PD-2.321 rev. A 12/97

International
IOR Rectifier

MBR2080CT
MBR2090CT
MBR20100CT

SCHOTTKY RECTIFIER 20 Amp

Major Ratings and Characteristics

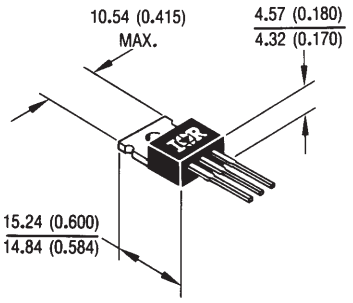
Characteristics	MBR20...CT	Units
$I_{F(AV)}$ Rectangular waveform	20	A
V_{RRM}	80/90/100	V
I_{FSM} @ tp = 5 µs sine	850	A
V_F @ 10 Apk, T_J = 125°C	0.7	V
T_J	-65 to 150	°C

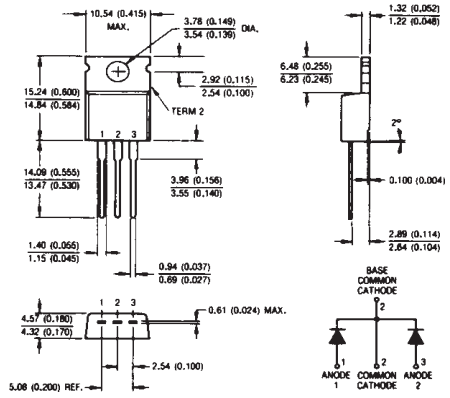
Description/Features

The MBR20...CT center tap Schottky rectifier has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 150° C junction temperature. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.

- 150° C T_J operation
- Center tap TO-220 package
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability

CASE STYLE AND DIMENSIONS





Conforms to JEDEC Outline TO-220AB
Dimensions in millimeters and inches

Voltage Ratings

	Part number	MBR2080CT	MBR2090CT	MBR20100CT
V_R	Max. DC Reverse Voltage (V)	80	90	100
V_{RWM}	Max. Working Peak Reverse Voltage (V)			

Absolute Maximum Ratings

	Parameters	MBR20...CT	Units	Conditions	
$I_{F(AV)}$	Max. Average Forward Current (Per Leg)	10	A	@ T_C = 133° C, (Rated V_R)	
I_{FSM}	Non Repetitive Peak Surge Current	850	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
		150		Surge applied at rated load condition halfwave single phase 60Hz	
I_{RRM}	Peak Repetitive Reverse Surge Current	0.5	A	2.0 µsec 1.0 KHz	

Electrical Specifications

	Parameters	MBR20...CT	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (1)	0.80	V	@ 10A	T_J = 25 °C
		0.95	V	@ 20A	
		0.70	V	@ 10A	T_J = 125 °C
		0.85	V	@ 20A	
I_{RM}	Max. Instantaneus Reverse Current (1)	0.15	mA	T_J = 25 °C	Rated DC voltage
		150	mA	T_J = 125 °C	
C_T	Max. Junction Capacitance	500	pF	V_R = 5V_{DC}, (test signal range 100Khz to 1Mhz) 25°C	
L_S	Typical Series Inductance	8.0	nH	Measured from top of terminal to mounting plane	
dv/dt	Max. Voltage Rate of Change (Rated V_R)	1000	V/ µs		

(1) Pulse Width < 300µs, Duty Cycle <2%

Thermal-Mechanical Specifications

	Parameters		MBR20...CT	Units	Conditions
T_J	Max. Junction Temperature Range		-65 to 150	°C	
T_{stg}	Max. Storage Temperature Range		-65 to 175	°C	
R_{thJC}	Max. Thermal Resistance Junction to Case		2.0	°C/W	DC operation
R_{thCS}	Typical Thermal Resistance, Case to Heatsink		0.50	°C/W	Mounting surface, smooth and greased
R_{thJA}	Max. Thermal Resistance Junction		60	°C/W	DC operation
wt	Approximate Weight		2 (0.07)	g (oz.)	
T	Mounting Torque	Min.	6 (5)	Kg-cm (lbf-in)	
		Max.	12 (10)		
	Case Style		TO-220AB		JEDEC

* For Additional Informations and Graphs, Please See the 16CTQ Series