



**THE DATASHEET OF
MBR10150CT-LJ**



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 is designed to meet the general requirements of commercial applications. It is ideally suited for use as a:

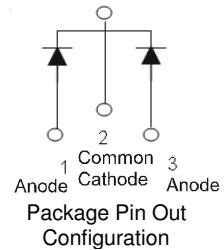
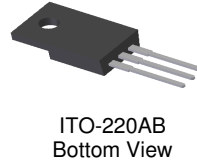
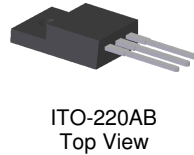
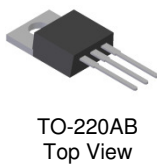
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

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 208^③
- Polarity: See Below
- Weight: TO-220AB – 1.95 grams (Approximate)
ITO-220AB – 1.69 grams (Approximate)



Ordering Information (Note 4)

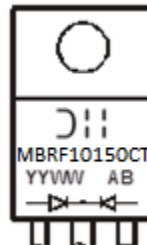
| Part Number | Case | Packaging |
|----------------|----------------------|----------------|
| MBR10150CT-LJ | TO-220AB (Type C) | 50 pieces/tube |
| MBRF10150CT-LJ | ITO-220AB (TO220F-3) | 50 pieces/tube |

- 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 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: 15 = 2015)
 WW = Week (01 - 53)



MBRF10150CT = Product Type Marking Code
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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} | 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 |

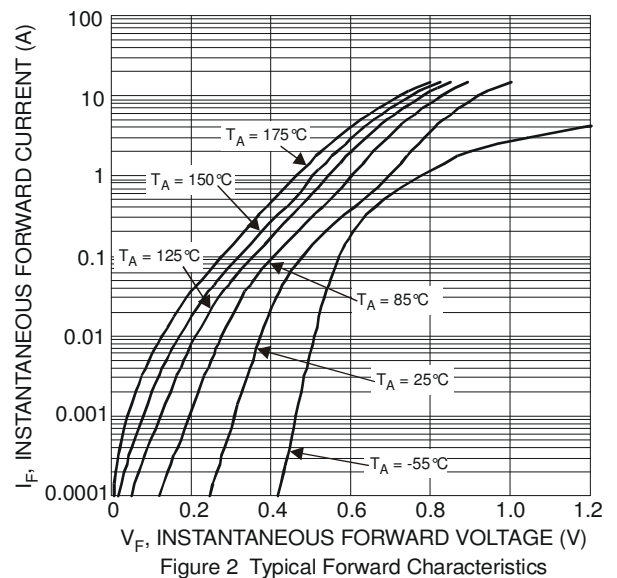
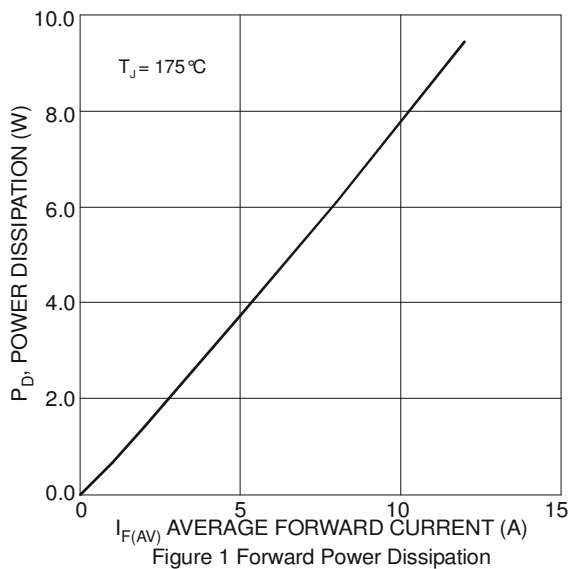
Thermal Characteristics (Per Leg)

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

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 | — | 0.83 | 0.89 0.81 | 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 | — | — | 0.05 10 | mA | $V_R = 150\text{V}, T_J = +25^\circ\text{C}$ $V_R = 150\text{V}, T_J = +125^\circ\text{C}$ |

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.



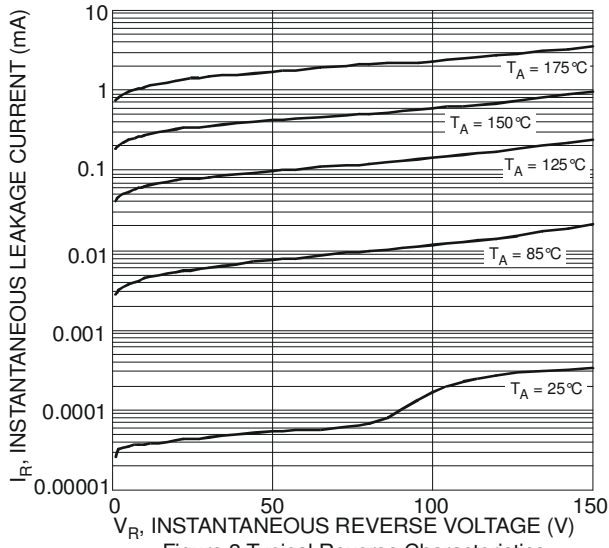


Figure 3 Typical Reverse Characteristics

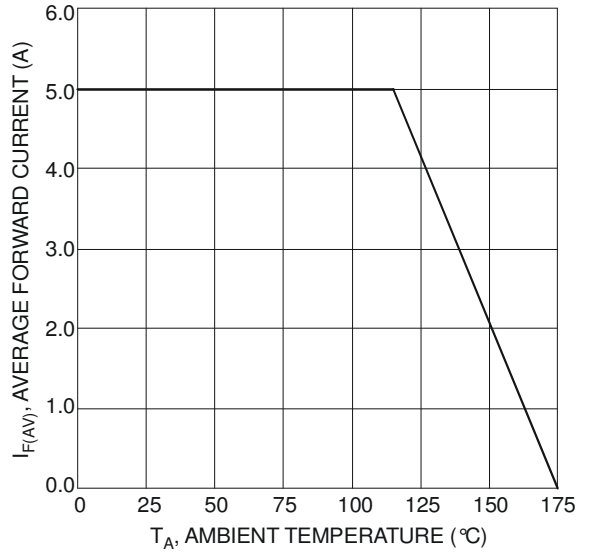
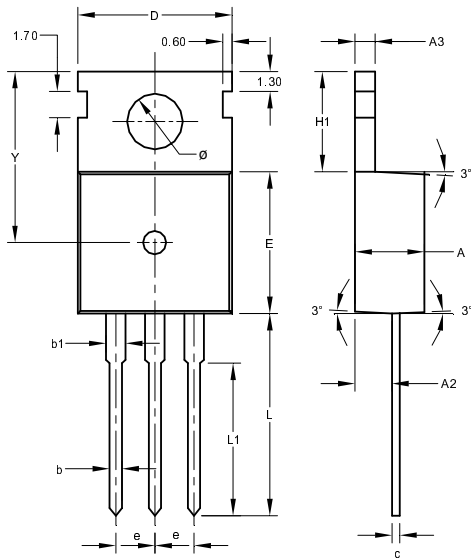


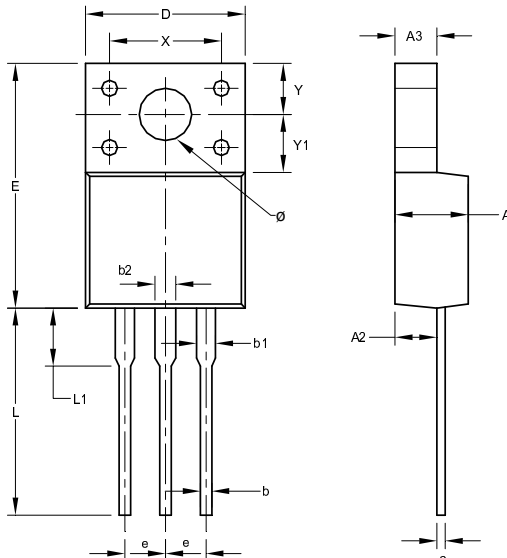
Figure 4 Forward Current Derating Curve

Package Outline Dimensions

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



| 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 |
| \varnothing | 3.560 | 3.640 | - |
| 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 | - |
| \varnothing | 3.00 | 3.55 | - |
| All Dimensions in mm | | | |

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