HBR20200P5

SCHOTTKY RECTIFIERS

VOLTAGE:	200 Volts	CURRENT:	20.0 Ampers

FEATURES

- Metal silicon junction ,majority carrier conduction
- Low power loss for high reliability
- High forward surge capability for high reliability
- High frequency operation

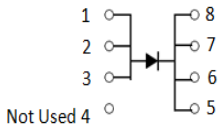
MECHANICAL DATA

- **Package:** PDFN5*6
- **Mounting Torque**: 10 in-lbs maximum
- **Terminal**s: Lead solderable per J-STD-002 and JESD22-B102
- **Polarity**: As marked

TYPICAL APPLICATIONS

- For use in low voltage ,high frequency inverters ,DC/DC converters,free wheeling ,and polarity protection applications

PDFN5*6 Marking and Polarity



Remark:

①. NH=niuhang trademark

②. FF=Product line code,According to actual changes;
YWW=Data code,According to actual changes
LLWWF= Assembly code;

③. HBR20200P5=Modle

Maximum Ratings(Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Symbol	HBR20200P5	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)	$IF_{(AV)}$	20.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	275	A
Current Squared Time Per Diode(t<8.3ms)	I^2t	313.84	A^2sec

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

Parameter	Test Conditions	Symbol	HBR20200P5			Unit
			Min.	Typ.	Max.	
Maximum instantaneous forward voltage (Note 1)	Ta=25℃ IF= 10.0 A	V_F	--	0.85	0.94	V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 1)	Ta=25℃ @ V_{RRM}	I_{RRM}	--	5	20	uA
	Ta=125℃ @ 80%*V_{RRM}		--	1	5	mA
Typical junction capacitance	4V,1MHz	C_J	--	800	--	pF

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

Parameter	Symbol	HBR20200P5			Unit
Operating junction and storage temperature range	T_J	-65	to	175	℃
Storage temperature range	T_{STG}	-65	to	175	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	35			℃/W
	$R_{\theta JL}$	10			

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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RATINGANDCHARACTERISTICCURVES

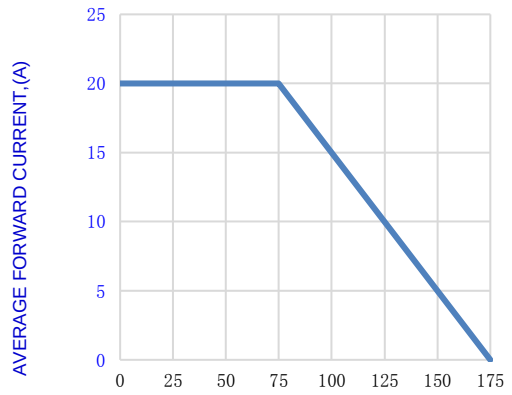

Fig.1-FORWARD CURRENT DERATING CURVE

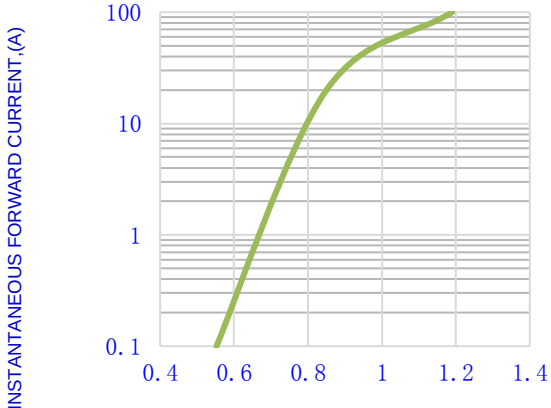

Fig.2- TYPICAL INSTANTANEOUS FORWARD

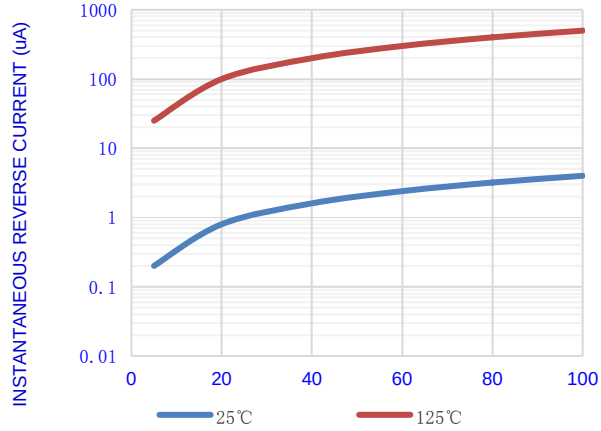

Fig.3- TYPICAL REVERSE CHARACTERISTICS

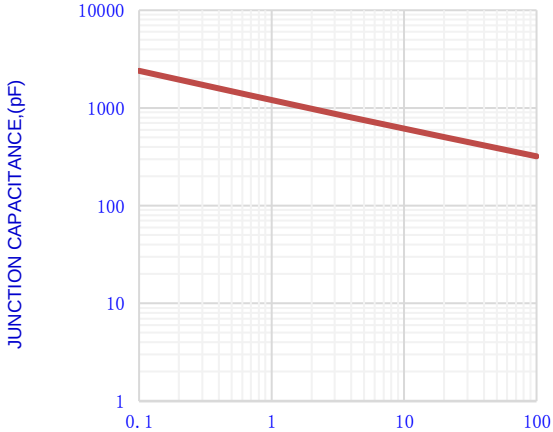

Fig.4-TYPICAL JUNCTION CAPACITANCE

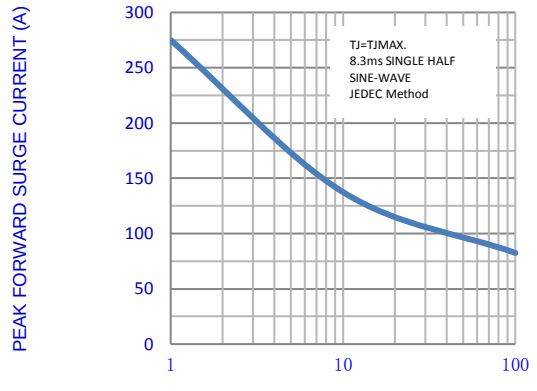

Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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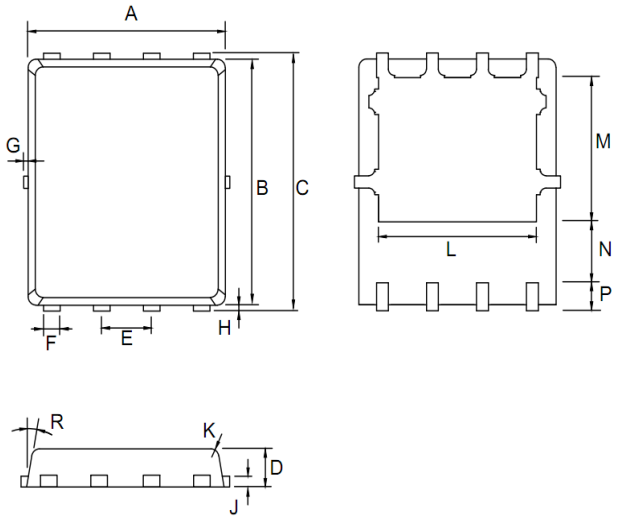
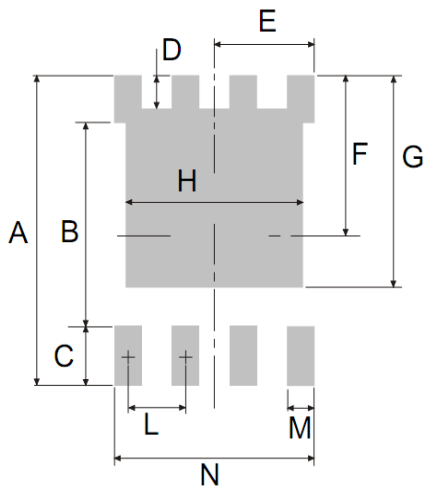
OUTLINE DRAWINGS — PDFN5*6



OUTLINE DIMENSIONS						
DIM.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.800	4.900	5.000	0.189	0.193	0.197
B	5.650	5.750	5.850	0.222	0.226	0.230
C	5.900	6.000	6.100	0.232	0.236	0.240
D	0.900	1.000	1.100	0.035	0.039	0.043
E	-	1.270	-	-	0.050	-
F	0.250	0.300	0.350	0.010	0.012	0.014
G	-	-	0.150	-	-	0.006
H	0.100	0.130	0.160	0.004	0.005	0.006
J	-	0.254	-	-	0.010	-
K	-	R0.1	-	-	R0.0039	-
L	-	4.000	-	-	0.157	-
M	-	3.450	-	-	0.136	-
N	-	1.350	-	-	0.053	-
P	-	0.550	-	-	0.022	-
R	-	0.1	-	-	0.004	-

RECOMMEDNED LAYOUT DRAWINGS — PDFN5*6



RECOMMENDED LAYOUT DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	6.600	-	-	0.260	-
B	-	4.320	-	-	0.170	-
C	-	1.270	-	-	0.050	-
D	-	0.700	-	-	0.028	-
E	-	2.200	-	-	0.087	-
F	-	3.300	-	-	0.130	-
G	-	4.500	-	-	0.177	-
L	-	1.270	-	-	0.050	-
M	-	0.600	-	-	0.024	-
N	-	4.400	-	-	0.173	-

PACKING INFORMATION — PDFN5*6

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	Φ340	5000	340×340×50	10000	360×360×260	50000

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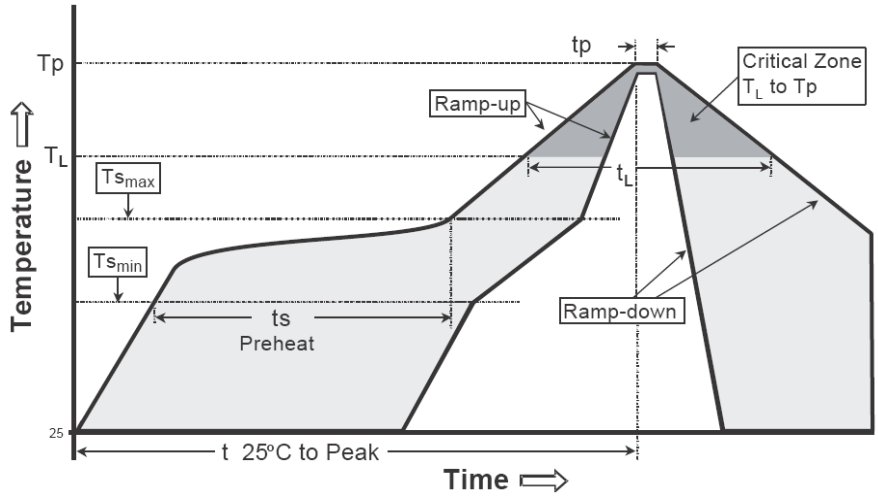
Recommended wave soldering condition

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 (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.

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