

MBR20200CT

SWITCHMODE™ Power

Dual Schottky Rectifier

... using Schottky Barrier technology with a platinum barrier metal. This state-of-the-art device is designed for use in high frequency switching power supplies and converters with up to 48 V outputs. They block up to 200 V and offer improved Schottky performance at frequencies from 250 kHz to 5.0 MHz.

- **200 Volt Blocking Voltage**
- Low Forward Voltage Drop
- Guardring for Stress Protection and High dv/dt Capability (10,000 V/μs)
- Dual Diode Construction – Terminals 1 and 3 Must be Connected for Parallel Operation at Full Rating
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.9 Grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 Units per Plastic Tube
- Marking: B20200

MAXIMUM RATINGS (Per Leg)

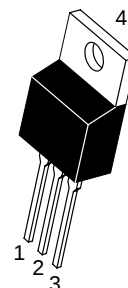
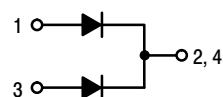
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	V
Average Rectified Forward Current (Rated V_R , $T_C = 125^\circ\text{C}$) Per Leg Per Package	$I_F(AV)$	10 20	A
Peak Repetitive Forward Current per Leg (Rated V_R , Square Wave, 20 kHz, $T_C = 90^\circ\text{C}$)	I_{FRM}	20	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I_{RRM}	1.0	A
Storage Temperature Range	T_{stg}	-65 to +175	°C
Operating Junction Temperature	T_J	-65 to +150	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs



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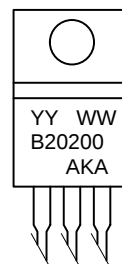
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SCHOTTKY BARRIER RECTIFIER 20 AMPERES 200 VOLTS



TO-220AB
PLASTIC
CASE 221A

MARKING DIAGRAM



YY = Year
WW = Work Week
B20200 = Device Code
AKA = Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping†
MBR20200CT	TO-220	50 Units/Rail
MBR20200CTG	TO-220	50 Units/Rail

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MBR20200CT

THERMAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS (Per Leg)

Maximum Instantaneous Forward Voltage (Note 1.)	$(I_F = 10 \text{ Amps}, T_C = 25^{\circ}\text{C})$ $(I_F = 10 \text{ Amps}, T_C = 125^{\circ}\text{C})$ $(I_F = 20 \text{ Amps}, T_C = 25^{\circ}\text{C})$ $(I_F = 20 \text{ Amps}, T_C = 125^{\circ}\text{C})$	V_F 0.9 0.8 1.0 0.9	Volts
Maximum Instantaneous Reverse Current (Note 1.)	$(\text{Rated dc Voltage}, T_C = 25^{\circ}\text{C})$ $(\text{Rated dc Voltage}, T_C = 125^{\circ}\text{C})$	I_R 1.0 50	mA

DYNAMIC CHARACTERISTICS (Per Leg)

Capacitance ($V_R = -5.0 \text{ V}$, $T_C = 25^{\circ}\text{C}$, Frequency = 1.0 MHz)	C_T	500	pF
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1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

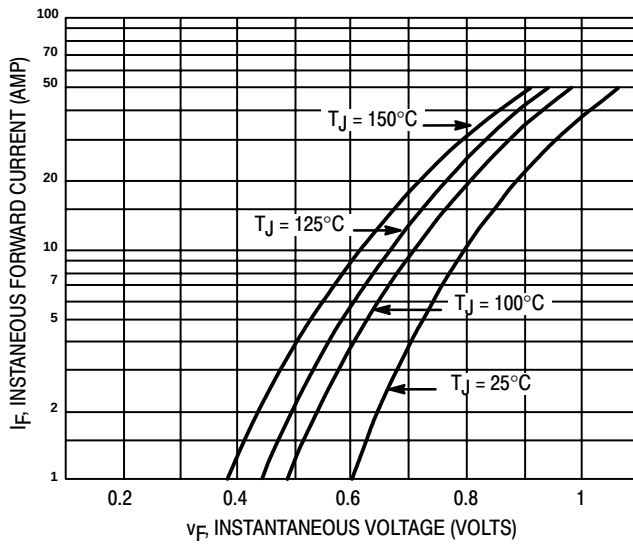


Figure 1. Typical Forward Voltage (Per Leg)

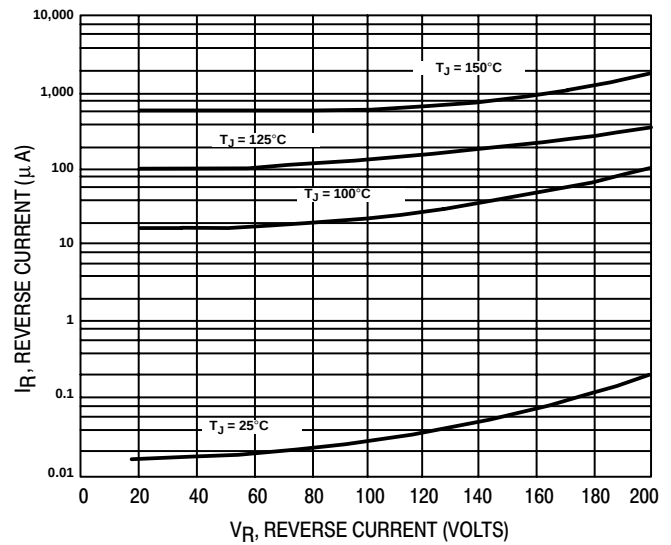


Figure 2. Typical Reverse Current (Per Leg)

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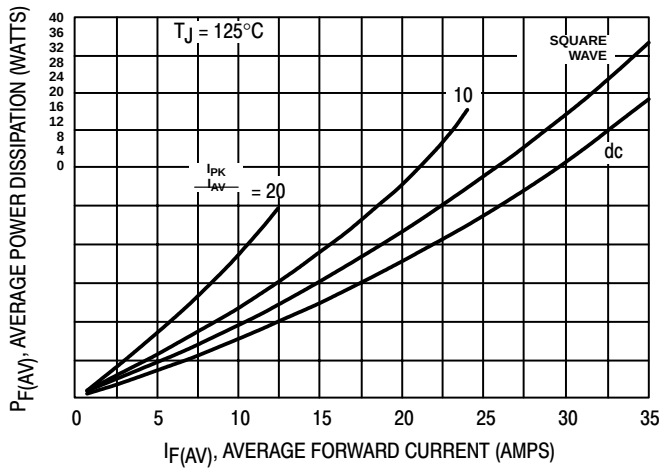


Figure 3. Forward Power Dissipation

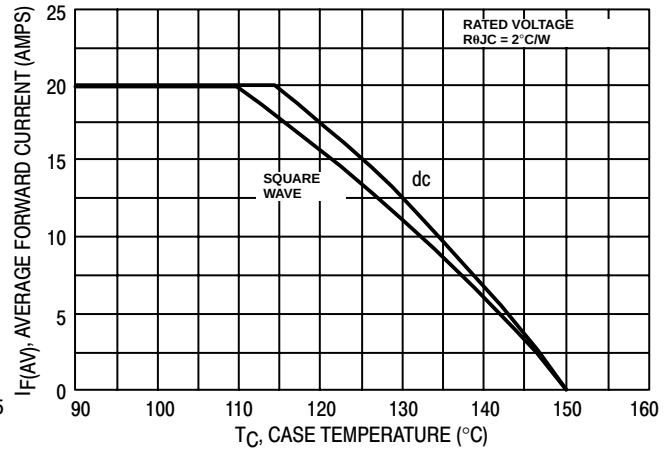


Figure 4. Current Derating, Case

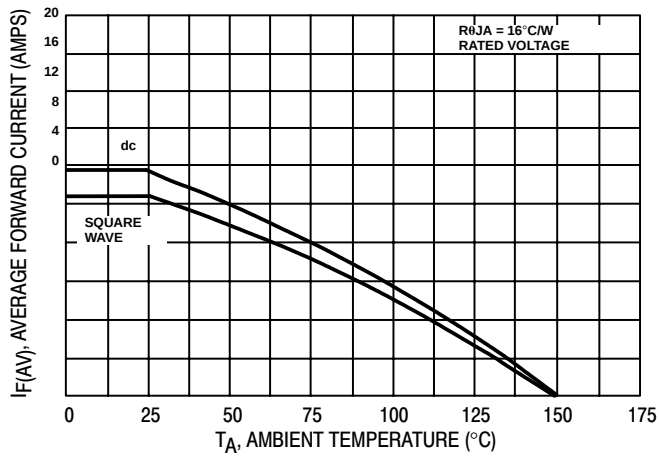


Figure 5. Current Derating, Ambient

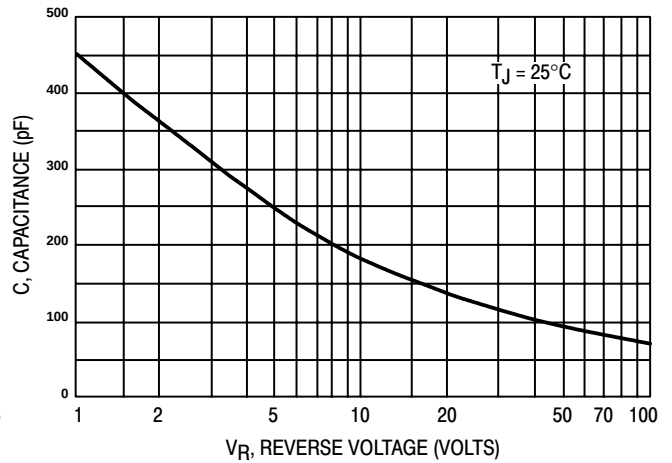
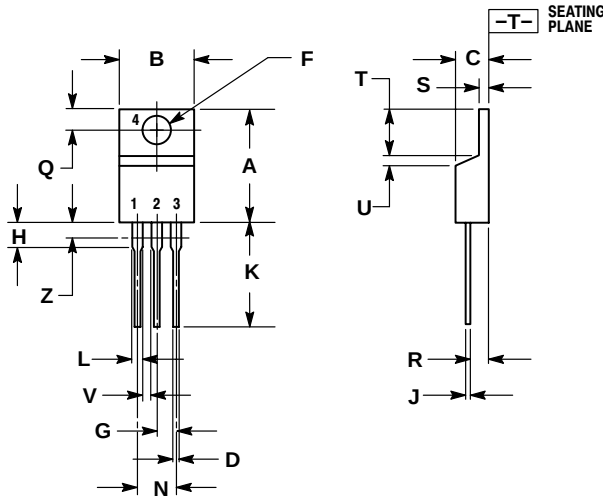


Figure 6. Typical Capacitance (Per Leg)

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PACKAGE DIMENSIONS

TO-220 PLASTIC CASE 221A-09 ISSUE AA



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

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