

## Product Summary

MBR20200CT / MBRF20200CT (Per Leg)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (MAX) (V) @ +25°C	I <sub>R</sub> (MAX) (mA) @ +25°C
200	10	0.89	0.1

## Description and Applications

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

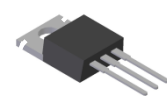
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

## Features and Benefits

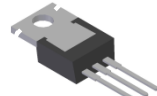
- Guard Ring Die Construction for Transient Protection
- High Surge Current Capability
- Low Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

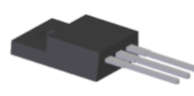
- Case: TO220AB (Type C), ITO220AB (TYPE BR)
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: See Below
- Weight: TO220AB (Type C) – 1.95 grams (Approximate)  
 ITO220AB (TYPE BR) – 1.69 grams (Approximate)



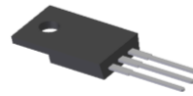
TO220AB (Type C)  
Top View



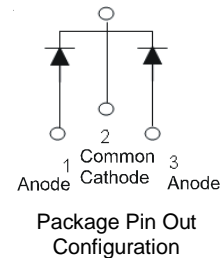
TO220AB (Type C)  
Bottom View



ITO220AB (TYPE BR)  
Top View



ITO220AB (TYPE BR)  
Bottom View

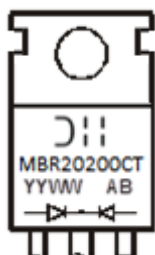


## Ordering Information (Note 4)

Part Number	Case	Packaging
MBR20200CT-LJ	TO220AB (Type C)	50 Pieces/Tube
MBRF20200CT-LJ	ITO220AB (TYPE BR)	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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



MBR20200CT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 17 = 2017)  
 WW = Week (01 to 53)



MBRF20200CT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 17 = 2017)  
 WW = Week (01 to 53)

**Maximum Ratings (Per Leg)** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	200	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current (Per Leg) (Total)	I <sub>O</sub>	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	170	A

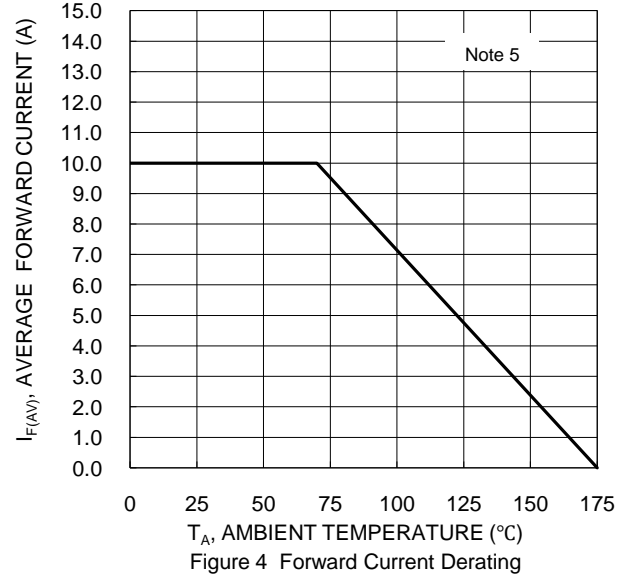
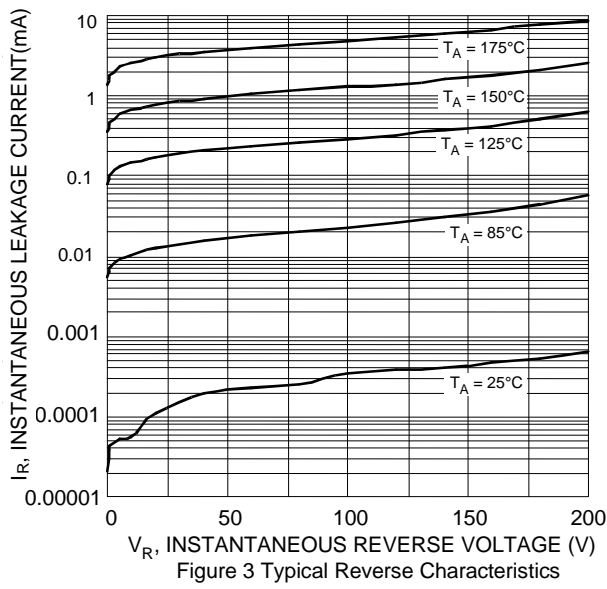
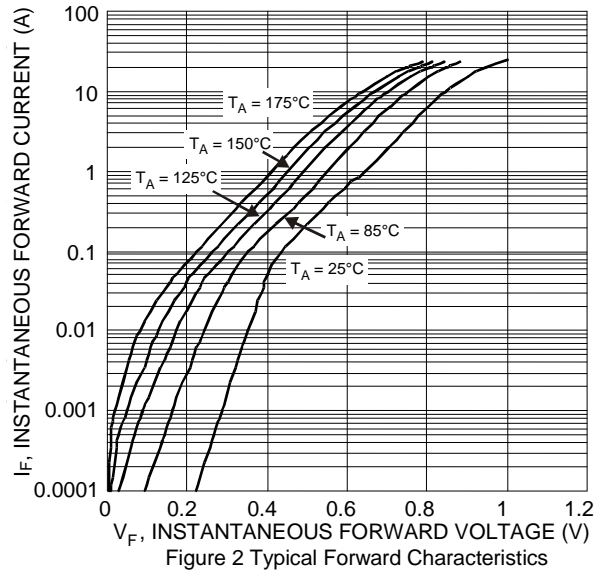
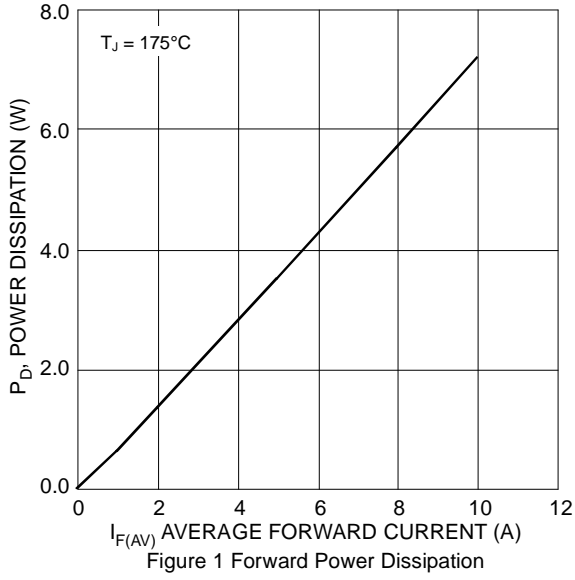
**Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5) Package = TO220AB (Type C) Package = ITO220AB (TYPE BR)	R <sub>θJC</sub>	3 5	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5) Package = TO220AB (Type C) Package = ITO220AB (TYPE BR)	R <sub>θJA</sub>	15 25	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +175	°C

**Electrical Characteristics (Per Leg)** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

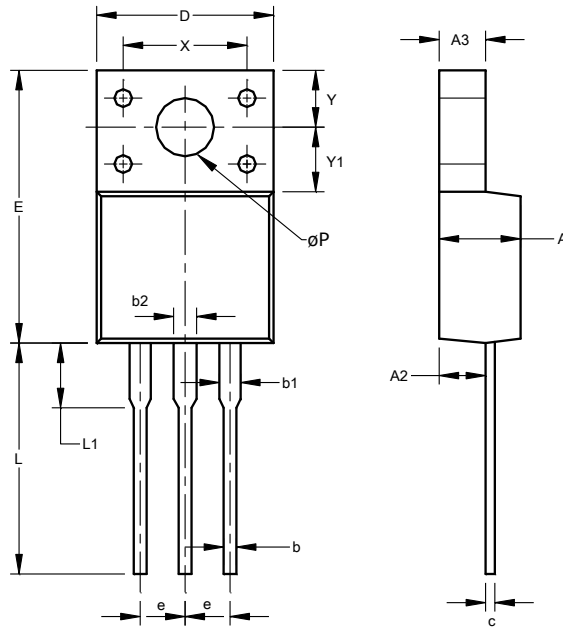
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.85	0.89 0.75	V	I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	—	0.1 10	mA	V <sub>R</sub> = 200V, T <sub>J</sub> = +25°C V <sub>R</sub> = 200V, T <sub>J</sub> = +125°C

Notes: 5. Device mounted on heat sink (45mm x 20mm x 12mm), with minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.  
6. Short duration pulse test used to minimize self-heating effect

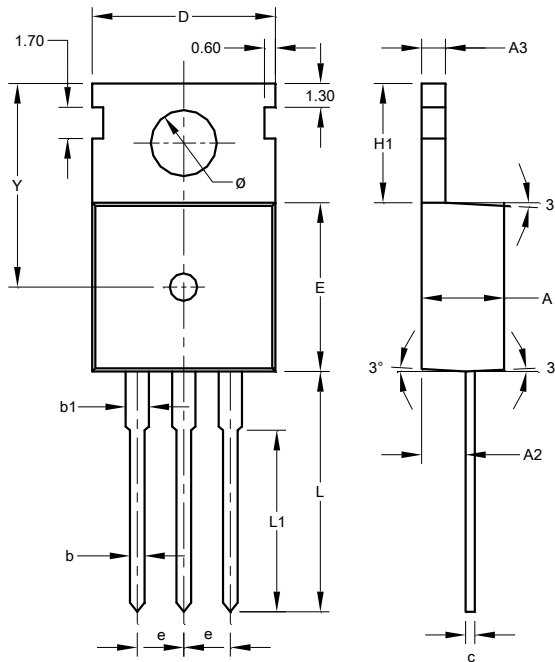


**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



ITO220AB (TYPE BR)			
Dim	Min	Max	Typ
A	4.300	4.900	-
A2	2.520	2.920	-
A3	2.350	2.900	-
b	0.550	0.900	-
b1	1.000	1.400	-
b2	1.100	1.500	-
c	0.450	0.600	-
D	9.70	10.30	-
E	14.70	16.00	-
e	-	-	2.54
L	12.50	13.50	-
L1	2.790	4.500	-
X	6.90	7.10	-
Y	3.000	3.400	-
Y1	3.370	3.900	-
$\phi P$	3.000	3.500	-
All Dimensions in mm			



TO220AB (Type C)			
Dim	Min	Max	Typ
A	4.40	4.60	4.500
A2	2.20	2.50	2.400
A3	1.20	1.40	1.300
b	0.700	0.900	-
b1	1.170	1.390	1.270
c	0.400	0.600	-
D	9.800	10.200	-
E	9.000	9.400	-
e	-	-	2.54
H1	6.300	6.700	-
L	12.600	13.600	-
L1	9.600	10.600	-
Y	-	-	11.100
$\phi$	3.560	3.640	-
All Dimensions in mm			

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