

## 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: 1.7 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

#### 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	Volts
Average Rectified Forward Current (Rated $V_R$ ) $T_C = 125^\circ C$	$I_{F(AV)}$	10 20	Amps
Peak Repetitive Forward Current, Per Leg (Rated $V_R$ , Square Wave, 20 kHz) $T_C = 90^\circ C$	$I_{FRM}$	20	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	150	Amps
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	$I_{RRM}$	1.0	Amp
Operating Junction Temperature	$T_J$	-65 to +150	°C
Storage Temperature	$T_{stg}$	-65 to +175	°C
Voltage Rate of Change (Rated $V_R$ )	dv/dt	10,000	V/μs

#### THERMAL CHARACTERISTICS (PER LEG)

Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	°C/W
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#### ELECTRICAL CHARACTERISTICS (PER LEG)

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

#### DYNAMIC CHARACTERISTICS (PER LEG)

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

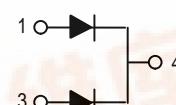
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Preferred devices are Motorola recommended choices for future use and best overall value.

## MBRB20200CT

Motorola Preferred Device

SCHOTTKY BARRIER  
RECTIFIER  
20 AMPERES  
200 VOLTS



CASE 418B-02

## MBRB20200CT

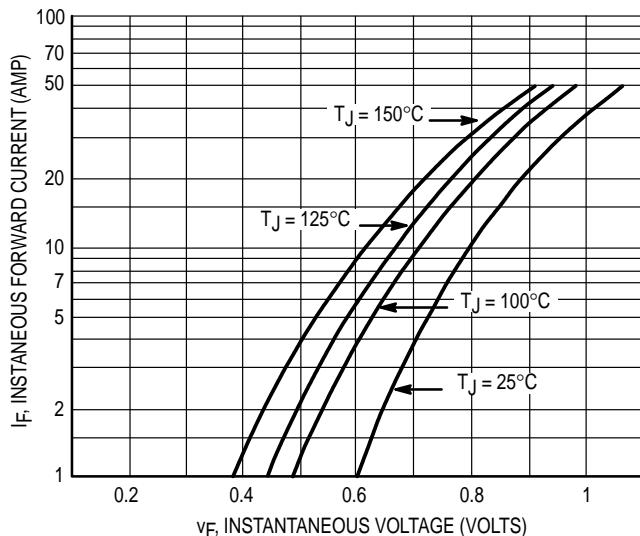


Figure 1. Typical Forward Voltage (Per Leg)

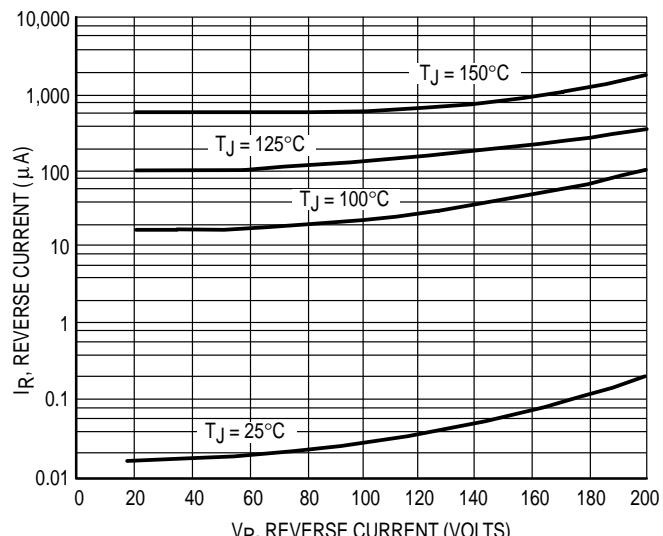


Figure 2. Typical Reverse Current (Per Leg)

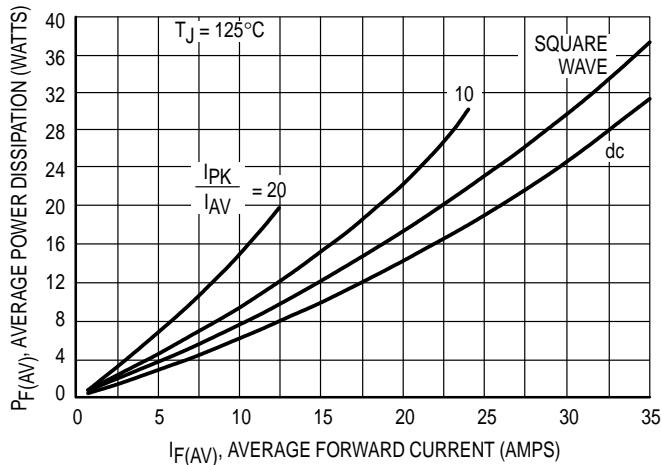


Figure 3. Forward Power Dissipation

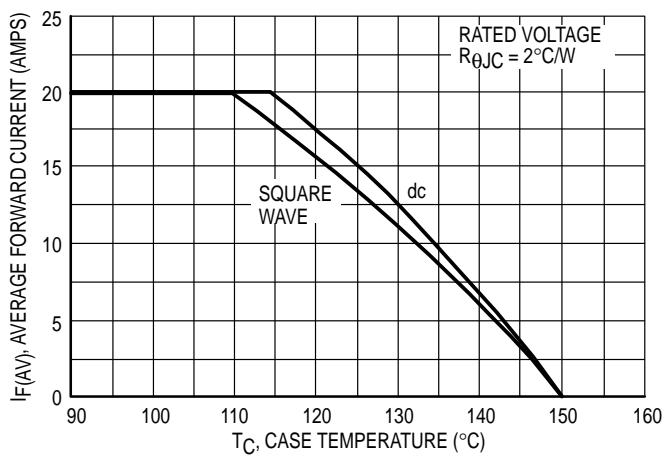


Figure 4. Current Derating, Case

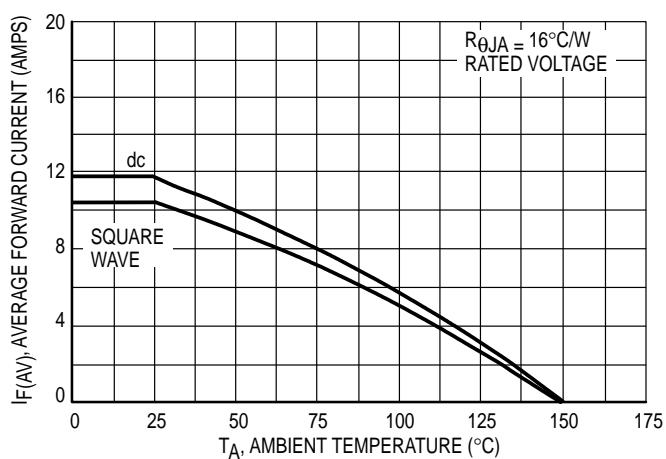


Figure 5. Current Derating, Ambient

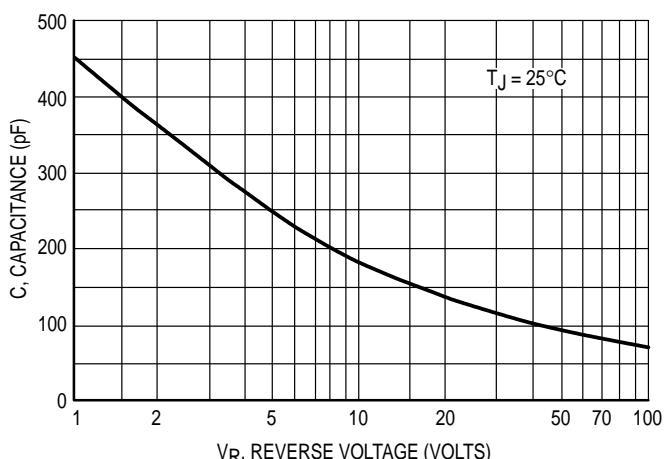
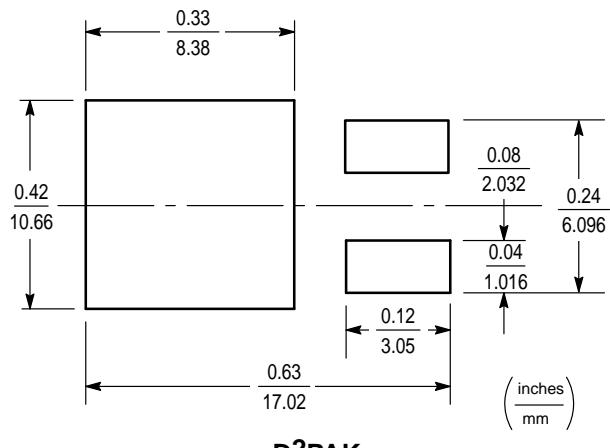
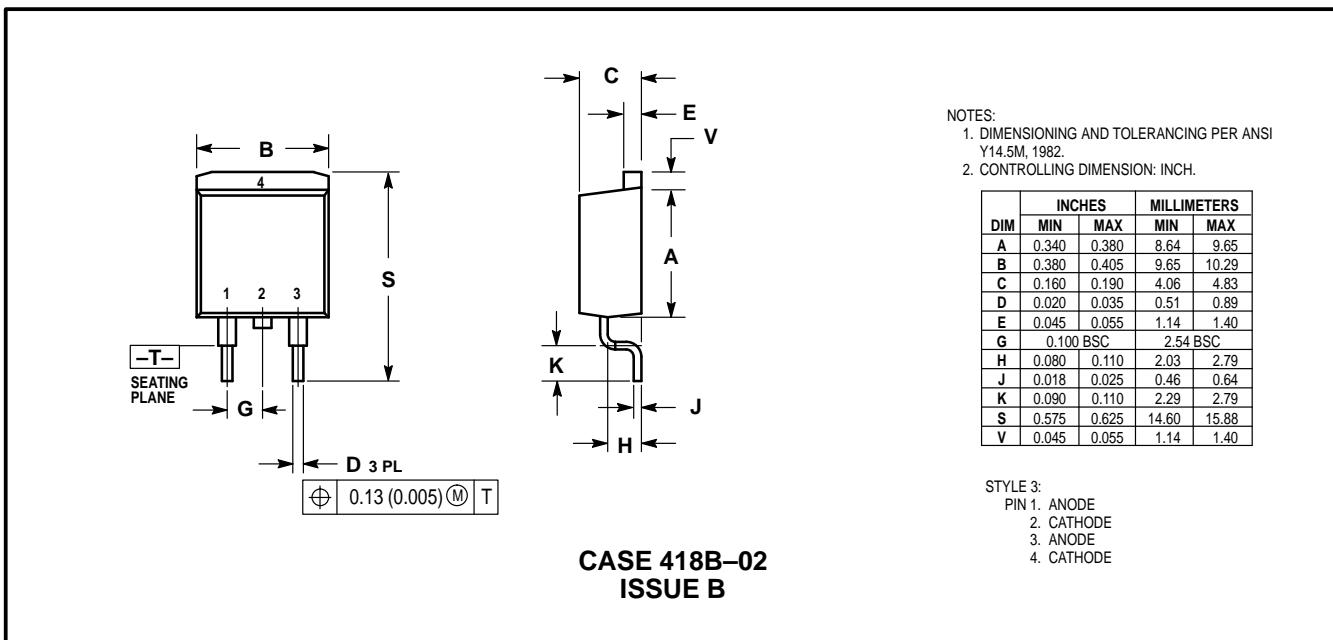


Figure 6. Typical Capacitance (Per Leg)

**RECOMMENDED FOOTPRINT FOR D<sup>2</sup>PAK**

**MBRB20200CT****PACKAGE DIMENSIONS**

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