

# MBRB20100CT1



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Product Preview

**SWITCHMODE™**

**Schottky Power Rectifier**

**D<sup>2</sup>PAK-SL Straight-Leaded  
Through Hole Mount Package**

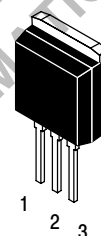
...using the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Package Designed for Low Profile Through Hole Mount
- Center-Tap Configuration
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL94, V<sub>O</sub> at 1/8"
- Guaranteed Reverse Avalanche
- Short Heat Sink Tab Manufactured — Not Sheared!
- Similar in Size to Industry Standard TO-220

#### Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 1.7 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
- Marking: B20101 With 1 signifying straight leads

**SCHOTTKY BARRIER  
RECTIFIER  
20 AMPERES  
100 VOLTS**



**D<sup>2</sup>PAK-SL  
CASE 418C-01**

#### MAXIMUM RATINGS PER DIODE LEG

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	Volts
Average Rectified Forward Current (At Rated $V_R$ , $T_C = 110^\circ\text{C}$ )	$I_{F(AV)}$	10 20	Amps
Peak Repetitive Forward Current (At Rated $V_R$ , Square Wave, 20 kHz, $T_C = 100^\circ\text{C}$ )	$I_{FRM}$	20	Amps
Non-Repetitive 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 $\mu\text{s}$ , 1.0 kHz)	$I_{RRM}$	0.5	Amp
Storage / Operating Case Temperature	$T_{stg}$ , $T_C$	-65 to +175	°C
Operating Junction Temperature	$T_J$	-65 to +150	°C
Voltage Rate of Change	$dv/dt$	10,000	V/ $\mu\text{s}$

#### THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	Per Leg	$R_{\theta JC}$	2.0	°C/W
— Junction to Ambient	Per Leg	$R_{\theta JA}$	50	

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## ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage <sup>(1)</sup> , see Figure 2 $I_F = 1.0 \text{ Adc}$ $I_F = 2.0 \text{ Adc}$	Per Leg	$V_F$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	Volts
			0.85 0.95	0.75 0.85	
Maximum Instantaneous Reverse Current, see Figure 4 $V_R = 100 \text{ V}$	Per Leg	$I_R$	$T_J = 25^\circ\text{C}$	$T_J = 125^\circ\text{C}$	mA
			0.1	6.0	

(1) Pulse Test: Pulse Width  $\leq \mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

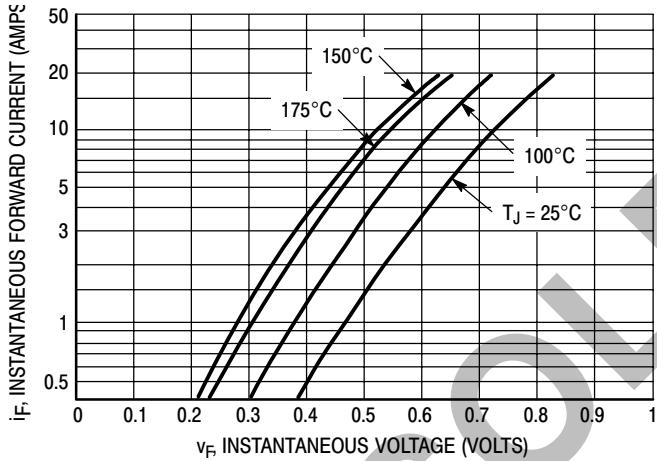


Figure 1. Typical Forward Voltage Per Diode

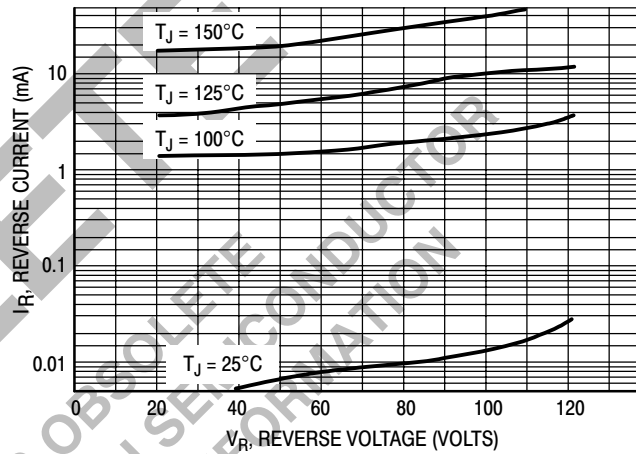


Figure 2. Typical Reverse Current Per Diode

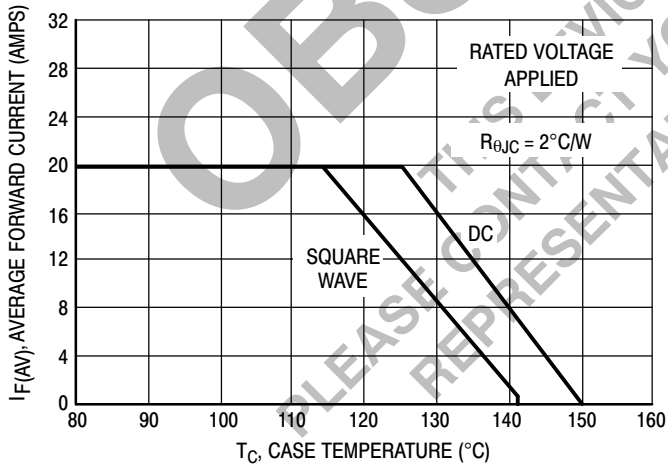


Figure 3. Typical Current Derating, Case, Per Leg

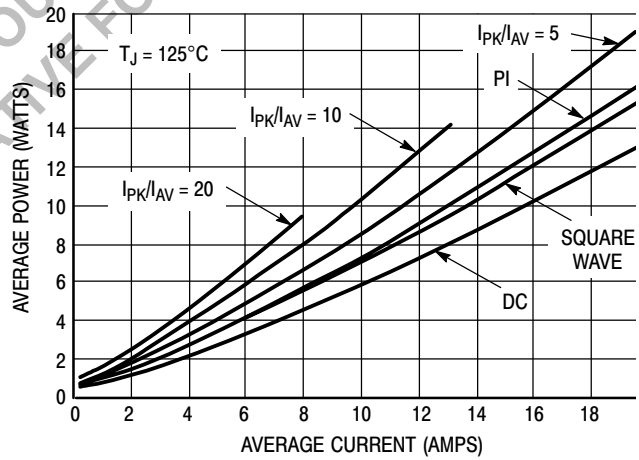
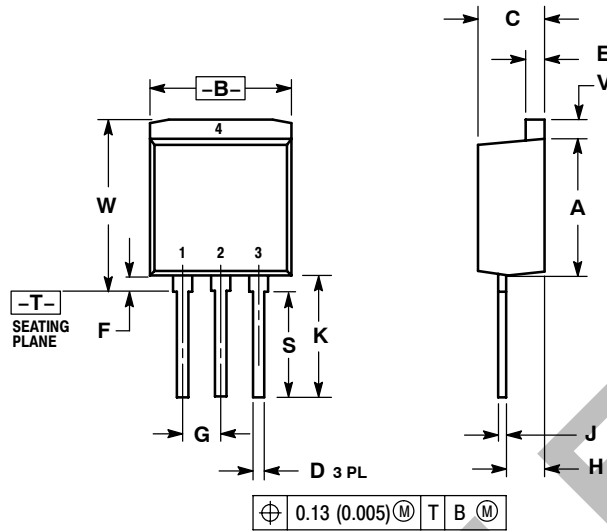


Figure 4. Average Power Dissipation and Average Current

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## PACKAGE DIMENSIONS

### CASE 418C-01 ISSUE O



- 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
F	0.039 REF		1.00 REF	
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	0.280	0.360	7.11	9.14
S	0.276 REF		7.00 REF	
V	0.045	0.055	1.14	1.40
W	0.423	0.462	10.75	11.75

⊕ 0.13 (0.005) M T B M

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