

Product Summary

MBRB10150CT (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 |

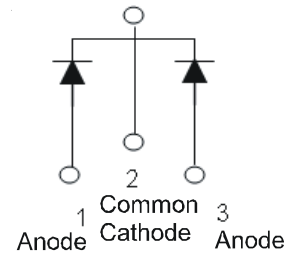
Description

This Schottky Barrier Rectifier is designed to meet the stringent requirements of Commercial Applications.

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



TO263AB



Package Pin Out

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

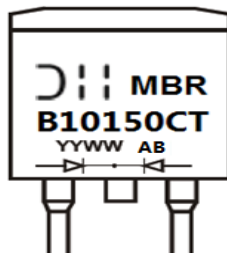
- Case: TO263AB (D2PAK)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208
- Polarity: See Below
- Weight: TO263AB — 1.6 grams (Approximate)

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|----------------|-----------------|-----------------|
| MBRB10150CT | TO263AB (D2PAK) | 50 pieces/tube |
| MBRB10150CT-13 | TO263AB (D2PAK) | 800 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



MBRB10150CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 14 = 2014)
 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 |

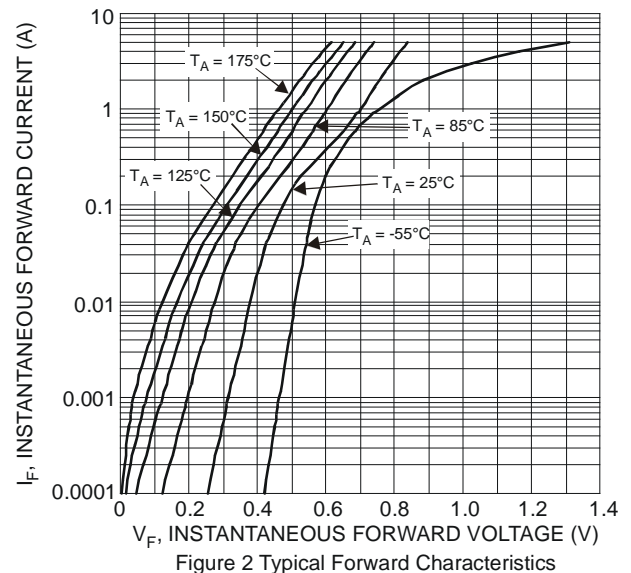
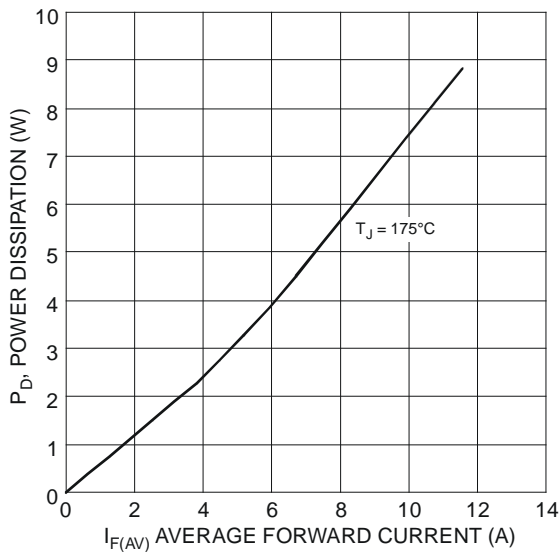
Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Case (Note 5) | R _{θJC} | 5 | °C/W |
| Typical Thermal Resistance, Junction to Ambient (Note 5) | R _{θJA} | 20 | °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 | V | I _F = 5A, T _J = +25°C I _F = 5A, T _J = +125°C |
| Leakage Current (Note 6) | I _R | — | — | 0.05 | mA | V _R = 150V, T _J = +25°C V _R = 150V, T _J = +125°C |

Notes: 5. Test with 2 inch Al board.
6. Short duration pulse test used to minimize self-heating effect.



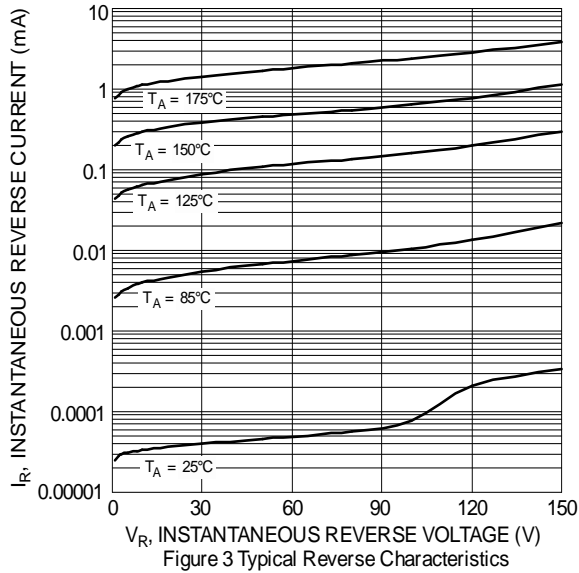


Figure 3 Typical Reverse Characteristics

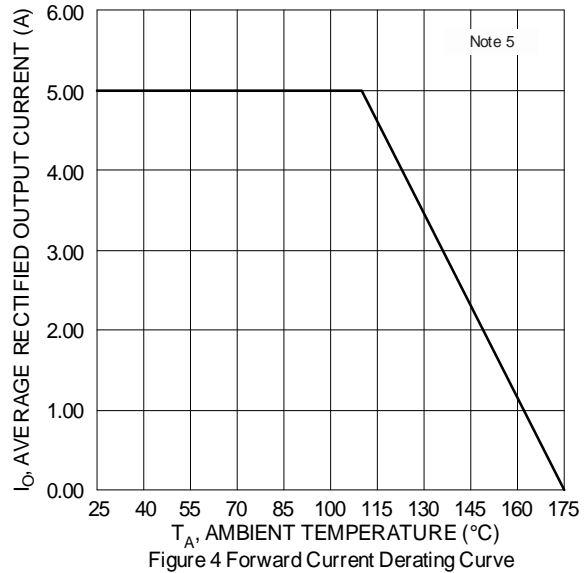
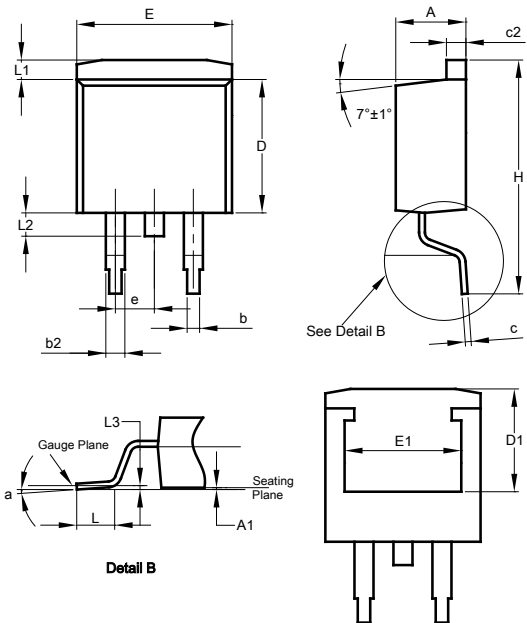


Figure 4 Forward Current Derating Curve

Package Outline Dimensions

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

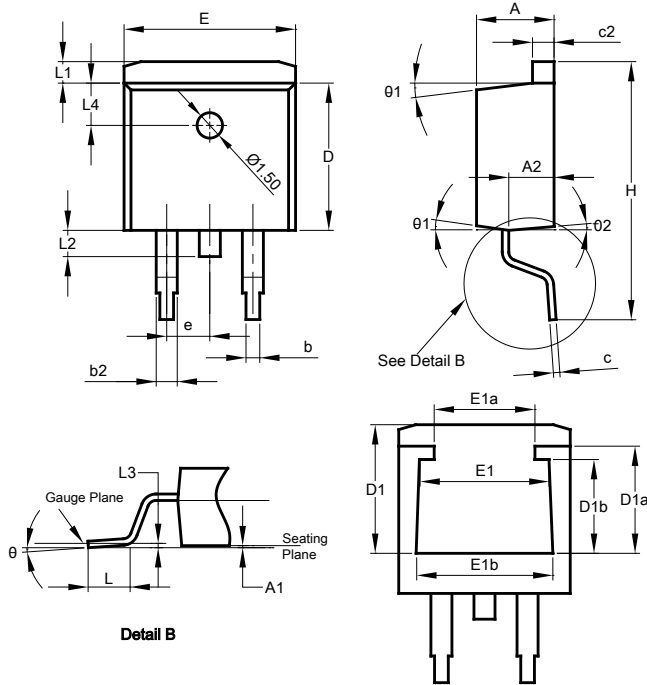


| TO263AB (D2PAK) | | | |
|----------------------|----------|-------|-----|
| Dim | Min | Max | Typ |
| A | 4.07 | 4.82 | - |
| A1 | 0.00 | 0.25 | - |
| b | 0.51 | 0.99 | - |
| b2 | 1.15 | 1.77 | - |
| c | 0.356 | 0.73 | - |
| c2 | 1.143 | 1.65 | - |
| D | 8.39 | 9.65 | - |
| D1 | 6.55 | - | - |
| e | 2.54 TYP | | |
| E | 9.66 | 10.66 | - |
| E1 | 6.23 | - | - |
| H | 14.61 | 15.87 | - |
| L | 1.78 | 2.79 | - |
| L1 | - | 1.67 | - |
| L2 | - | 1.77 | - |
| a | 0° | 8° | - |
| All Dimensions in mm | | | |

Package Outline Dimensions (cont.)

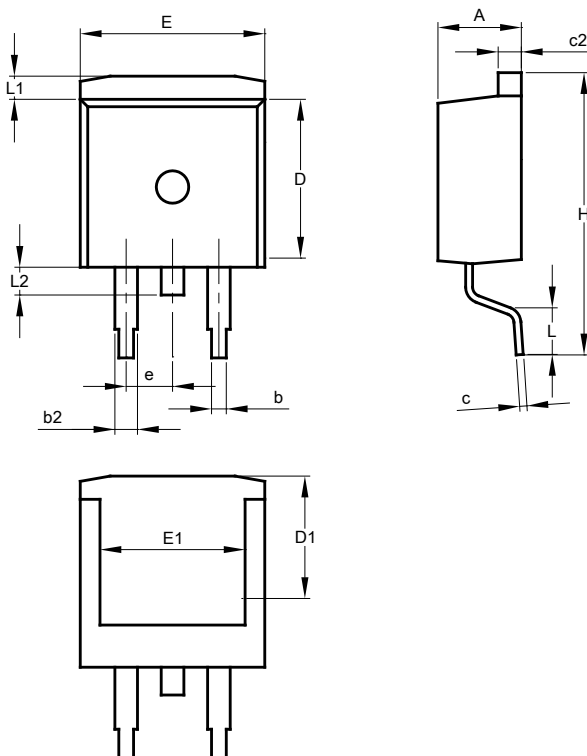
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

**TO263AB (D2PAK)
(Type B)**



| TO263AB (D2PAK) (Type B) | | | |
|-----------------------------|----------|-------|-------|
| Dim | Min | Max | Typ |
| A | 4.40 | 4.70 | 4.57 |
| A1 | 0.00 | 0.20 | 0.10 |
| A2 | 2.59 | 2.79 | 2.69 |
| b | 0.77 | 0.90 | 0.813 |
| b2 | 1.20 | 1.36 | 1.27 |
| c | 0.356 | 0.47 | 0.381 |
| c2 | 1.22 | 1.32 | 1.27 |
| D | 8.60 | 8.80 | 8.70 |
| D1 | 6.60 | 7.80 | 7.60 |
| D1a | 5.33 | 6.53 | 6.33 |
| D1b | 4.54 | 5.74 | 5.54 |
| e | 2.54 BSC | | |
| E | 10.00 | 10.20 | 10.10 |
| E1 | 6.67 | 7.87 | 7.67 |
| E1a | 4.94 | 6.14 | 5.94 |
| E1b | 7.06 | 8.26 | 8.06 |
| H | 14.70 | 15.50 | 15.10 |
| L | 2.00 | 2.60 | 2.30 |
| L1 | 1.17 | 1.40 | 1.27 |
| L2 | 1.45 | 1.70 | 1.55 |
| L3 | 0.25 BSC | | |
| L4 | 2.50 REF | | |
| θ | 0° | 8° | 5° |
| θ1 | 5° | 9° | 7° |
| θ2 | 1° | 5° | 3° |
| All Dimensions in mm | | | |

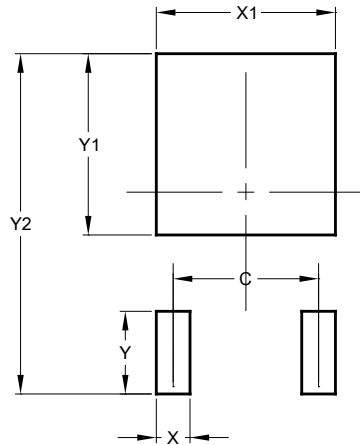
**TO263AB (D2PAK)
(Type C)**



| TO263AB (D2PAK) Type C | | | |
|---------------------------|-------|-------|-----|
| Dim | Min | Max | Typ |
| A | 4.30 | 4.70 | - |
| b | 0.70 | 0.90 | - |
| b2 | 1.15 | 1.35 | - |
| c | 0.40 | 0.60 | - |
| c2 | 1.20 | 1.40 | - |
| D | 9.00 | 9.40 | - |
| D1 | 7.96 | 8.36 | - |
| E | 9.80 | 10.20 | - |
| E1 | 7.85 | 8.05 | - |
| e | 2.34 | 2.74 | - |
| H | 15.00 | 15.87 | - |
| L | 2.24 | 2.84 | - |
| L1 | 1.00 | 1.40 | - |
| L2 | 1.20 | 1.60 | - |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| C | 4.572 |
| X | 1.060 |
| X1 | 5.632 |
| Y | 2.600 |
| Y1 | 5.700 |
| Y2 | 10.700 |

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