

## Product Summary

MBRB10150CT (Per Leg)

| $V_{RRM}$ (V) | $I_o$ (A) | $V_F$ (MAX) (V)<br>@ +25°C | $I_R$ (MAX) (mA)<br>@ +25°C |
|---------------|-----------|----------------------------|-----------------------------|
| 150           | 5         | 0.89                       | 0.05                        |

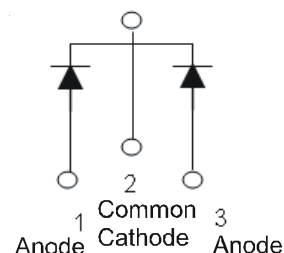
## Description

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

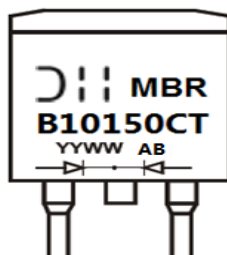
- Case: TO263AB (D2PAK)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: See Below
- 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](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<sub>A</sub> = +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 <sub>RRM</sub> | 150     | V    |
| Working Peak Reverse Voltage                                                                        | V <sub>RWM</sub> |         |      |
| DC Blocking Voltage                                                                                 | V <sub>RM</sub>  |         |      |
| Average Rectified Output Current (Per Leg)<br>(Total)                                               | I <sub>O</sub>   | 5<br>10 | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 100     | A    |

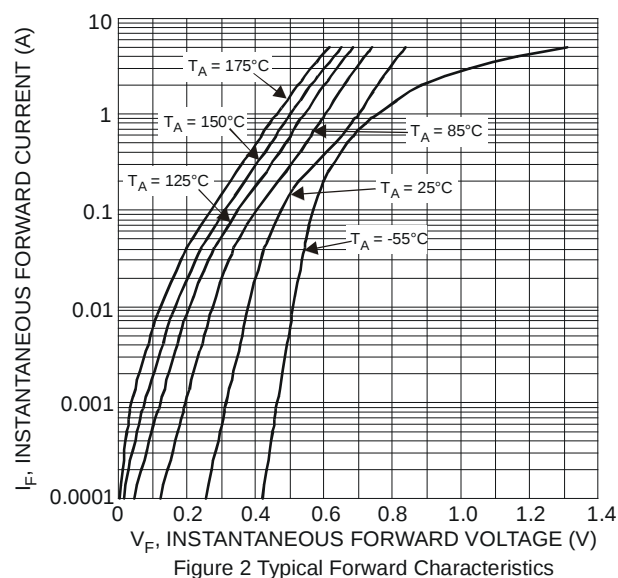
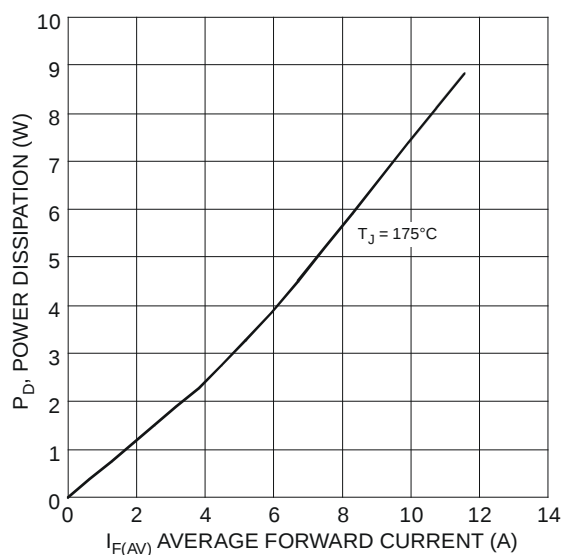
**Thermal Characteristics (Per Leg)**

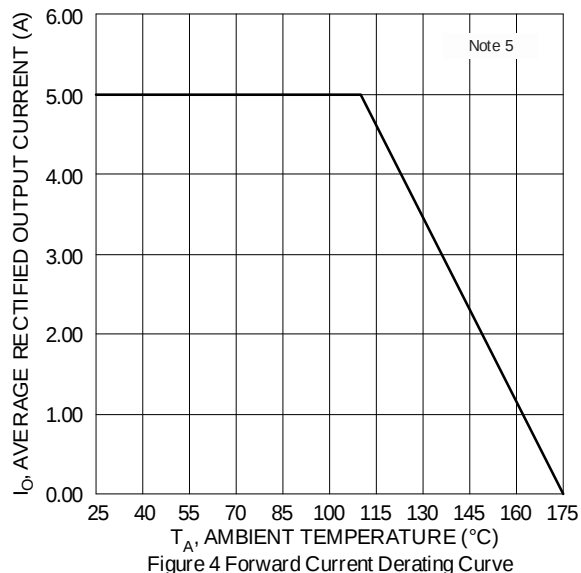
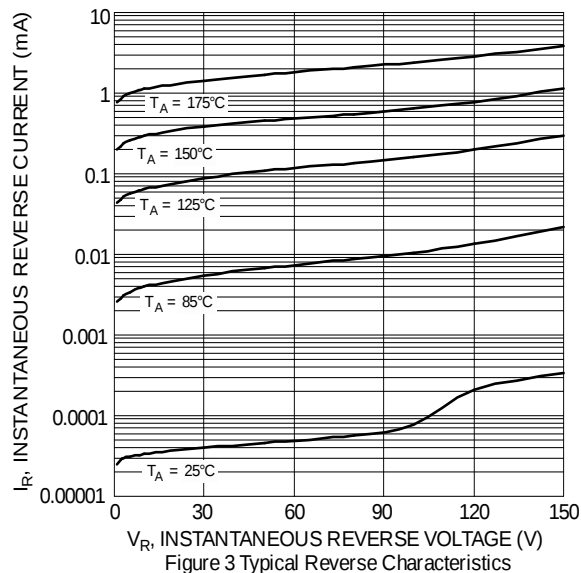
| Characteristic                                           | Symbol                            | Value       | Unit |
|----------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Case (Note 5)    | R <sub>θJC</sub>                  | 5           | °C/W |
| Typical Thermal Resistance, Junction to Ambient (Note 5) | R <sub>θJA</sub>                  | 20          | °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> | —   | 0.83 | 0.89<br>0.81 | V    | I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C<br>I <sub>F</sub> = 5A, T <sub>J</sub> = +125°C     |
| Leakage Current (Note 6) | I <sub>R</sub> | —   | —    | 0.05<br>10   | mA   | V <sub>R</sub> = 150V, T <sub>J</sub> = +25°C<br>V <sub>R</sub> = 150V, T <sub>J</sub> = +125°C |

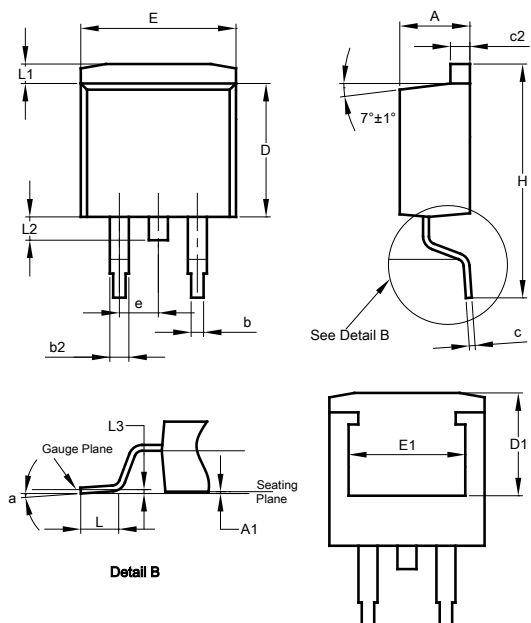
Notes: 5. Test with 2 inch Al board.  
 6. Short duration pulse test used to minimize self-heating effect.





## Package Outline Dimensions

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

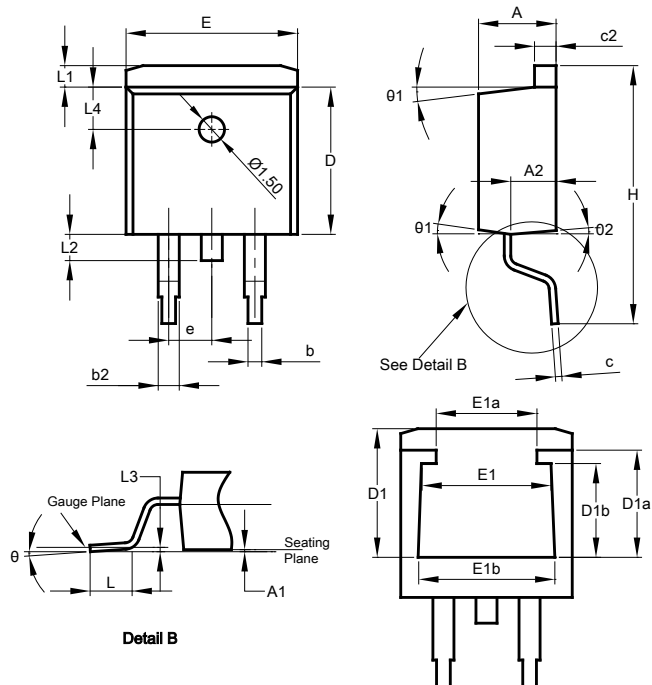


| TO263AB (D2PAK)      |          |       |     |
|----------------------|----------|-------|-----|
| Dim                  | Min      | Max   | Typ |
| A                    | 4.07     | 4.82  | -   |
| A1                   | 0.00     | 0.25  | -   |
| b                    | 0.51     | 0.99  | -   |
| 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.)

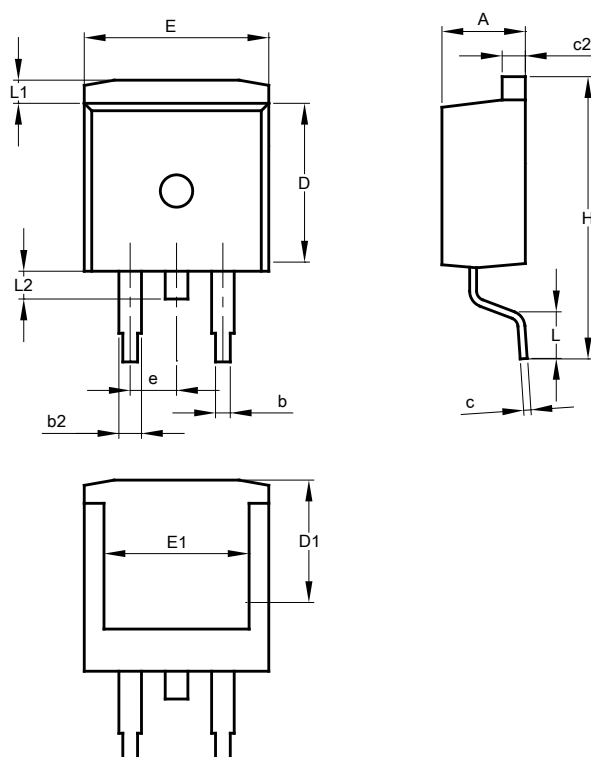
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

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



| TO263AB (D2PAK)<br>(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        |          |       |       |

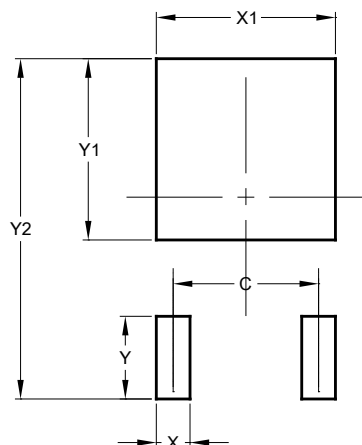
**TO263AB (D2PAK)  
(Type C)**



| TO263AB (D2PAK)<br>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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