

## Product Summary

MBR10200CT / MBRF10200CT (Per Leg)

$V_{RMM}$ (V)	$I_o$ (A)	$V_F$ (MAX) (V) @ +25°C	$I_R$ (MAX) (mA) @ +25°C
200	5	0.91	0.1

## Features and Benefits

- Guard Ring Die Construction for Transient Protection.
- High Surge Current Capability.
- Low Forward Voltage Drop.
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**
- Qualified to AEC-Q101 Standards for High Reliability

## Description and Applications

This Schottky Barrier Rectifier has been designed to meet the general requirements of commercial applications. It is ideally suited for use as:

- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

## Mechanical Data

- Case: TO220AB, ITO-220AB
- Case Material: Molded Plastic, "Green" Molding compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Below
- Weight: TO-220AB – 1.95 grams (approximate)  
ITO-220AB – 1.69 grams (approximate)



TO-220AB  
Top View



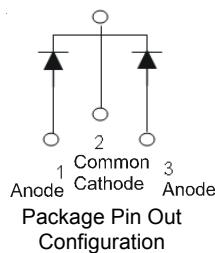
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View



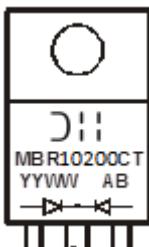
## Ordering Information (Notes 4)

Part Number	Case	Packaging
MBR10200CT-LJ	TO220AB (Type C)	50 pieces/tube
MBRF10200CT-LJ	ITO-220AB (TO220F-3)	50 pieces/tube

Notes:

1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



MBR10200CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year (ex: 13 = 2013)  
WW = Week (01 - 53)



MBRF10200CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year (ex: 13 = 2013)  
WW = Week (01 - 53)

**Maximum Ratings (Per Leg) (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)**

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	200	V
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current (Per Leg) (Total)	$I_O$	5 10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	110	A

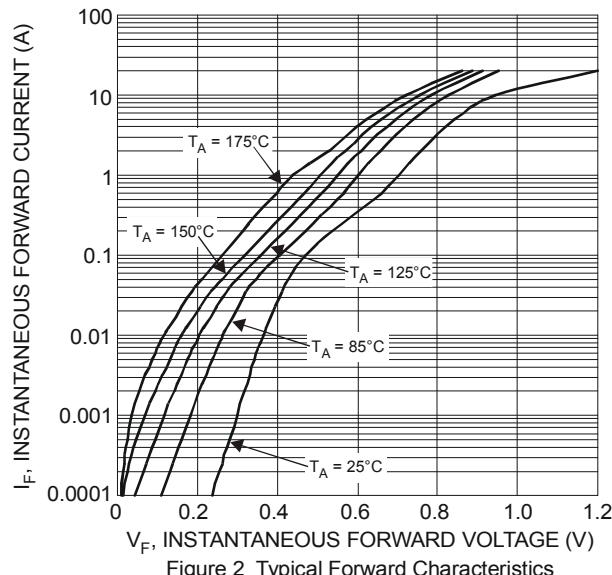
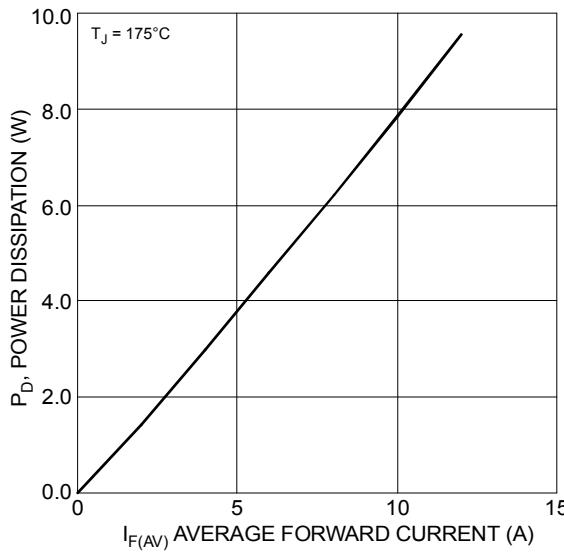
**Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5) Package = TO-220AB Package = ITO-220AB	$R_{\theta JC}$	4 7	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5) Package = TO-220AB Package = ITO-220AB	$R_{\theta JA}$	15 25	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +175	°C

**Electrical Characteristics (Per Leg) (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)**

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	—	0.85 —	0.91 0.75	V	$I_F = 5\text{A}, T_J = +25^\circ\text{C}$ $I_F = 5\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	—	0.1 10	mA	$V_R = 200\text{V}, T_J = +25^\circ\text{C}$ $V_R = 200\text{V}, T_J = +125^\circ\text{C}$

Notes: 5. Device mounted on heat sink (45mm x 20mm x12mm), with minimum recommended pad layout per <http://www.diodes.com>  
 6. Short duration pulse test used to minimize self-heating effect.



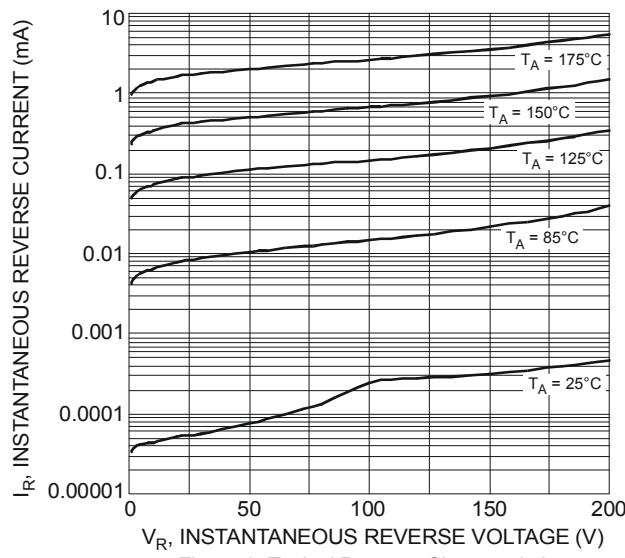


Figure 3 Typical Reverse Characteristics

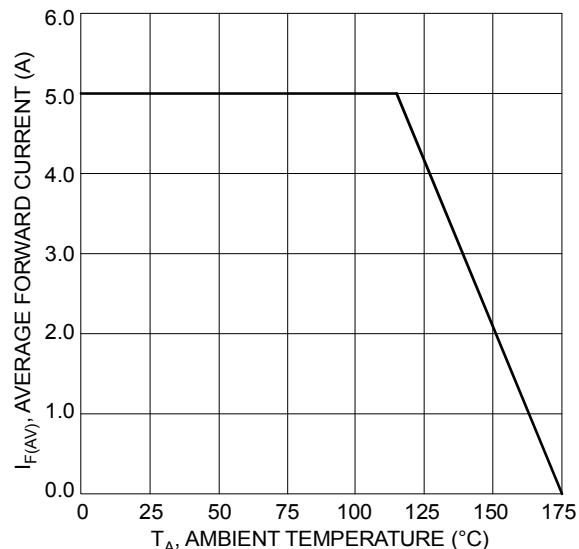
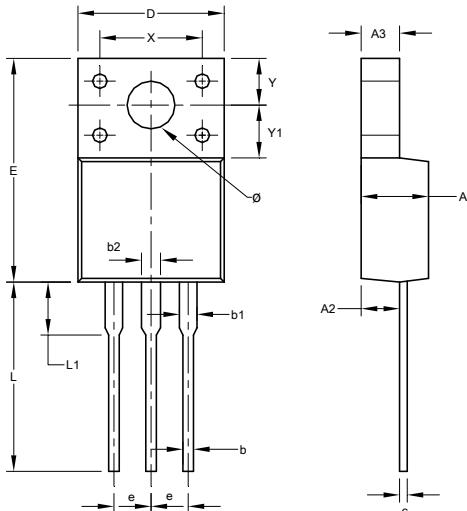


Figure 4 Forward Current Derating Curve

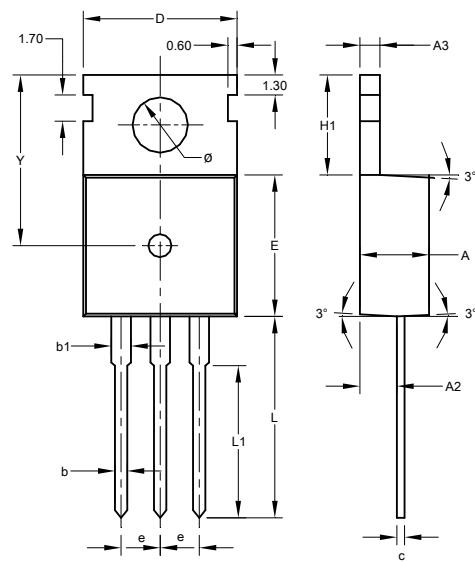
## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



ITO220AB (TO220F-3)			
Dim	Min	Max	Typ
<b>A</b>	4.300	4.900	-
<b>A2</b>	2.520	2.920	-
<b>A3</b>	2.350	2.900	-
<b>b</b>	0.550	0.900	-
<b>b1</b>	1.000	1.400	-
<b>b2</b>	1.100	1.500	-
<b>c</b>	0.450	0.600	-
<b>D</b>	9.70	10.30	-
<b>E</b>	14.70	16.00	-
<b>e</b>	-	-	2.540
<b>L</b>	12.50	13.50	-
<b>L1</b>	2.790	4.500	-
<b>X</b>	6.90	7.10	-
<b>Y</b>	3.000	3.400	-
<b>Y1</b>	3.370	3.900	-
<b>Ø</b>	3.000	3.550	-

All Dimensions in mm



TO220AB Type C			
Dim	Min	Max	Typ
<b>A</b>	-	-	4.500
<b>A2</b>	-	-	2.400
<b>A3</b>	-	-	1.300
<b>b</b>	0.700	0.900	-
<b>b1</b>	-	-	1.270
<b>c</b>	0.400	0.600	-
<b>D</b>	9.800	10.200	-
<b>E</b>	9.000	9.400	-
<b>e</b>	-	-	2.54
<b>H1</b>	6.300	6.700	-
<b>L</b>	12.600	13.600	-
<b>L1</b>	9.600	10.600	-
<b>Y</b>	-	-	11.100
<b>Ø</b>	3.560	3.640	-

All Dimensions in mm

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