

MBRB20200CT

SWITCHMODE™ Power Rectifier

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 V 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

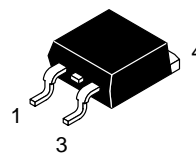
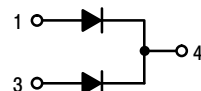
- Case: Epoxy, Molded, Epoxy Meets UL94, VO
- Weight: 1.7 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Available in 24 mm Tape and Reel, 800 units per 13" reel by adding a "T4" suffix to the part number
- Marking: B20200
- Device Meets MSL1 Requirements



ON Semiconductor®

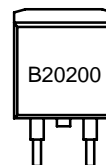
<http://onsemi.com>

SCHOTTKY BARRIER RECTIFIER 20 AMPERES 200 V



D²PAK
CASE 418B
STYLE 3

MARKING DIAGRAM



B20200 = Device Code

ORDERING INFORMATION

Device	Package	Shipping†
MBRB20200CT	D ² PAK	50/Rail
MBRB20200CTT4	D ² PAK	800/Tape & Reel

†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.

MBRB20200CT

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 (At Rated V_R , $T_C = 134^\circ\text{C}$) Per Leg Per Device	$I_{F(AV)}$	10 20	A
Peak Repetitive Forward Current (At Rated V_R , Square Wave, 20 kHz, $T_C = +137^\circ\text{C}$) Per Leg	I_{FRM}	20	A
Nonrepetitive 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	$^\circ\text{C}$
Operating Junction Temperature	T_J	-65 to +150	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/ μs

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS (Per Leg)

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

ELECTRICAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1.) ($I_F = 10\text{ A}$, $T_C = 25^\circ\text{C}$) ($I_F = 10\text{ A}$, $T_C = 125^\circ\text{C}$) ($I_F = 20\text{ A}$, $T_C = 25^\circ\text{C}$) ($I_F = 20\text{ A}$, $T_C = 125^\circ\text{C}$)	V_F	0.9 0.8 1.0 0.9	V
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 ($V_R = -5.0\text{ V}$, $T_C = 25^\circ\text{C}$, Frequency = 1.0 MHz)	C_T	500	pF
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1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

MBRB20200CT

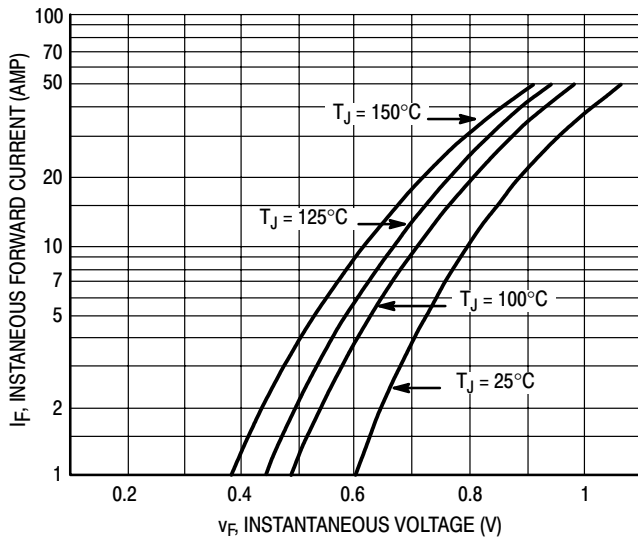


Figure 1. Typical Forward Voltage (Per Leg)

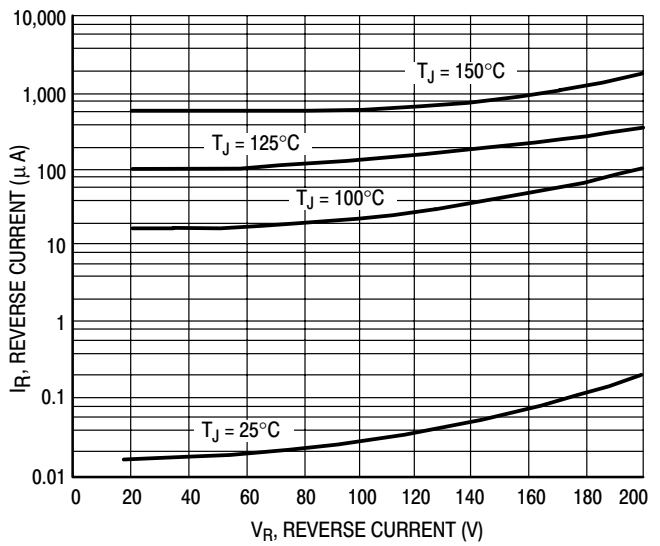


Figure 2. Typical Reverse Current (Per Leg)

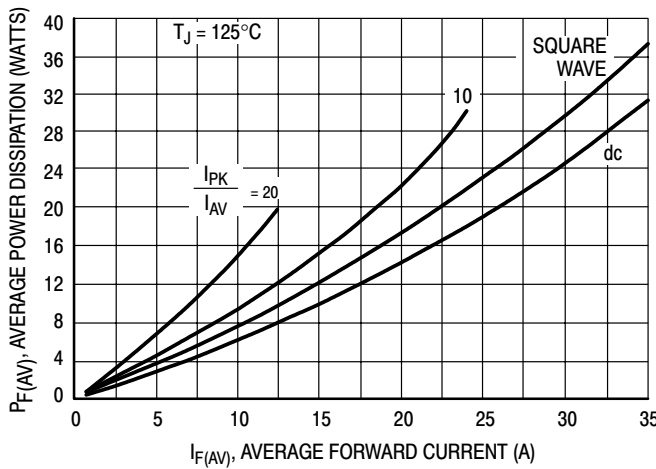


Figure 3. Forward Power Dissipation

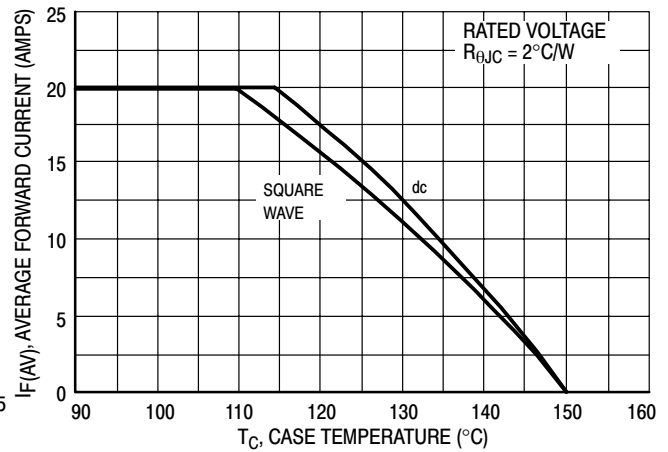


Figure 4. Current Derating, Case

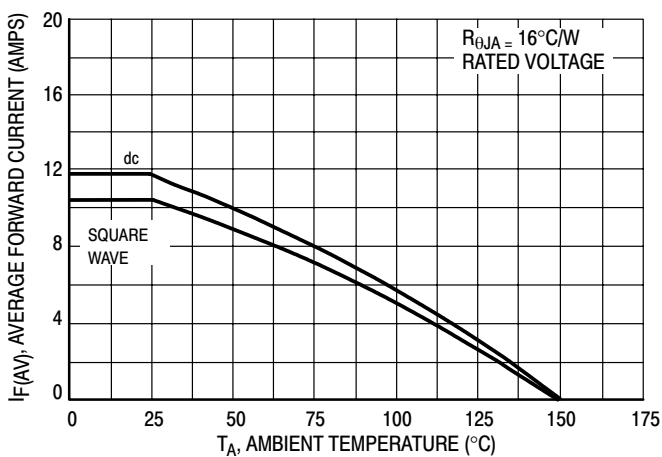


Figure 5. Current Derating, Ambient

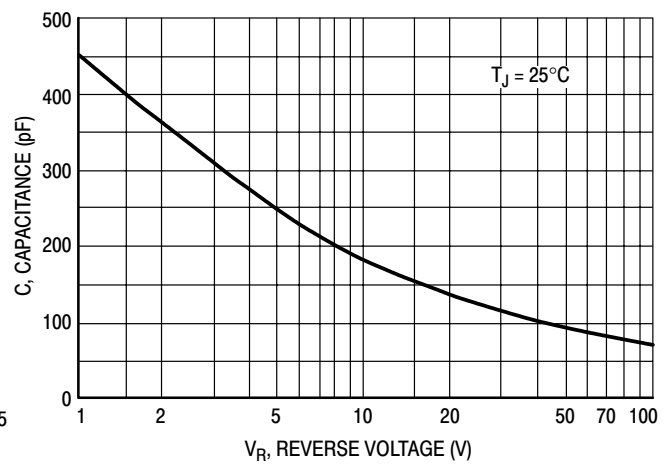
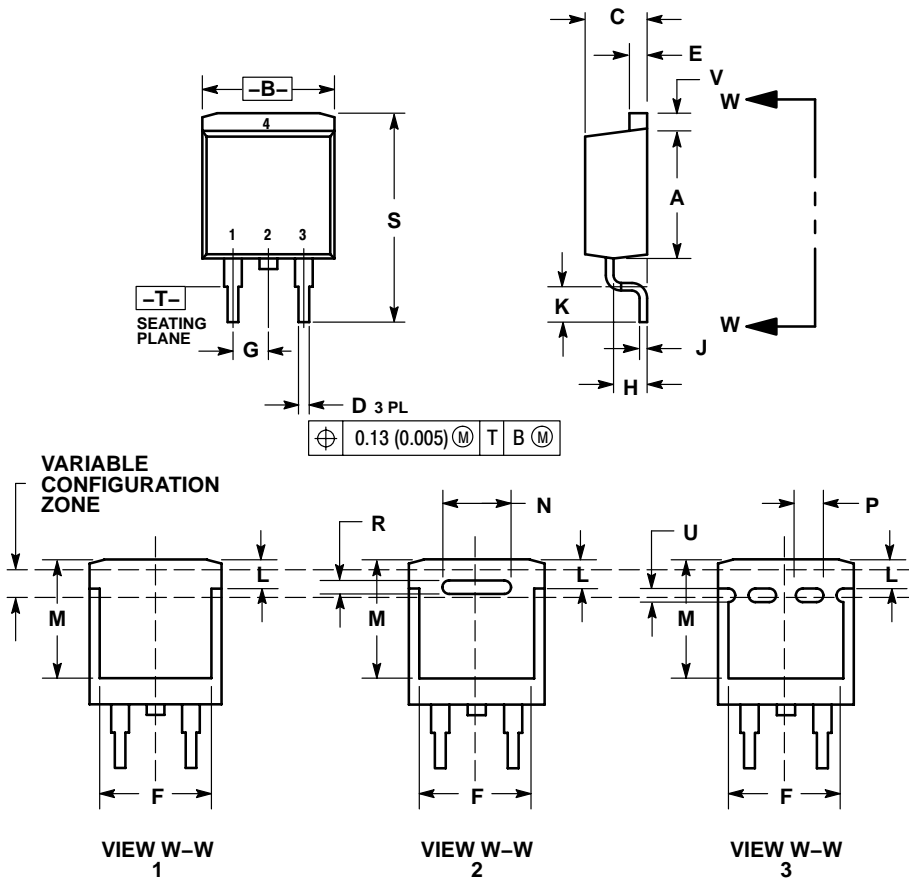


Figure 6. Typical Capacitance (Per Leg)

MBRB20200CT

PACKAGE DIMENSIONS

D²PAK
CASE 418B-04
ISSUE H



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 418B-01 THRU 418B-03 OBSOLETE, NEW STANDARD 418B-04.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.340	0.380	8.64	9.65
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.83
D	0.020	0.035	0.51	0.89
E	0.045	0.055	1.14	1.40
F	0.310	0.350	7.87	8.89
G	0.100 BSC		2.54 BSC	
H	0.080	0.110	2.03	2.79
J	0.018	0.025	0.46	0.64
K	0.090	0.110	2.29	2.79
L	0.052	0.072	1.32	1.83
M	0.280	0.320	7.11	8.13
N	0.197 REF		5.00 REF	
P	0.079 REF		2.00 REF	
R	0.039 REF		0.99 REF	
S	0.575	0.625	14.60	15.88
V	0.045	0.055	1.14	1.40

STYLE 3:

- PIN 1: ANODE
- 2: CATHODE
- 3: ANODE
- 4: CATHODE

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