

Product Summary

MBR10150CT / MBRF10150CT (Per Leg)

V_{RRM} (V)	I_O (A)	V_F (MAX) (V) @ +25°C	I_R (MAX) (mA) @ +25°C
150	5	0.89	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:

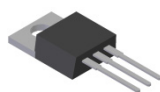
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

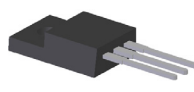
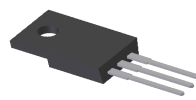
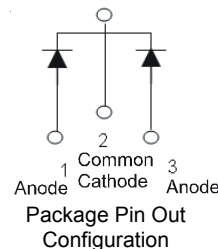
Features and Benefits

- 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: TO-220AB, 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 
- Polarity: See Below
- Weight: TO-220AB – 1.95 grams (approximate)
ITO-220AB – 1.69 grams (approximate)


 TO-220AB
Top View

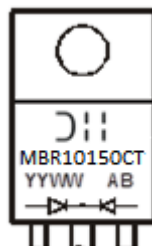
 TO-220AB
Bottom View

 ITO-220AB
Top View

 ITO-220AB
Bottom View


Ordering Information (Note 4)

Part Number	Case	Packaging
MBR10150CT-LJ	TO-220AB (Type C)	50 pieces/tube
MBRF10150CT-LJ	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 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



MBR10150CT = 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)



MBRF10150CT = 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°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}	150	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}	100	A

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5) Package = TO-220AB Package = ITO-220AB	R _{θJC}	4 7	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5) Package = TO-220AB Package = ITO-220AB	R _{θJA}	15 25	°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	—	0.83	0.89 0.81	V	I _F = 5A, T _J = +25°C I _F = 5A, T _J = +125°C
Leakage Current (Note 6)	I _R	—	—	0.05 10	mA	V _R = 150V, T _J = +25°C V _R = 150V, T _J = +125°C

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

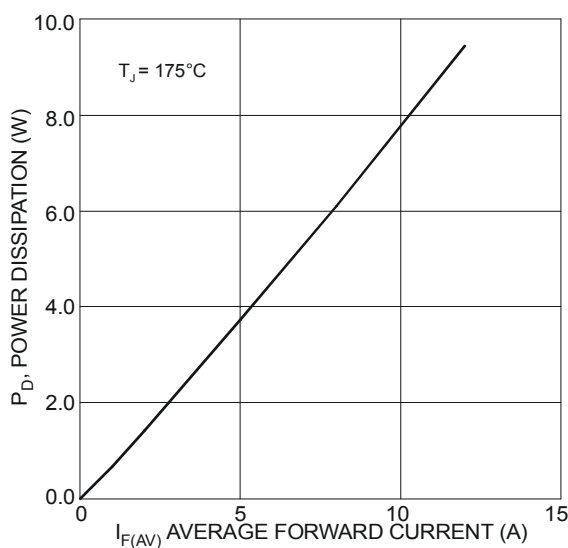


Figure 1 Forward Power Dissipation

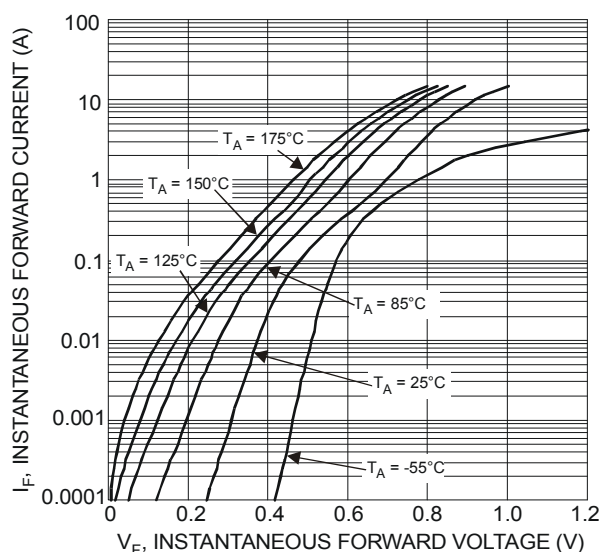


Figure 2 Typical Forward Characteristics

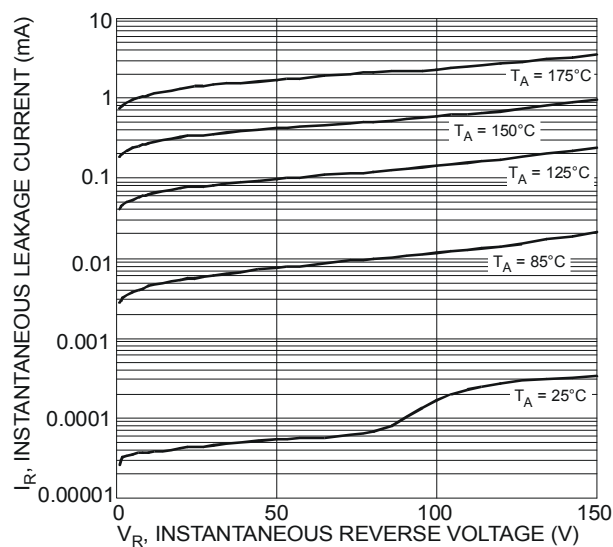


Figure 3 Typical Reverse Characteristics

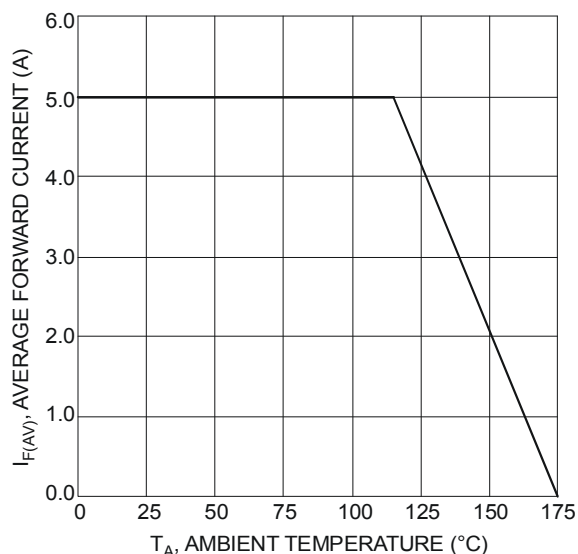
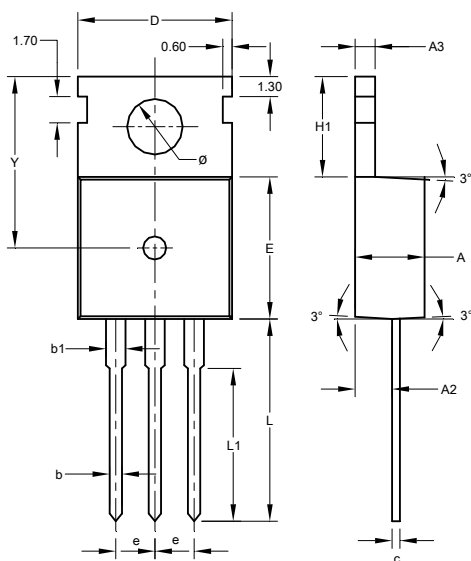


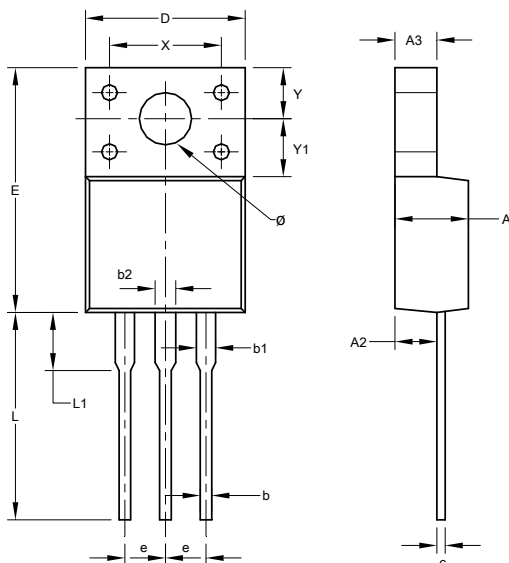
Figure 4 Forward Current Derating Curve

Package Outline Dimensions

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



TO220AB Type C			
Dim	Min	Max	Typ
A	-	-	4.50
A2	-	-	2.40
A3	-	-	1.30
b	0.70	0.90	-
b1	-	-	1.27
c	0.40	0.60	-
D	9.80	10.20	-
E	9.00	9.40	-
e	-	-	2.54
H1	6.30	6.70	-
L	12.60	13.60	-
L1	9.60	10.60	-
Y	-	-	11.10
Ø	3.56	3.64	-
All Dimensions in mm			



ITO220AB(TO220F-3)			
Dim	Min	Max	Typ
A	4.30	4.90	-
A2	2.52	2.92	-
A3	2.35	2.90	-
b	0.55	0.90	-
b1	1.00	1.40	-
b2	1.10	1.50	-
c	0.45	0.60	-
D	9.70	10.30	-
E	14.70	16.00	-
e	-	-	2.54
L	12.50	13.50	-
L1	2.79	4.50	-
X	6.90	7.10	-
Y	3.00	3.40	-
Y1	3.37	3.90	-
Ø	3.00	3.55	-
All Dimensions in mm			

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