MBRJ20L60CTG

Product Preview

SWITCHMODE Power Rectifier 60 V, 20 A

Features and Benefits

- Low Power Loss/High Efficiency
- High Surge Capacity
- 20 A Total (10 A Per Diode Leg)
- Guard−Ring for Stress Protection
- This is a Pb−Free Device

Applications

- Power Supply − Output Rectification
- Power Management
- Instrumentation

Mechanical Characteristics:

- Case: Epoxy, Molded
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Weight: 1.9 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 50 Units Per Plastic Tube

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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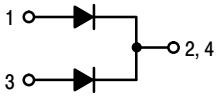
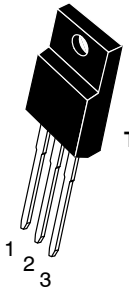
http://onsemi.com

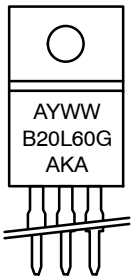
SCHOTTKY BARRIER RECTIFIER 20 AMPERES 60 VOLTS



MARKING DIAGRAM



TO−220 FULLPAK™ CASE 221AH CT SUFFIX



A	= Assembly Location
Y	= Year
WW	= Work Week
B20L60	= Device Code
G	= Pb−Free Package
AKA	= Polarity Designator

ORDERING INFORMATION

Device	Package	Shipping
MBRJ20L60CTG	TO−220AH (Pb−Free)	50 Units / Rail

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	60	V
Average Rectified Forward Current (Rated V_R) T_C = 138°C (Rated V_R) T_C = 123°C	 Per Diode Per Device	$I_{F(AV)}$	 10 20	A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)		I_{FSM}	240	A
Operating Junction Temperature (Note 1)		T_J	−55 to +150	°C
Storage Temperature		T_{stg}	−65 to +175	°C
ESD Ratings:	Machine Model = C Human Body Model = 3B		> 400 > 8000	V

THERMAL CHARACTERISTICS

Maximum Thermal Resistance − Junction−to−Case − Junction−to−Ambient	 $R_{\theta JC}$ $R_{\theta JA}$	 3.9 105	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Rating	Symbol	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 2) (I_F = 10 A, T_C = 25°C) (I_F = 10 A, T_C = 125°C) (I_F = 20 A, T_C = 25°C) (I_F = 20 A, T_C = 125°C)	v_F	 0.53 0.49 0.68 0.64	 0.57 0.54 0.73 0.69	V
Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, T_C = 25°C) (Rated DC Voltage, T_C = 125°C)	i_R	 118 52	 380 96	 μA mA

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. The heat generated must be less than the thermal conductivity from Junction−to−Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.
2. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

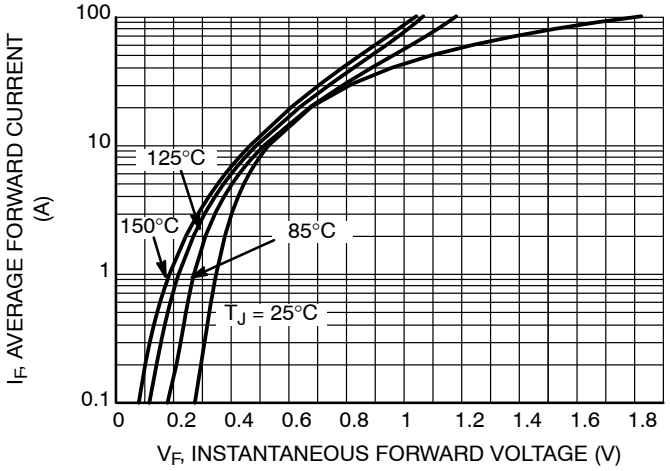


Figure 1. Typical Forward Voltage

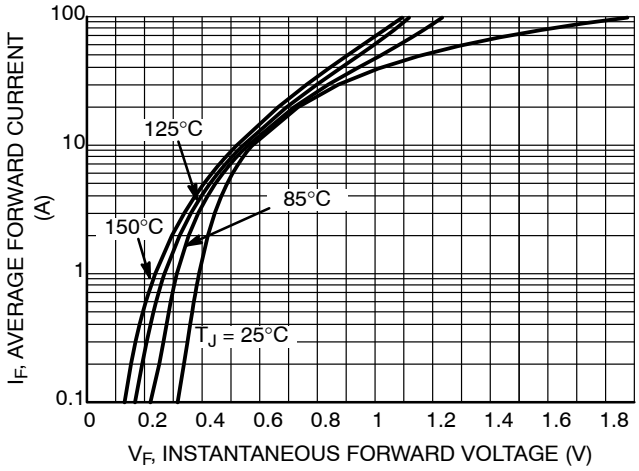


Figure 2. Maximum Forward Voltage

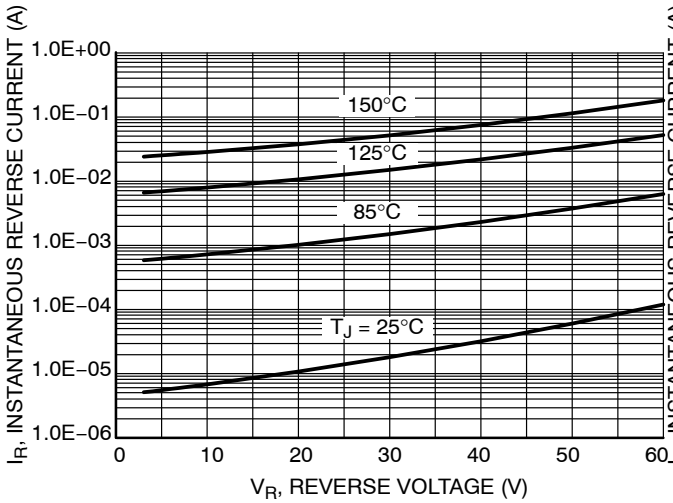


Figure 3. Typical Reverse Current

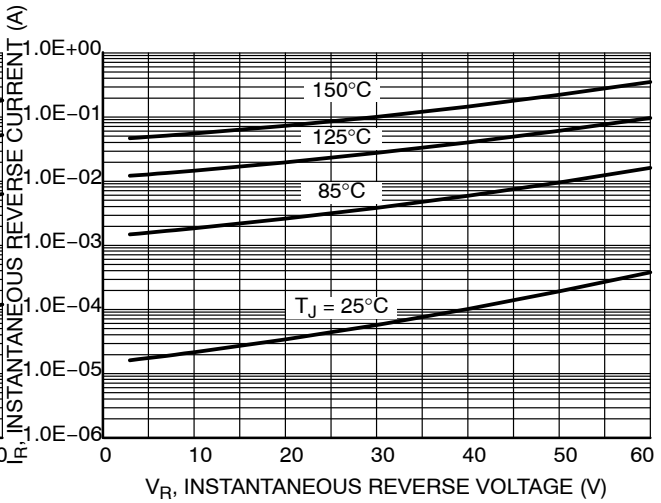


Figure 4. Maximum Reverse Current

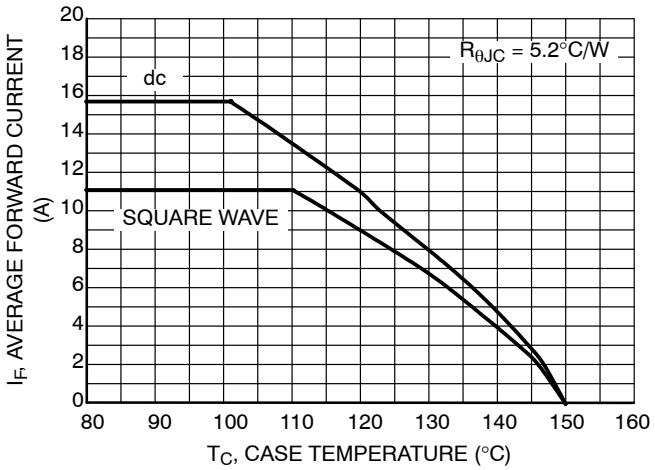


Figure 5. Current Derating, Case per Leg

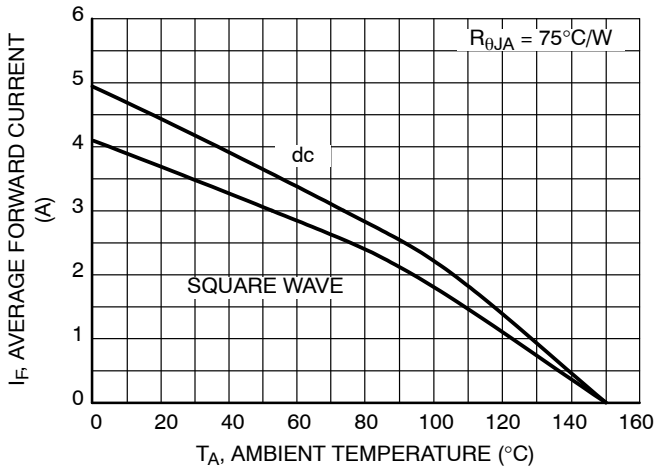


Figure 6. Current Derating, Ambient per Leg

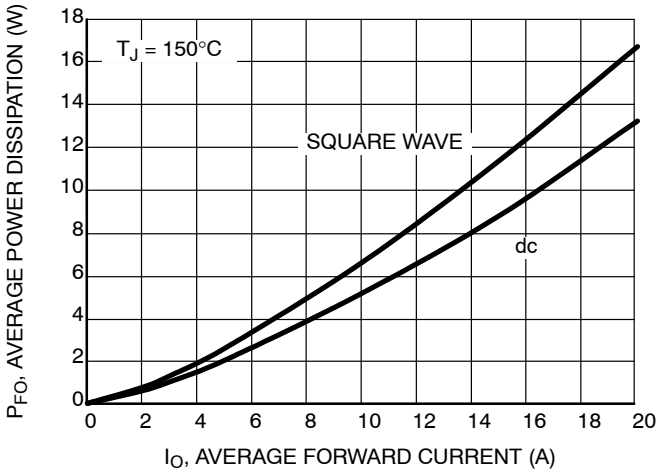


Figure 7. Forward Power Dissipation

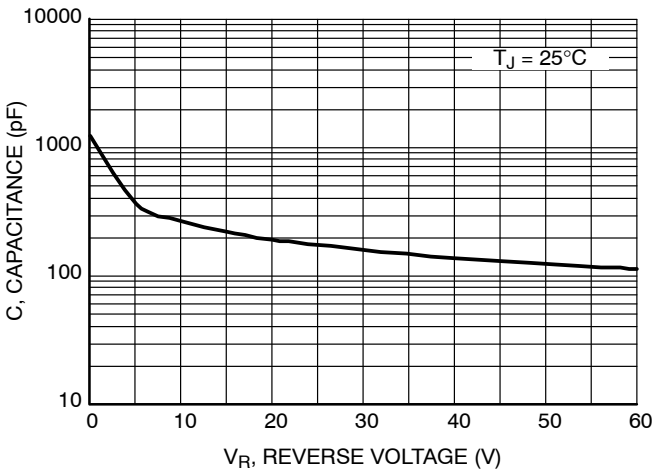


Figure 8. Capacitance

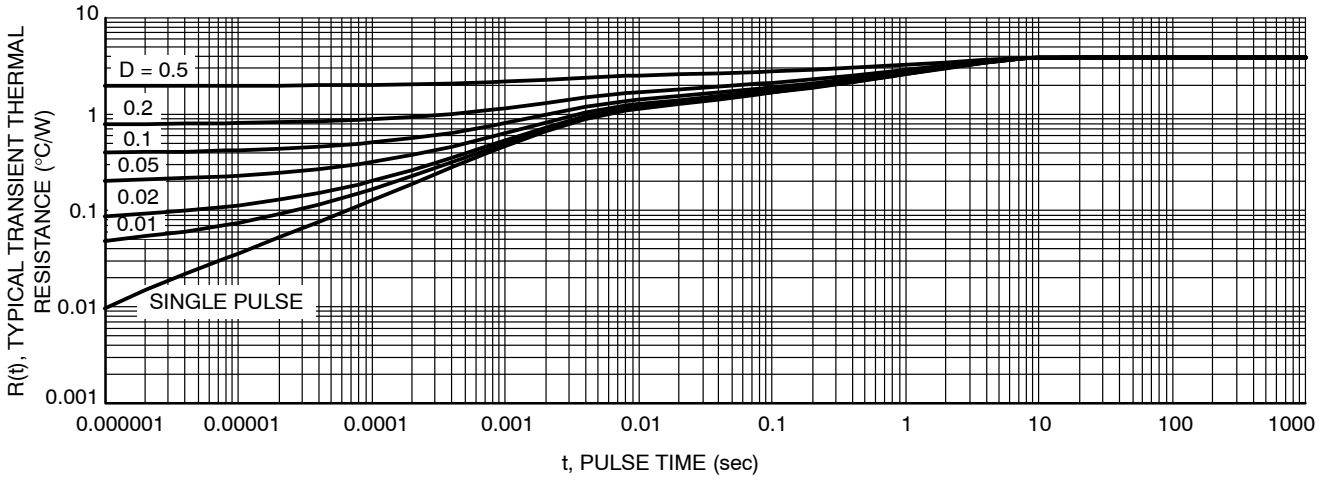
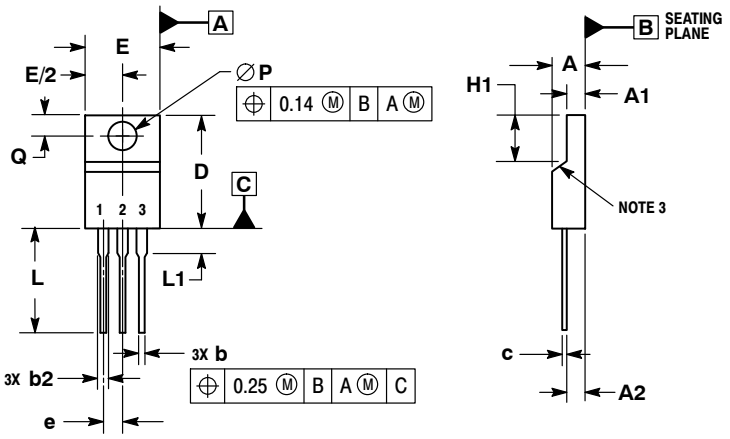


Figure 9. Typical Transient Thermal Response, Junction−to−Case

MBRJ20L60CTG

PACKAGE DIMENSIONS

TO−220 FULLPACK, 3−LEAD
CASE 221AH
ISSUE C



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR UNCONTROLLED IN THIS AREA.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH AND GATE PROTRUSIONS. MOLD FLASH AND GATE PROTRUSIONS NOT TO EXCEED 0.13 PER SIDE. THESE DIMENSIONS ARE TO BE MEASURED AT OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSION b2 DOES NOT INCLUDE DAMBAR PROTRUSION. LEAD WIDTH INCLUDING PROTRUSION SHALL NOT EXCEED 2.00.

	MILLIMETERS	
DIM	MIN	MAX
A	4.30	4.70
A1	2.50	2.90
A2	2.50	2.70
b	0.54	0.84
b2	1.10	1.40
c	0.49	0.79
D	14.70	15.30
E	9.70	10.30
e	2.54 BSC	
H1	6.70	7.10
L	12.70	14.73
L1	---	2.80
P	3.00	3.40
Q	2.80	3.20

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PUBLICATION ORDERING INFORMATION

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