



### 20A SCHOTTKY BARRIER RECTIFIER

### **Product Summary**

MBRB20100CT (Per Leg)					
V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F (MAX)</sub> (V) @ +25°C	I <sub>R (MAX)</sub> (mA) @ +25°C		
100	10	0.84	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

EW PRODUCT



TO-263AB

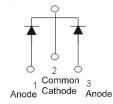
Top View

### **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 (3)
- Polarity: See Below
- Weight: TO263AB(D2PAK) 1.6 grams (Approximate)



Package Pin Out

Configuration

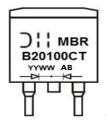
## Ordering Information (Note 4)

Part Number	Case	Packaging
MBRB20100CT	TO263AB (D2PAK)	50 pieces/Tube
MBRB20100CT-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 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**



MBRB20100CT = 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.

Characteristic		Symbol	Value	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RRM</sub> V <sub>RWM</sub> 100 V <sub>RM</sub>		V	
Average Rectified Output Current	(Per Leg) (Total)	lo	10 20	A	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		IFSM	150	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>0JA</sub>	20	°C/W
Operating and Storage Temperature Range	TJ, T <sub>STG</sub>	-55 to +175	°C

# Electrical Characteristics (Per Leg) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

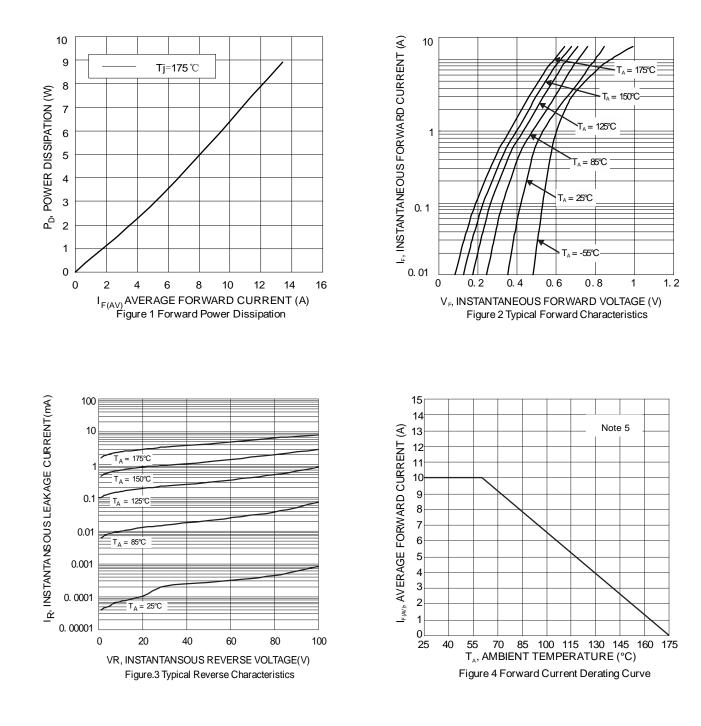
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>		0.79	0.84 0.72	V	$I_F = 10A, T_J = +25^{\circ}C$ $I_F = 10A, T_J = +125^{\circ}C$
Leakage Current (Note 6)	I <sub>R</sub>			0.1 10	ma	$V_R = 100V, T_J = +25^{\circ}C$ $V_R = 100V, T_J = +125^{\circ}C$

Notes: 5. Test with 2inch Al board.

6. Short duration pulse test used to minimize self-heating effect.



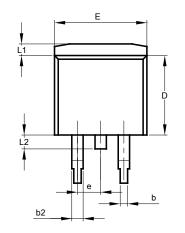
NEW PRODUCT

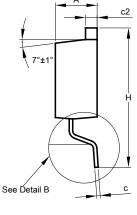


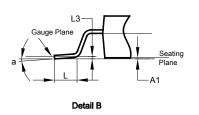


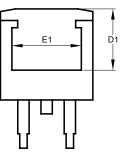
# **Package Outline Dimensions**

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

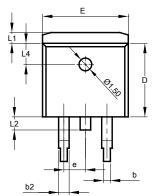






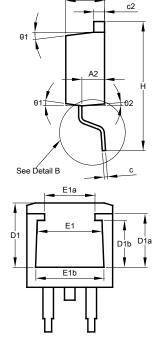


TO263AB (D2PAK)					
Dim	Min	Max	Тур		
Α	4.07	4.82	-		
A1	0.00	0.25	-		
b	0.51	0.99	-		
b2	1.15	1.77	-		
С	0.356	0.73	-		
c2	1.143	1.65	-		
D	8.39	9.65	-		
D1	6.55	1	-		
е	2.54 TYP				
E	9.66	10.66	-		
E1	6.23	-	-		
Н	14.61	15.87	-		
L	1.78	2.79	-		
L1	-	1.67	-		
L2	-	1.77	-		
а	0°	8°	-		
All Dimensions in mm					



Seating Plane

A1



TO263AB (D2PAK) (Type B)					
Dim	Min				
Α	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		
С	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				
е	2	.54 BS	С С		
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		
Н	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 D	All Dimensions in mm				

NEW PRODUCT

L3

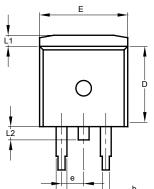
Detail B

e

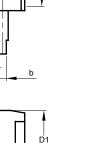


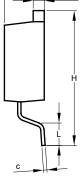
## Package Outline Dimensions (cont.)

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



E1





c2

DIM	win	wax	тур		
Α	4.30	4.70	-		
b	0.70	0.90	-		
b2	1.15	1.35	-		
С	0.40	0.60	-		
c2	1.20	1.40	-		
D	9.00	9.40	-		
D1	7.96	8.36	-		
Е	9.80	10.20	-		
E1	7.85	8.05	-		
е	2.34	2.74			
Н	15.00	15.87	-		
L	2.24	2.84	-		
L1	1.00	1.40	-		
L2	1.20	1.60	-		
All Di	All Dimensions in mm				

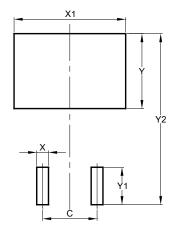
TO263AB (D2PAK)

Type C

# Suggested Pad Layout

b2

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



Dimensions	Value (in mm)
С	5.08
Х	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99



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