

MBR10200DCT, MBR10200DFCT
SCHOTTKY BARRIER RECTIFIERS



VOLTAGE: 200 Volts **CURRENT:** 10.0 Amperes

Marking and Polarity

FEATURES

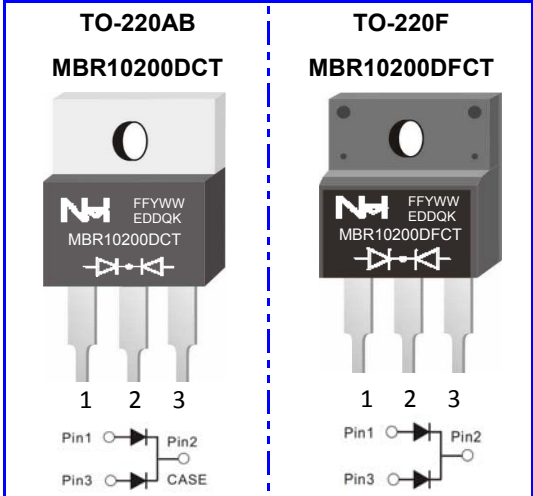
- Low forward voltage drop for high efficiency
- Low power loss for high reliability
- High forward surge capability for high reliability
- High frequency operation
- Solder bath temperature 260°C maximum, 10s, per JESD22-B106
- Component in accordance to RoHS 2011/65/EU

MECHANICAL DATA

- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant
- **Polarity:** As marked

TYPICAL APPLICATIONS

- For use in high frequency inverters ,
AC/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
EDDQK=Internal code, According to actual changes
- ③. MBR10200DCT/DFCT=Module.

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

Parameter	Symbol	MBR10200DCT, MBR10200DFCT	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum average forward rectified current (see fig.1)	$I_{F(AV)}$	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	150	A
Peak repetitive reverse current per diode at $t_p=2\mu s$ 1KHz	I_{RRM}	5	μA
Isolation voltage (TO-220F only) from terminals to heatsink $t=1$ min	V_{AC}	1500	V
Maximum Mounting torque, M3 screw	T_{MM}	1.1	N.m

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

Parameter	Test Conditions		Symbol	MBR10200DCT, MBR10200DFCT			Unit
				Min.	Typ.	Max.	
Instantaneous forward voltage per diode (note1)	$T_A=25^\circ C$	$I_F= 5 A$	V_F	--	0.85	0.92	V
	$T_A=125^\circ C$			--	0.79	0.86	
Reverse current per diode (note1)	$T_A=25^\circ C$	$V_R= 200 V$	I_R	--	--	5	μA
	$T_A=125^\circ C$			--	--	5	mA
Typical junction capacitance	4V, 1MHz		C_J	--	400	--	pF

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

Parameter	Symbol	MBR10200DCT, MBR10200DFCT		Unit
Operating junction	T_J	-55	to 150	°C
Storage temperature range	T_{STD}	-55	to 50	
Typical thermal resistance (note3)	$R_{\theta JC}$	TO-220AB	TO-220F	°C/W
		2.5	4.5	

Notes: 1. Pulse test: 300 μs pulse width, 1% duty cycle
2. Device mounted on Device mounted on 75mm x 45mm x 2.5mm Aluminum Plate Heatsink.

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RATING AND CHARACTERISTIC CURVES

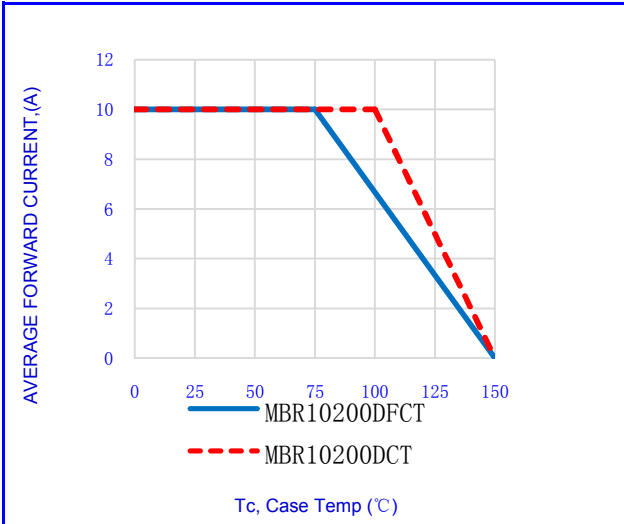


Fig.1-FORWARD CURRENT DERATING CURVE

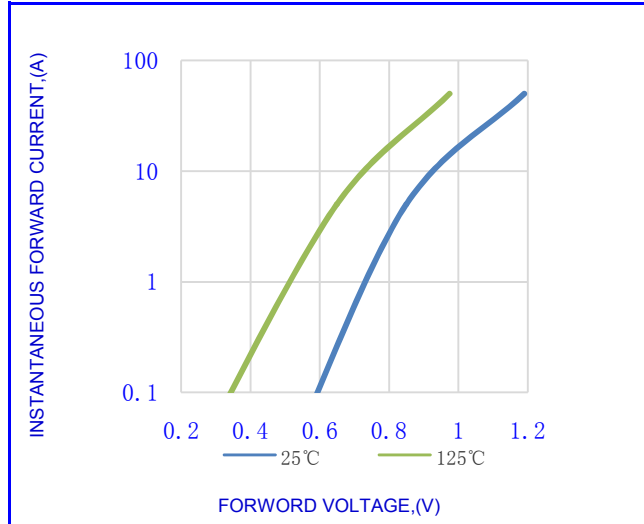


Fig.2- TYPICAL INSTANTANEOUS FORWARD

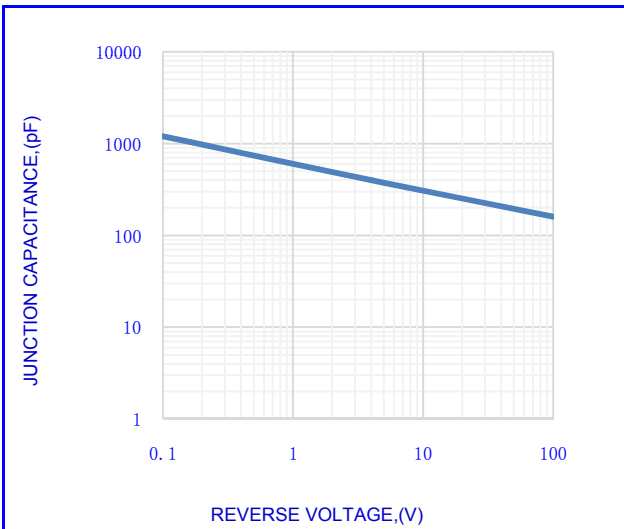


Fig.3- TYPICAL JUNCTION CAPACITANCE

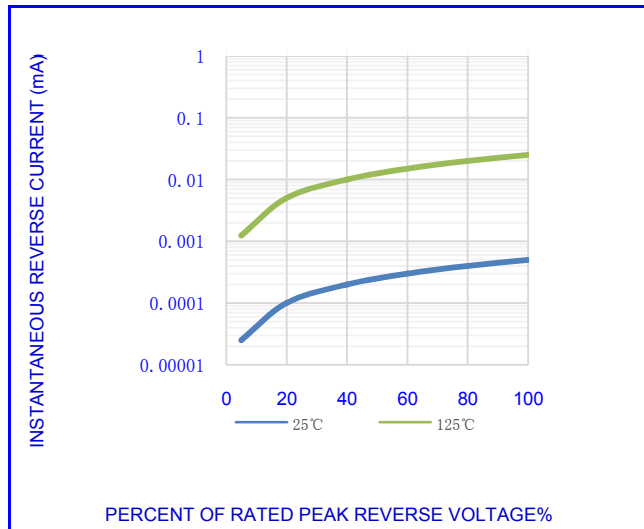


Fig.4- TYPICAL REVERSE CHARACTERISTICS

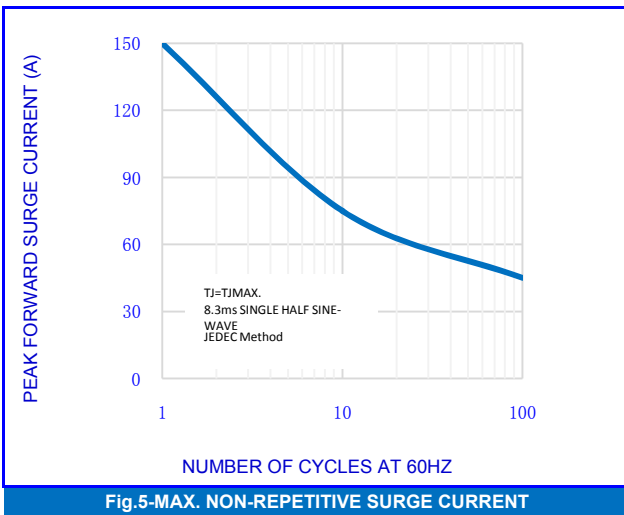


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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PACKING INFORMATION																																																																																																																						
Package Code	Package Method	Tube Size L×W×H(mm)	Quantity (pcs/Tube)	Inner Box Size L×W×H(mm)	Quantity (pcs/Inner Box)	Outer Carton Size L×W×H(mm)	Quantity (pcs/carton)																																																																																																															
TO-220AB	Tube	530x35x8	50	560x155x55	1000	570×284×185	5000																																																																																																															
TO-220F	Tube	530x35x8	50	560x155x55	1000	570×284×185	5000																																																																																																															

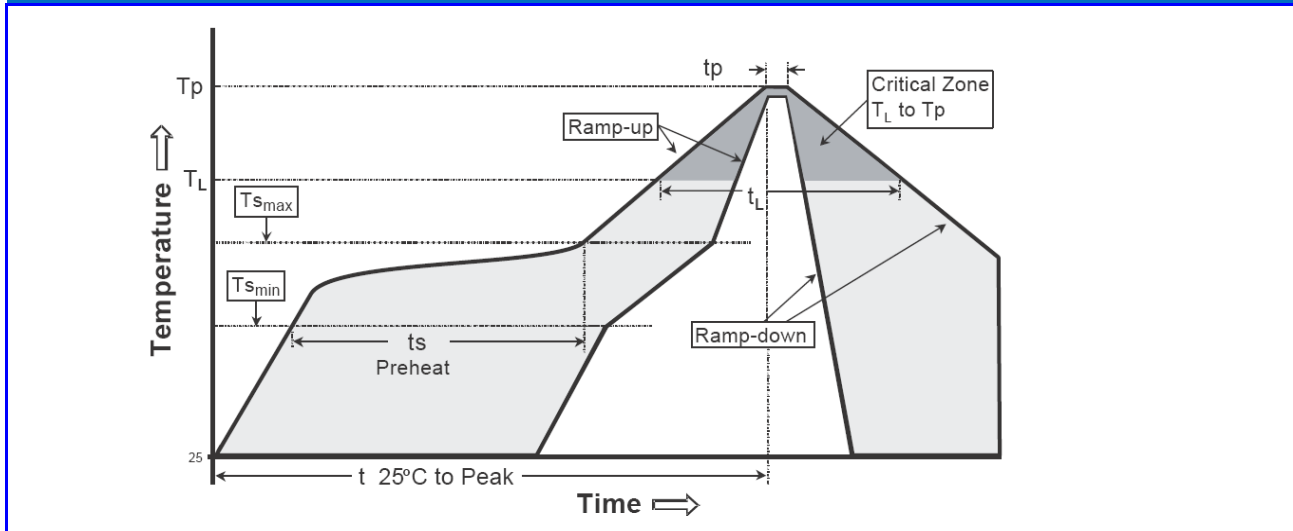
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Recommended wave soldering condition

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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[ACDBUC0230-HF](#) [SDM1U100S1F-7](#) [MBR10200CTF-G1](#) [CDLL5712](#) [DMF2822-000](#)