

HBR10200YS

LOW VF SCHOTTKY RECTIFIERS



VOLTAGE: 200 Volts

CURRENT: 10.0 Amperes

TO-252

Marking and Polarity

FEATURES

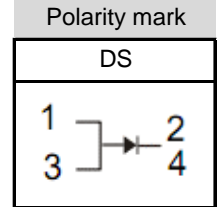
- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

MECHANICAL DATA

- Package:** TO-252
- Mounting Position:** Any
- Lead Free:** Lead Free Finish, RoHS Compliant
- Weight:** App.0.325 grams (0.0113 ounce)

TYPICAL APPLICATIONS

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



Remark:

- NH=niuhang trademark
- J=Product line code,According to actual changes
YWW=Data code,According to actual changes
EDDK=Inter control code,According to actual changes
- HBR10200YS=Modle

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

Parameter	Symbol	HBR10200YS	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)	$I_{F(AV)}$	10.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	120	A
Current Squared Time Per Diode($t < 8.3ms$)	I^2t	59.76	A ² sec

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

Parameter	Test Conditions	Symbol	HBR10200YS			Unit
			Min.	Typ.	Max.	
Maximum instantaneous forward voltage (Note 1)	Ta=25°C IF= 5.0 A	V_F	--	0.85	0.93	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	Ta=25°C @ V_{RRM}	I_{RRM}	--	1	5	uA
	Ta=125°C @ 80%* V_{RRM}		--	0.5	5	mA
Typical junction capacitance	4V,1MHz	C_J	--	600	--	pF

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

Parameter	Symbol	HBR10200YS		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:
- Pulse width < 300 uS, Duty cycle < 2%
 - P.C.B mounted with 10cm*10cm*1mm copper pad areas.

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RATING AND CHARACTERISTIC CURVES

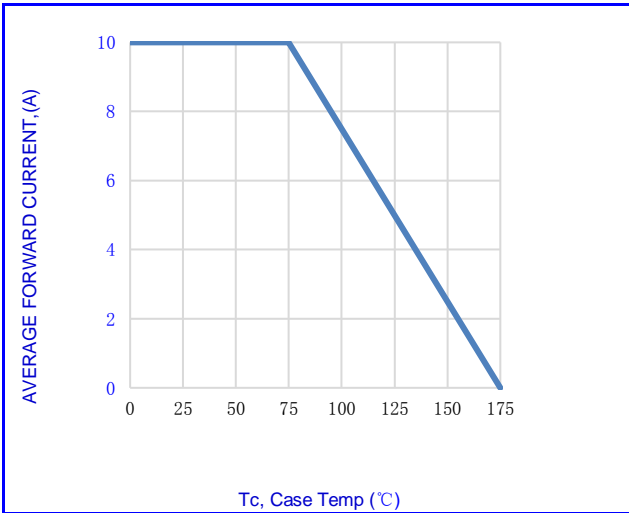


Fig.1-FORWARD CURRENT DERATING CURVE

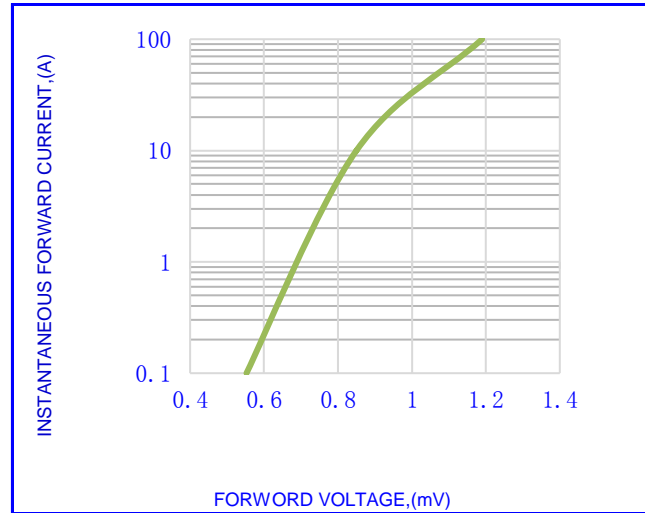


Fig.2- TYPICAL INSTANTANEOUS FORWARD

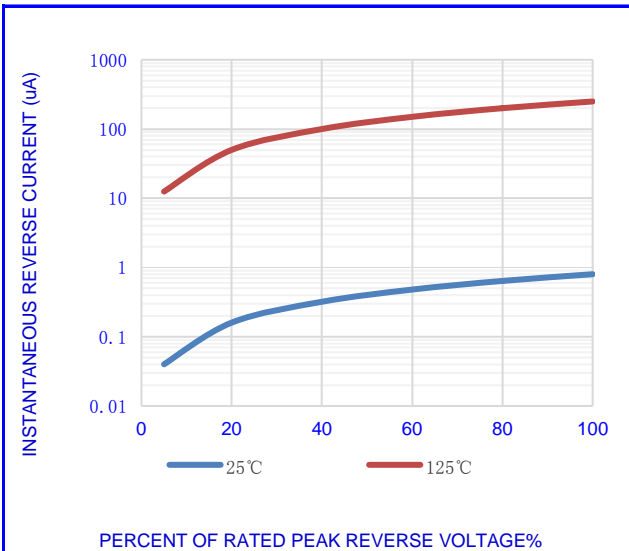


Fig.3- TYPICAL REVERSE CHARACTERISTICS

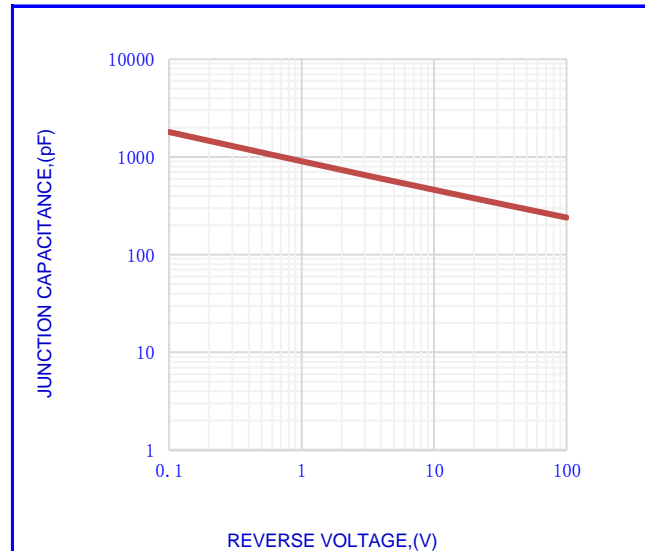


Fig.4-TYPICAL JUNCTION CAPACITANCE

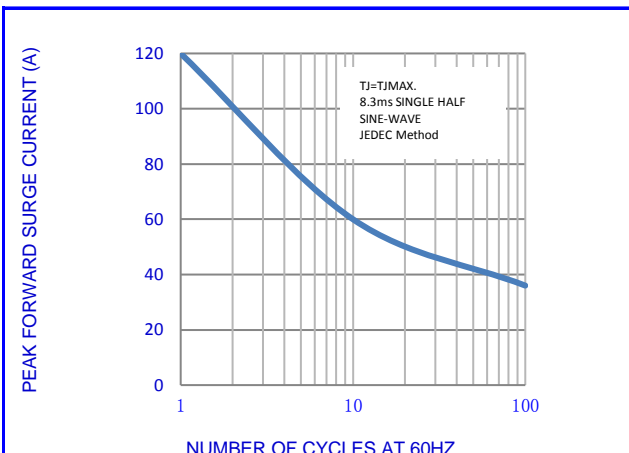


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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OUTLINE DRAWINGS				TO-252						
				OUTLINE DIMENSIONS						
				Millimeters		Inches				
				DIM.	Min.	Typ.	Max.	Min.	Typ.	Max.
				A	6.400	-	6.800	0.252	-	0.268
				B	5.200	-	6.200	0.205	-	0.244
				C	2.100	-	2.500	0.083	-	0.098
				D	4.800	-	5.500	0.189	-	0.217
				E	1.000	-	1.600	0.039	-	0.063
				F	0.500	-	1.000	0.020	-	0.039
				G	2.100	-	2.500	0.083	-	0.098
				H	2.800	-	3.500	0.110	-	0.138
				J	0.400	-	0.600	0.016	-	0.024
				K	-	0.080	-	-	0.003	-
				L	0.900	-	1.400	0.035	-	0.055
				M	-	0.500	-	-	0.020	-
				N	1.300	-	1.800	0.051	-	0.071
RECOMMENDED LAYOUT DRAWINGS				TO-252						
				RECOMMENDED LAYOUT DIMENSIONS						
				Millimeters		Inches				
				Dim.	Min.	Typ.	Max.	Min.	Typ.	Max.
				A	-	6.09	-	-	0.24	-
				B	-	7.57	-	-	0.298	-
				C	-	6.64	-	-	0.261	-
				D	-	2.3	-	-	0.091	-
				E	-	2.76	-	-	0.109	-
				F	-	1.42	-	-	0.056	-
PACKING INFORMATION				TO-252						
Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Outer Carton Size LxWxH(mm)	Quantity (pcs/carton)				
Tape Reel	Φ330	2500	340x340x50	5000	360x360x260	25000				

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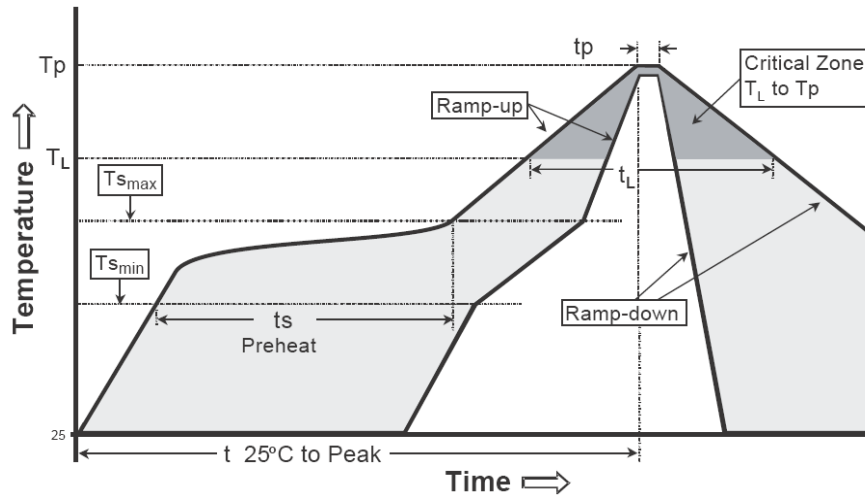
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Recommended wave soldering condition

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(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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