

Product Summary

MBR10100CT / MBRF10100CT (Per Leg)

V_{RRM} (V)	I_o (A)	$V_{F(MAX)}$ (V) @ +25°C	$I_{R(MAX)}$ (mA) @ +25°C
100	5	0.84	0.05

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:

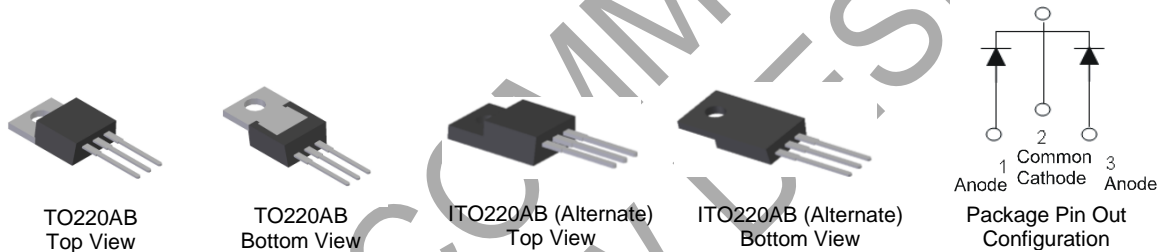
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

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, ITO220AB (Alternate)
- 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 (3)
- Polarity: See Below
- Weight: TO220AB – 1.95 grams (Approximate)
ITO220AB (Alternate) – 1.69 grams (Approximate)

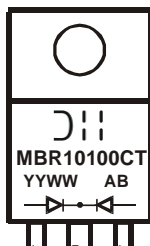


Ordering Information (Notes 4)

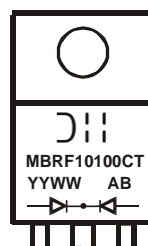
Part Number	Case	Packaging
MBR10100CT	TO220AB	50 Pieces/Tube
MBRF10100CT-JT	ITO220AB (Alternate)	50 Pieces/Tube

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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



MBR10100CT = 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 to 53)



MBRF10100CT = 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 to 53)

Maximum Ratings (Per Leg) (@T_A = +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 _{RRM}	100	V
Working Peak Reverse Voltage	V _{RWM}		
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 = TO220AB Package = ITO220AB (Alternate)	R _{θJC}	4 6	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5) Package = TO220AB Package = ITO220AB (Alternate)	R _{θJA}	16 30	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

Electrical Characteristics (Per Leg) (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	—	0.79	0.84 0.72	V	I _F = 5A, T _A = +25°C I _F = 5A, T _A = +125°C
Leakage Current (Note 6)	I _R	—	—	0.05 10	mA	V _R = 100V, T _A = +25°C V _R = 100V, T _A = +125°C

Notes: 5. Device mounted on heatsink (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.

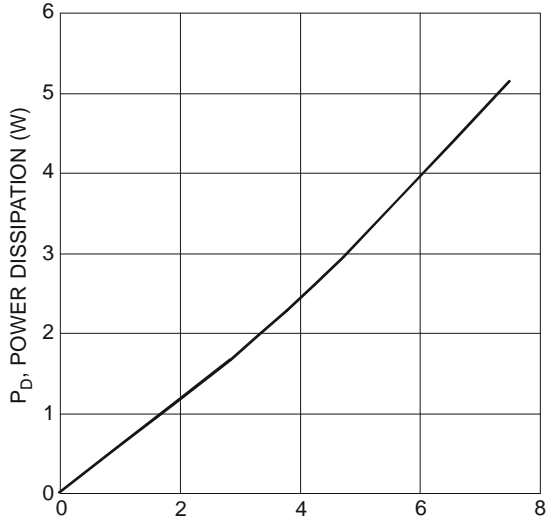


Figure 1 Forward Power Dissipation

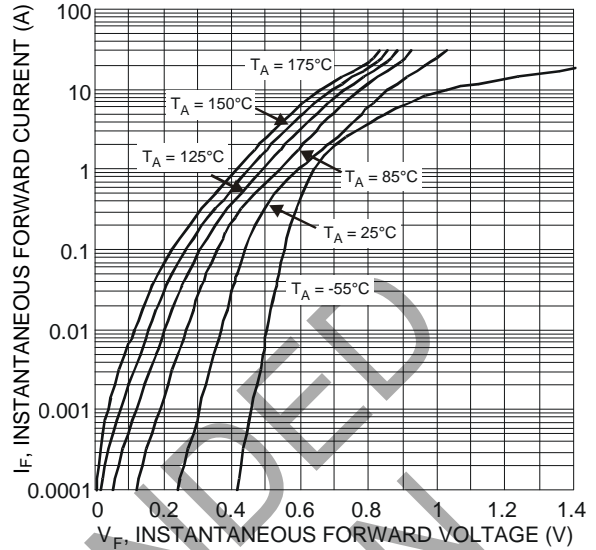


Figure 2 Typical Forward Characteristics

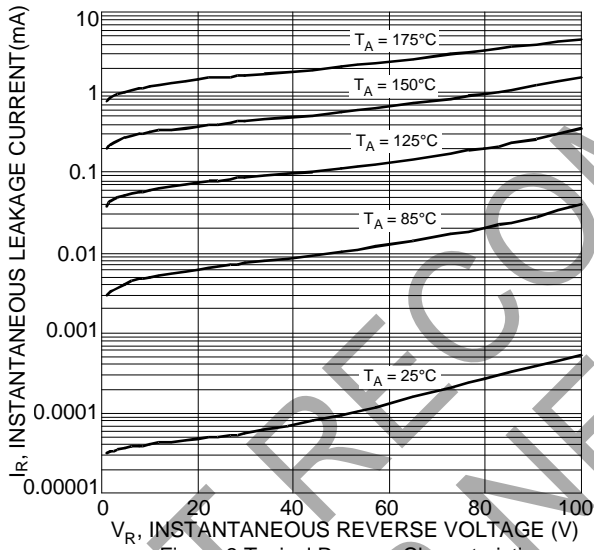


Figure 3 Typical Reverse Characteristics

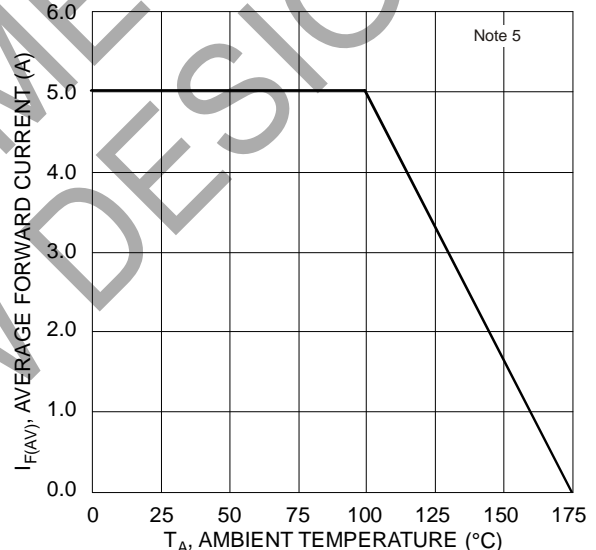
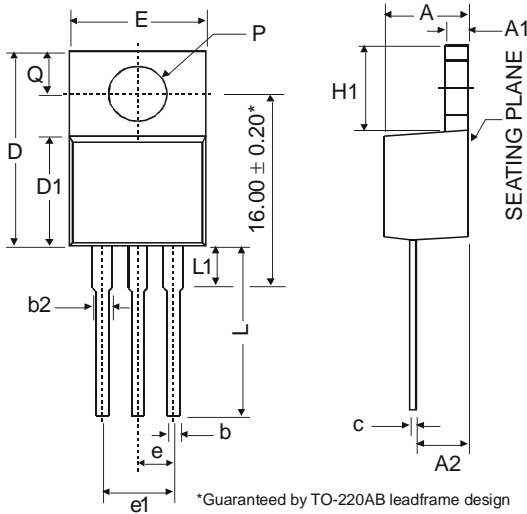


Figure 4 Forward Current Derating Curve

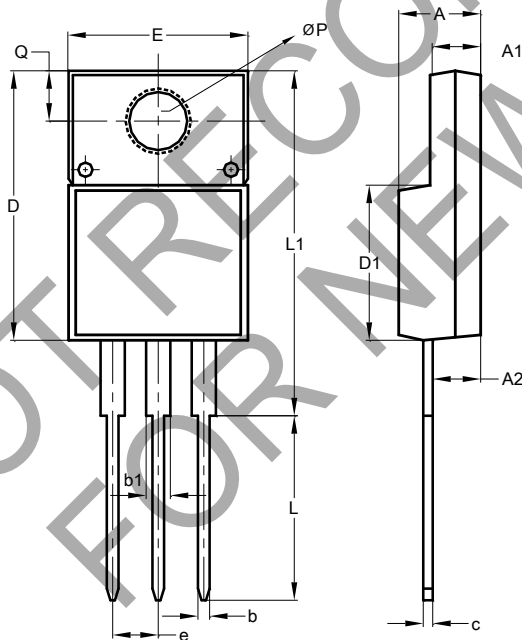
NOT FOR NEW DESIGN

Package Outline Dimensions

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



TO220AB			
Dim	Min	Typ	Max
A	3.56	-	4.82
A1	0.51	-	1.39
A2	2.04	-	2.92
b	0.39	0.81	1.01
b2	1.15	1.24	1.77
c	0.356	-	0.61
D	14.22	-	16.51
D1	8.39	-	9.01
e	2.54		
e1	5.08		
E	9.66	-	10.66
H1	5.85	-	6.85
L	12.70	-	14.73
L1	-	-	6.35
P	3.54	-	4.08
Q	2.54	-	3.42
All Dimensions in mm			



ITO220AB Alternate		
Dim	Min	Max
A	4.36	4.77
A1	2.54	3.10
A2	2.54	2.80
b	0.55	0.75
b1	1.20	1.50
c	0.38	0.68
D	14.50	15.50
D1	8.38	8.89
e	2.41	2.67
E	9.72	10.27
L	9.87	10.67
L1	15.8	17.00
P	3.08	3.39
Q	2.60	3.00
All Dimensions in mm		

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