

MBR20200CTP

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 volt outputs. They block up to 200 volts 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

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: B20200P

MAXIMUM RATINGS (Per Leg)

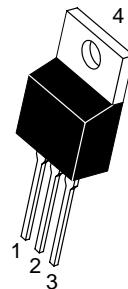
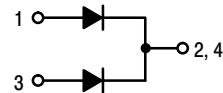
Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	V
Average Rectified Forward Current (Rated V_R , $T_C = 125^\circ\text{C}$) Per Leg Per Package	$I_{F(AV)}$	10 20	A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 90^\circ\text{C}$) Per Leg	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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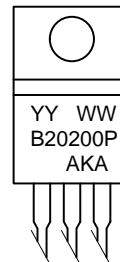
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SCHOTTKY BARRIER RECTIFIER 20 AMPERES 200 VOLTS



CASE 221A
TO-220AB
PLASTIC

MARKING DIAGRAM



YY = Year
WW = Work Week
B20200P = Device Code
AKA = Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR20200CTP	TO-220	50 Units/Rail

MBR20200CTP

THERMAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.0	°C/W

ELECTRICAL CHARACTERISTICS (Per Leg)

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

DYNAMIC CHARACTERISTICS (Per Leg)

Capacitance ($V_R = -5.0$ V, $T_C = 25^\circ\text{C}$, Frequency = 1.0 MHz)	C_T	110	pF
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1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

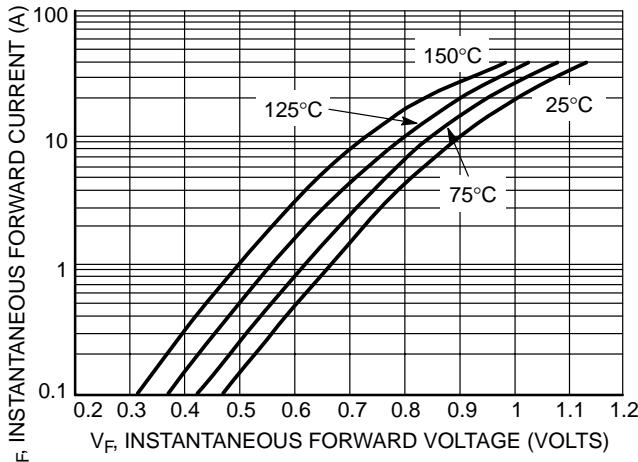


Figure 1. Maximum Forward Voltage

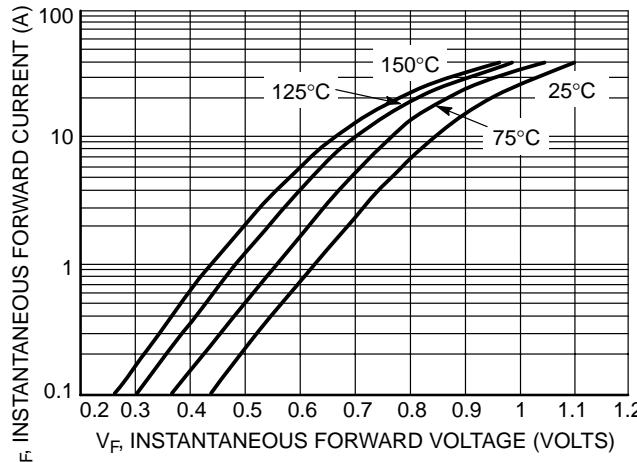


Figure 2. Typical Forward Voltage

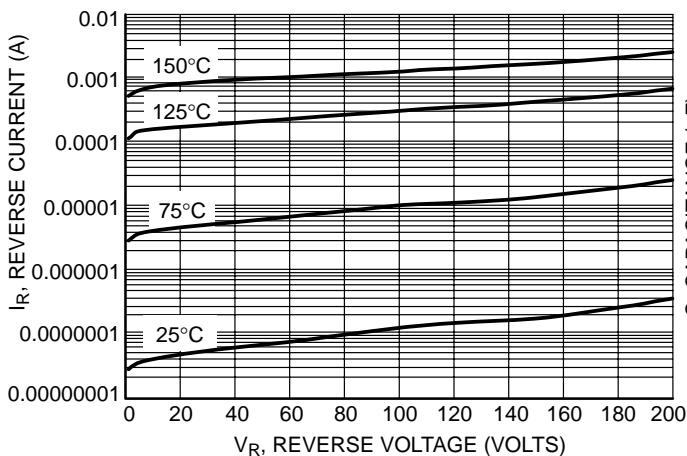


Figure 3. Typical Reverse Current

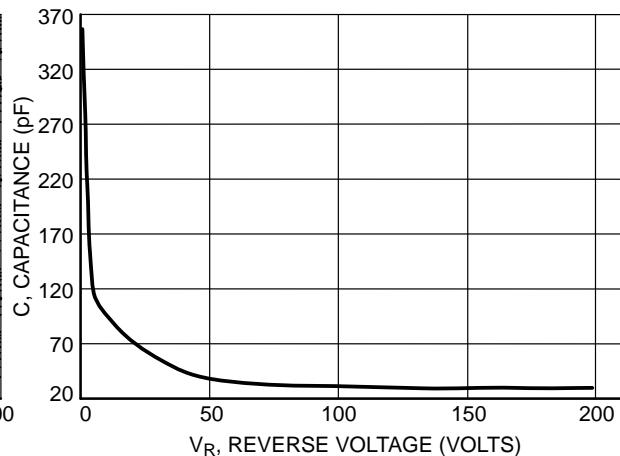


Figure 4. Typical Capacitance

MBR20200CTP

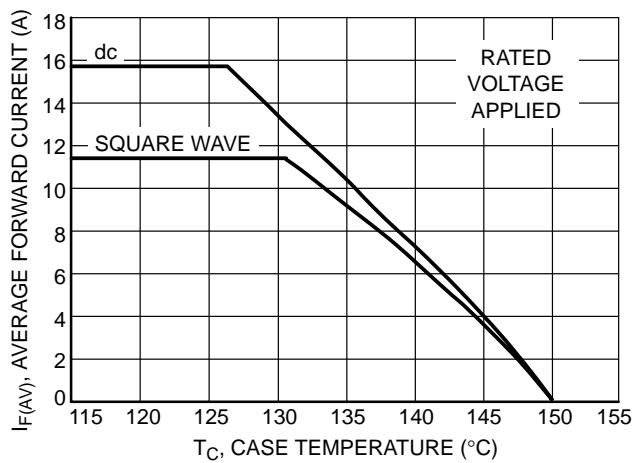


Figure 5. Current Derating, Case, Per Diode

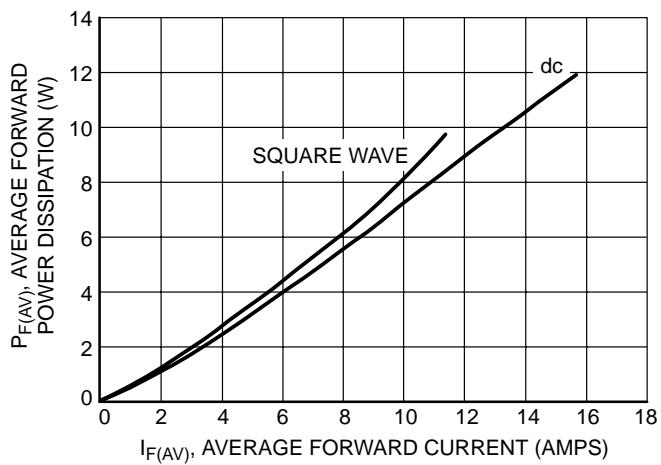
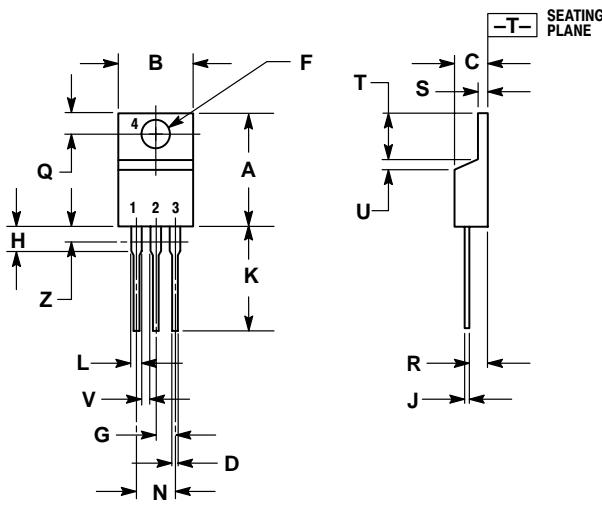


Figure 6. Forward Power Dissipation, Per Diode

PACKAGE DIMENSIONS

TO-220 THREE-LEAD
TO-220AB
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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