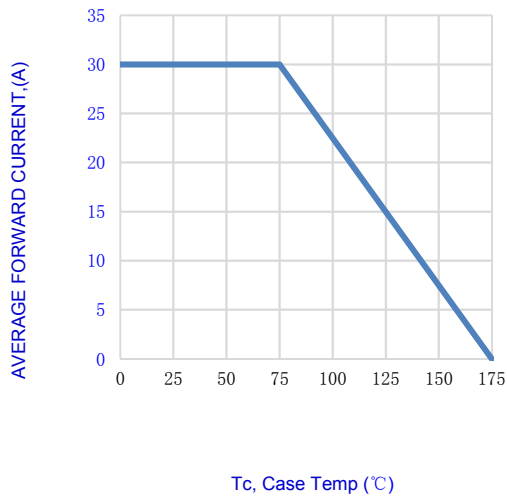


Fig.1-FORWARD CURRENT DERATING CURVE

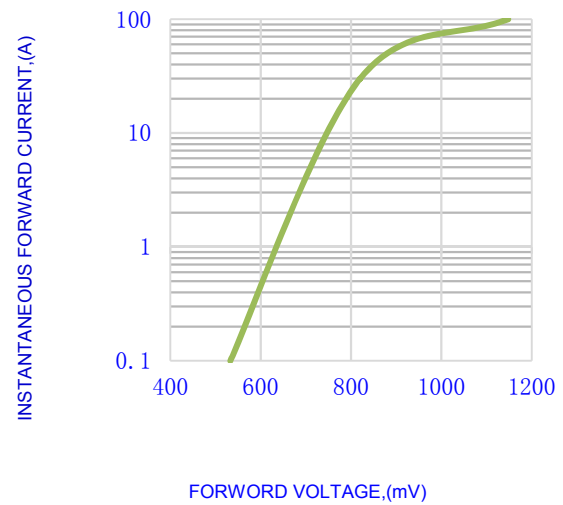


Fig.2- TYPICAL INSTANTANEOUS FORWARD

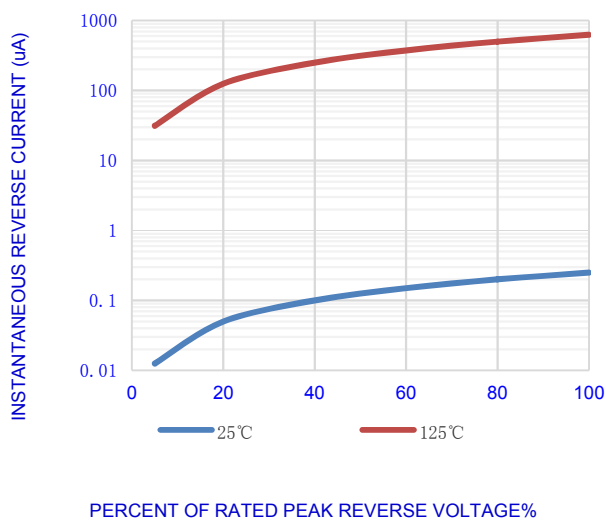


Fig.3- TYPICAL REVERSE CHARACTERISTICS

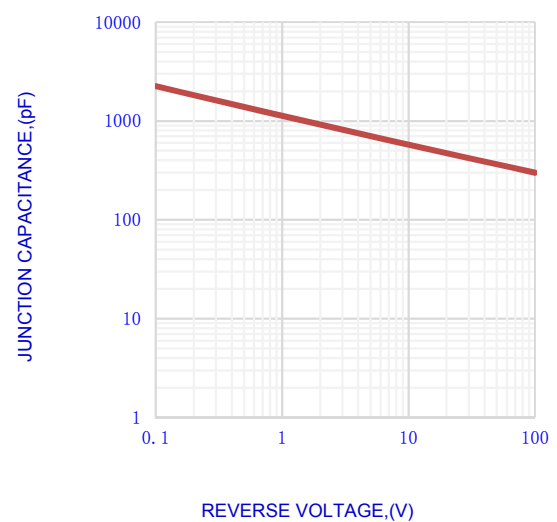


Fig.4-TYPICAL JUNCTION CAPACITANCE

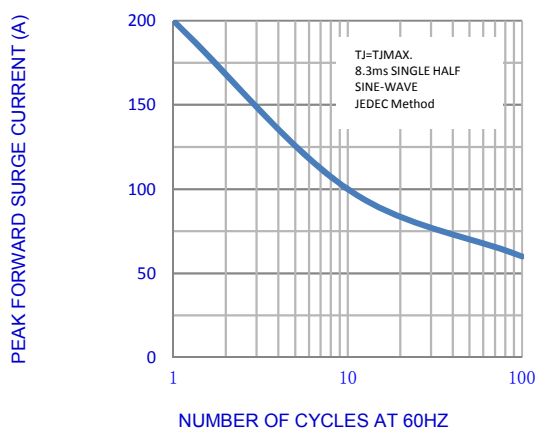


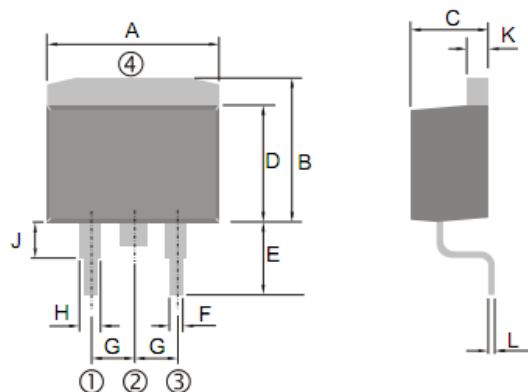
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

HBR30L200YD
LOW VF SCHOTTKY RECTIFIERS



OUTLINE DRAWINGS

TO-263

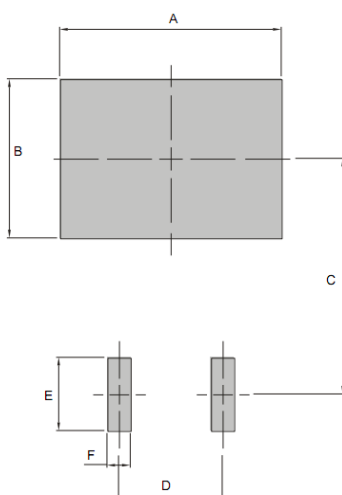


OUTLINE DIMENSIONS

DIM.	Millimeters			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.	Millimeters			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)
Tube	530x35x8	50	560x155x55	1000	570x284x185	5000
Tape Reel	Φ330	800	355x340x40	800	370x360x420	8000

HBR30L200YD

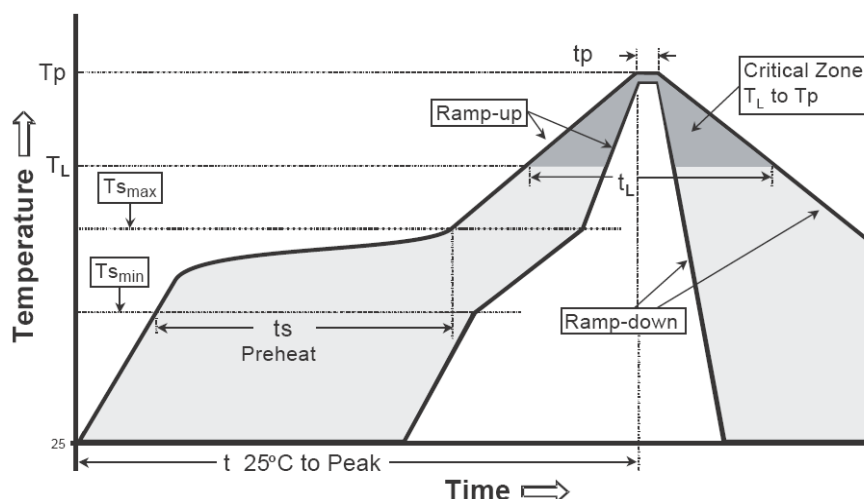
LOW VF SCHOTTKY RECTIFIERS



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.

HBR30L200YD

LOW VF SCHOTTKY RECTIFIERS



Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from niuhang Electronics co., LTD
- Niuhan Electronics co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhan Electronics co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhan Electronics co., LTD. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Niuhan Electronics co., LTD. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Niuhan Electronics co., LTD. for any damages resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product the customer quality, change the internal structure and the production process Niuhan can not notify