Product Preview

SWITCHMODE™ Schottky Power Rectifier

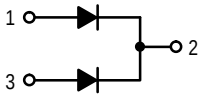
D²PAK–SL Straight–Leaded Through Hole Mount Package

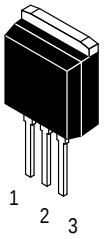
MBRB20100CT1

SCHOTTKY BARRIER RECTIFIER 20 AMPERES 100 VOLTS

…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_O at 1/8″
- Guaranteed Reverse Avalanche
- Short Heat Sink Tab Manufactured — Not Sheared!
- Similar in Size to Industry Standard TO–220





CASE 418C–01
D²PAK–SL

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
- Shipped in 50 units per plastic tube
- Marking: B20101 With 1 signifying straight leads

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°C)	Per Leg Per Package	$I_{F(AV)}$	10 20	Amps
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_C = 100°C)	Per Leg	I_{FRM}	20	Amps
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	Per Package	I_{FSM}	150	Amps
Peak Repetitive Reverse Surge Current (2.0 μs, 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/μs

THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (1), see Figure 2 I_F = 1.0 Adc I_F = 2.0 Adc	Per Leg	V_F	**T_J = 25°C** 0.85 0.95	**T_J = 125°C** 0.75 0.85	Volts
Maximum Instantaneous Reverse Current, see Figure 4 V_R = 100 V	Per Leg	I_R	**T_J = 25°C** 0.1	**T_J = 125°C** 6.0	mA

(1) Pulse Test: Pulse Width ≤ μs, Duty Cycle ≤ 2%.

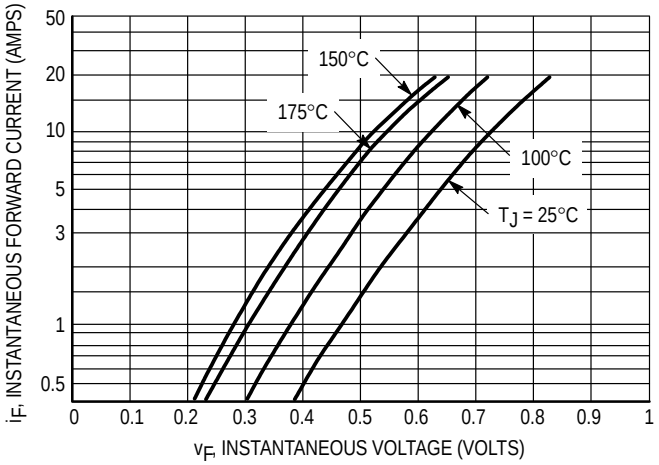


Figure 1. Typical Forward Voltage Per Diode

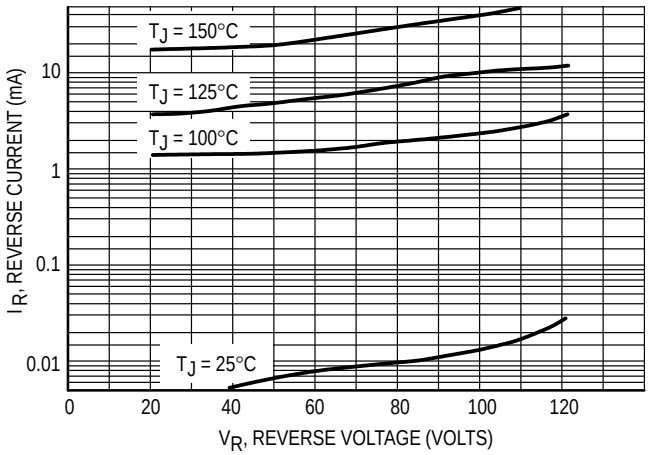


Figure 2. Typical Reverse Current Per Diode

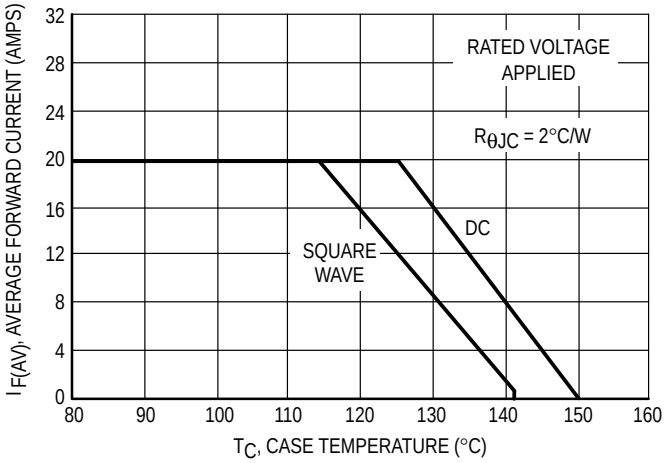


Figure 3. Typical Current Derating, Case, Per Leg

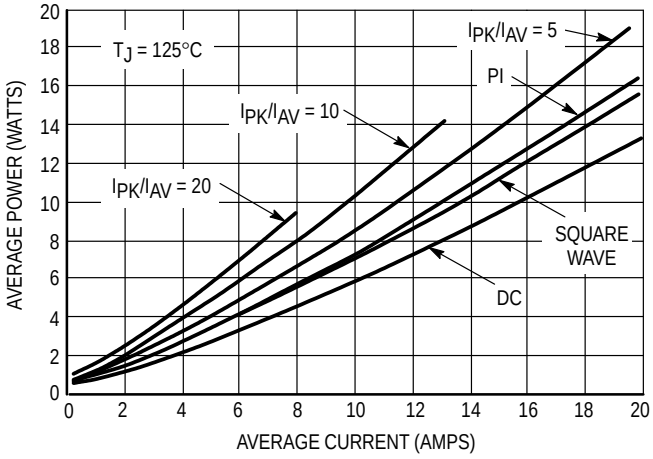
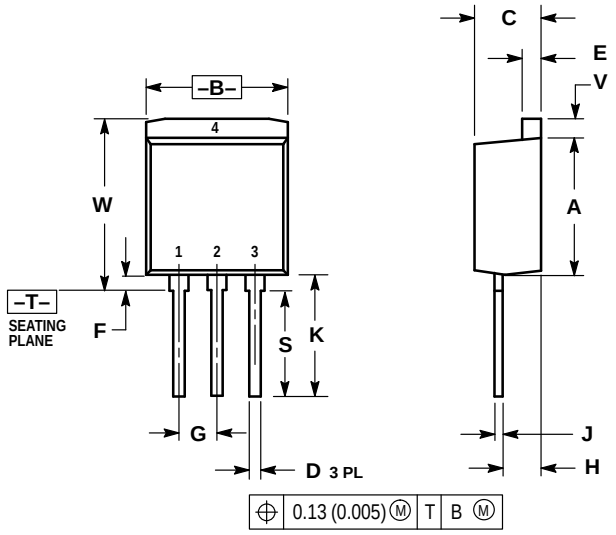


Figure 4. Average Power Dissipation and Average Current

PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	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

CASE 418C–01
ISSUE O

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