

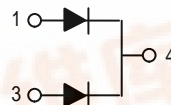
SWITCHMODE™ Power Dual Schottky Rectifier

... 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

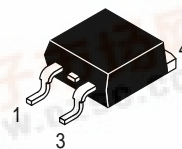
- Case: Epoxy, Molded
- Weight: 1.7 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Available in 24 mm Tape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



Motorola Preferred Device

MBRB20200CT

**SCHOTTKY BARRIER
RECTIFIER
20 AMPERES
200 VOLTS**



CASE 418B-02

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) $T_C = 125^\circ\text{C}$	$I_F(AV)$	10 20	Amps
Peak Repetitive Forward Current, Per Leg (Rated V_R , Square Wave, 20 kHz) $T_C = 90^\circ\text{C}$	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
---------------------------------------	-----------------	-----	------

ELECTRICAL CHARACTERISTICS (PER LEG)

Maximum Instantaneous Forward Voltage (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 (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	500	pF
---	-------	-----	----

(1) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

MEGAHERTZ and SWITCHMODE are trademarks of Motorola, Inc.

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



MOTOROLA

MBRB20200CT

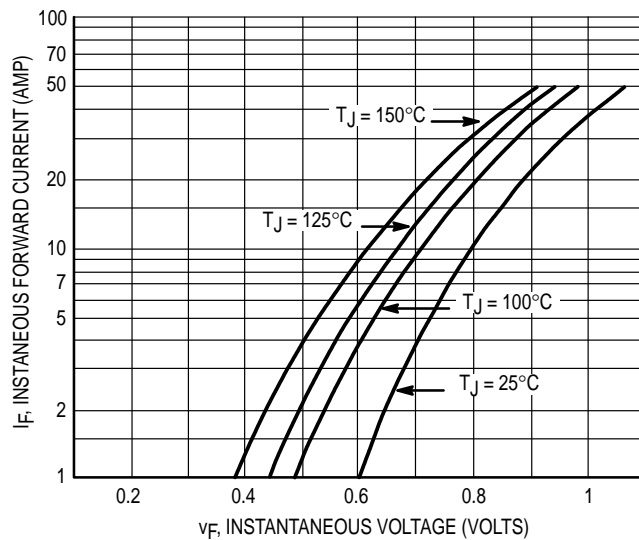


Figure 1. Typical Forward Voltage (Per Leg)

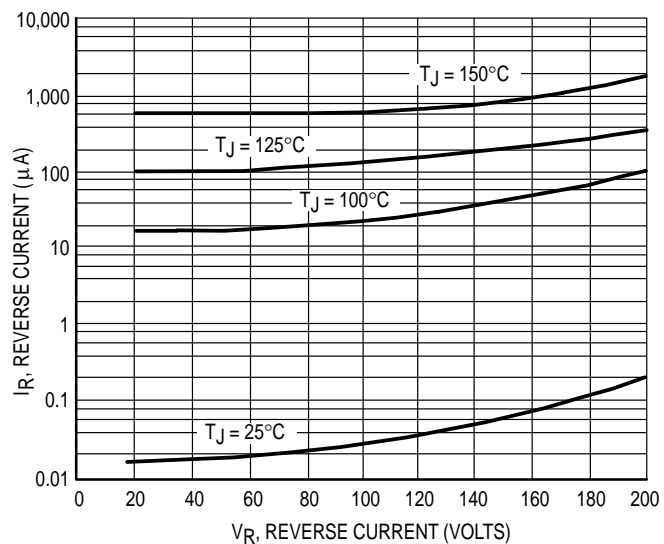


Figure 2. Typical Reverse Current (Per Leg)

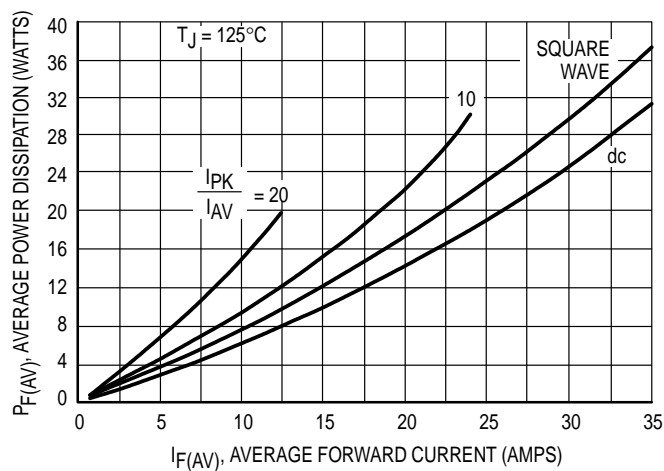


Figure 3. Forward Power Dissipation

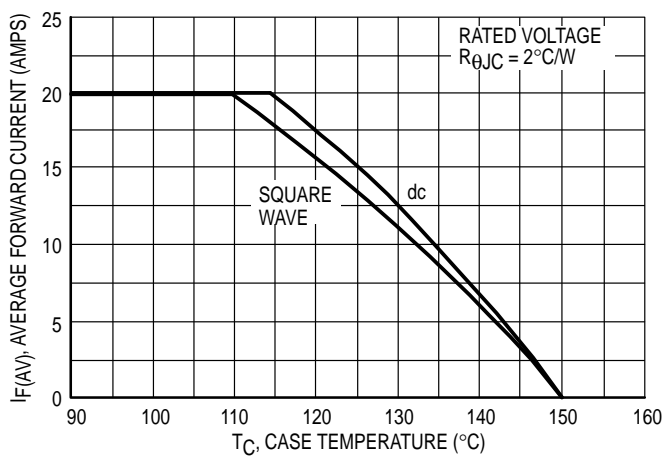


Figure 4. Current Derating, Case

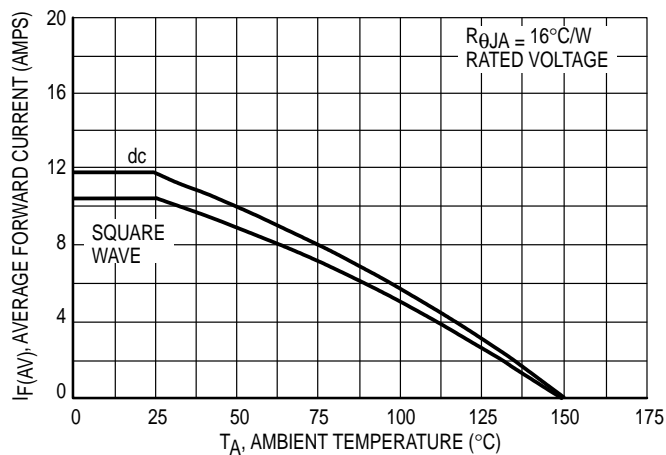


Figure 5. Current Derating, Ambient

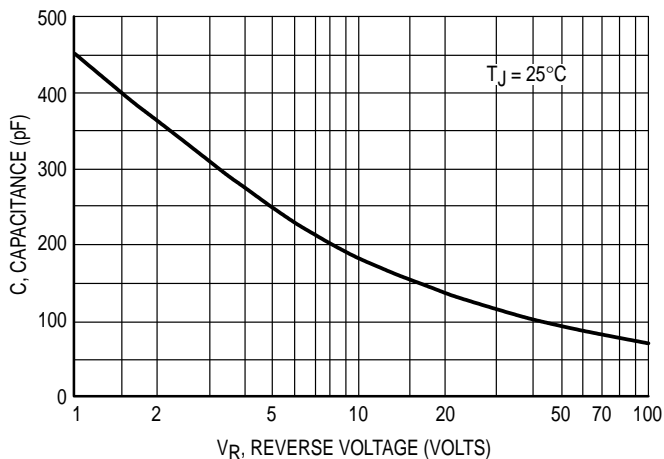
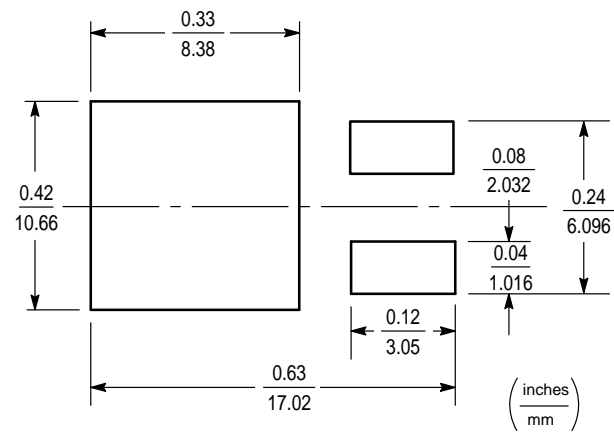


Figure 6. Typical Capacitance (Per Leg)

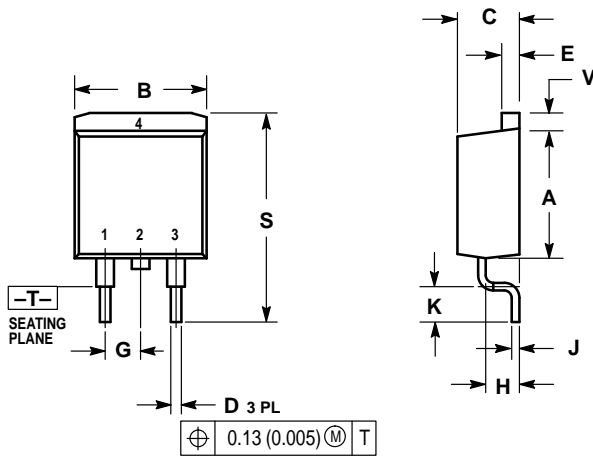
RECOMMENDED FOOTPRINT FOR D²PAK



D²PAK

MBRB20200CT

PACKAGE DIMENSIONS




CASE 418B-02
ISSUE B

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

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
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
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

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

How to reach us:
USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217. 303-675-2140 or 1-800-441-2447

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609
INTERNET: <http://Design-NET.com>

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center,
3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 81-3-3521-8315

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298