

## Product Summary

MBRB10200CT (Per Leg)

$V_{RRM}$ (V)	$I_o$ (A)	$V_F$ (MAX) (V) @ +25°C	$I_R$ (MAX) (mA) @ +25°C
200	5	0.91	0.1

## Description and Applications

This Schottky Barrier Rectifier is designed to meet the general requirements of Commercial Applications. It is ideally suited for use as:

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



TO263AB (D2PAK)

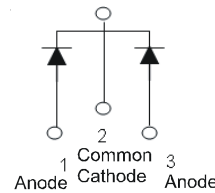
Top View

## 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<sup>③</sup>
- Polarity: See Below
- Weight: TO263AB (D2PAK) – 1.6 grams (Approximate)



Package Pin Out

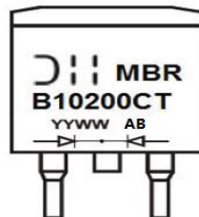
Configuration

## Ordering Information (Note 4)

Part Number	Case	Packaging
MBRB10200CT	TO263AB (D2PAK)	50 pieces/Tube
MBRB10200CT-13	TO263AB (D2PAK)	800 pieces/Reel

- 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



MBRB10200CT = 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)** (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$	200	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)	$R_{\theta JC}$	5	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	20	$^\circ\text{C/W}$
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	$V_F$	—	0.85	0.91	V	$I_F = 5\text{A}, T_J = +25^\circ\text{C}$
		—	—	0.84		$I_F = 5\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	—	0.1	mA	$V_R = 200\text{V}, T_J = +25^\circ\text{C}$
		—	—	10		$V_R = 200\text{V}, T_J = +125^\circ\text{C}$

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

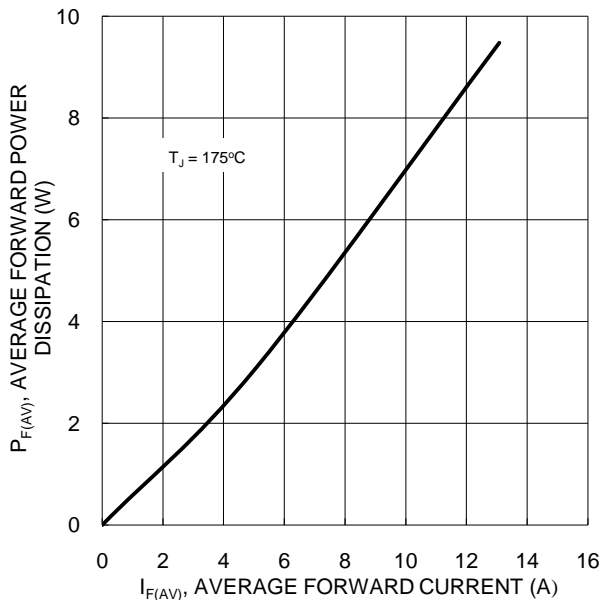


Figure 1 Forward Power Dissipation

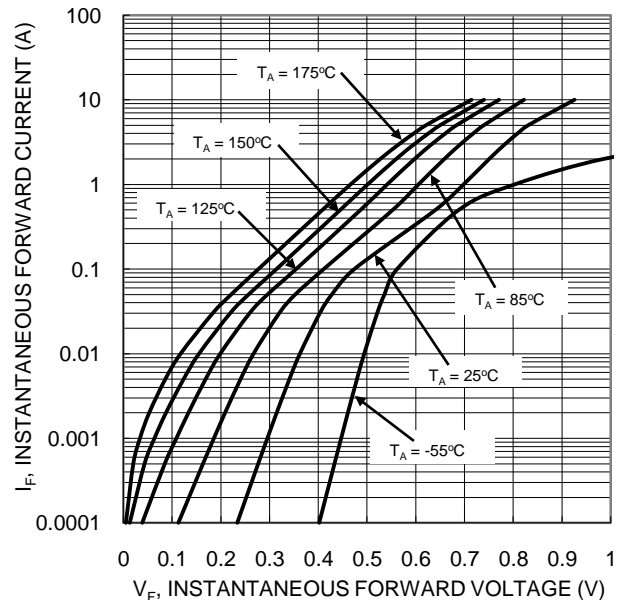


Figure 2 Typical Forward Characteristics

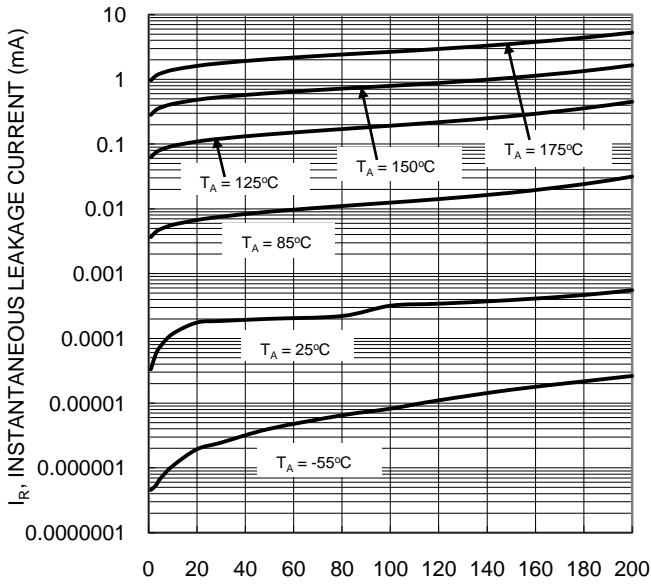


Figure 3 Typical Reverse Characteristics

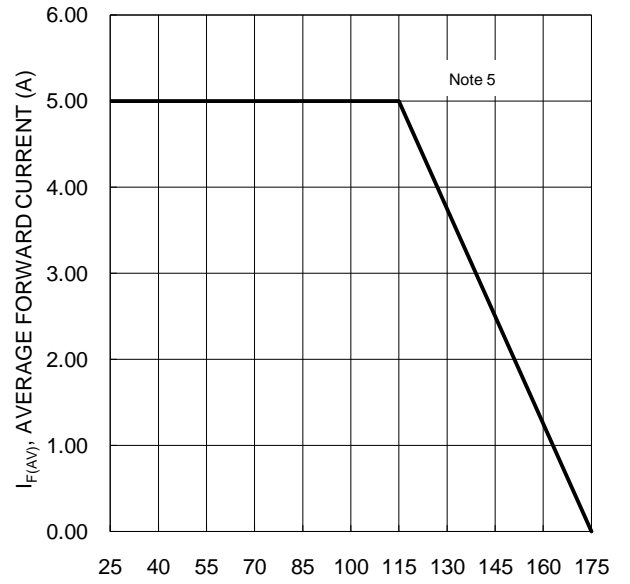
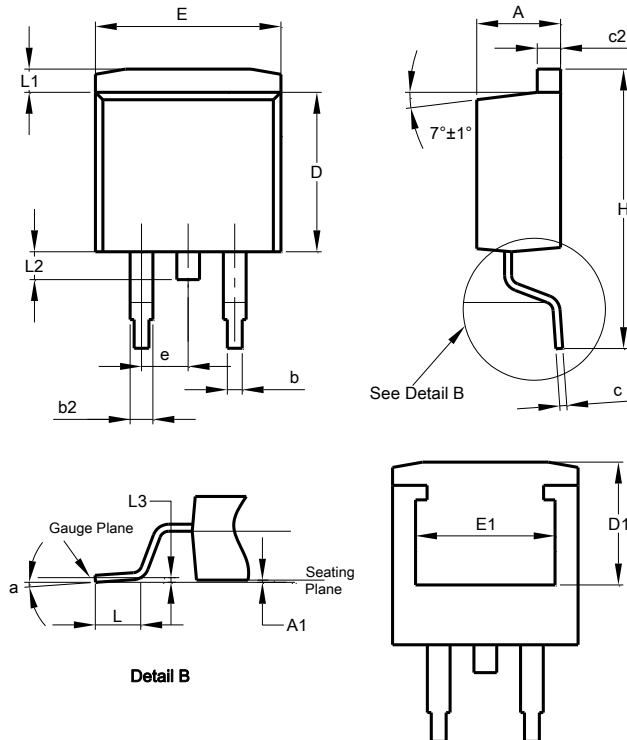


Figure 4 Forward Current Derating Curve

## Package Outline Dimensions

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

### (1) Package Type: TO263AB (D2PAK)

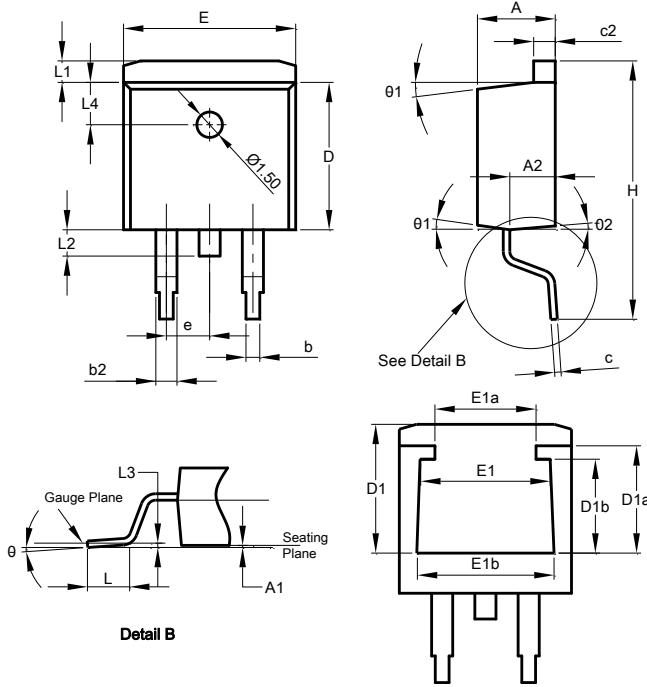


TO263AB (D2PAK)			
Dim	Min	Max	Typ
A	4.07	4.82	-
A1	0.00	0.25	-
b	0.51	0.99	-
b2	1.15	1.77	-
c	0.356	0.73	-
c2	1.143	1.65	-
D	8.39	9.65	-
D1	6.55	-	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	-	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
a	0°	8°	-
All Dimensions in mm			

**Package Outline Dimensions (cont.)**

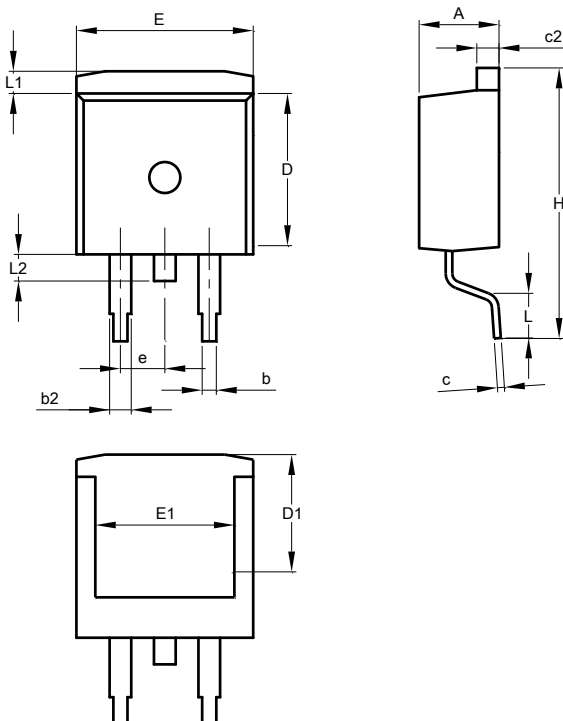
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

**(2) Package Type: 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			

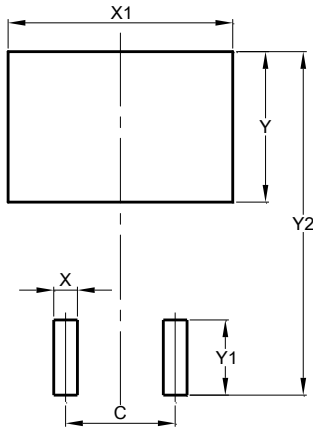
**(3) Package Type: TO263AB (D2PAK) (Type C)**



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	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

NEW PRODUCT

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