

Product Summary

MBRB20100CT (Per Leg)

V _{RRM} (V)	I _O (A)	V _F (Max) (V) @ +25°C	I _R (Max) (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 diodes
- Re-circulating diodes
- Switching diodes



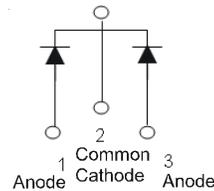
TO263AB (D2PAK)
Top View

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)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: TO263AB
- Package 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: 1.6 grams (Approximate)



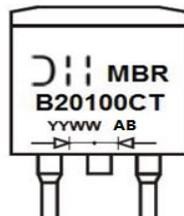
Package Pin Out
Configuration

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
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) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



MBRB20100CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 23 = 2023)
 WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_{RM}		
Average Rectified Output Current (Per Leg) (Total)	I_o	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	150	A

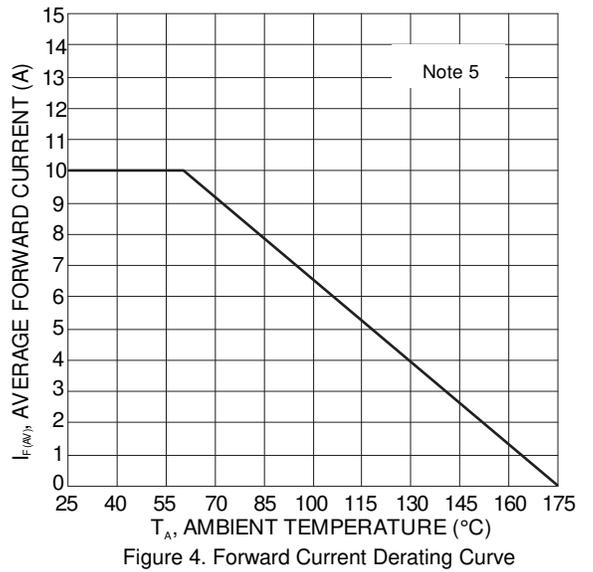
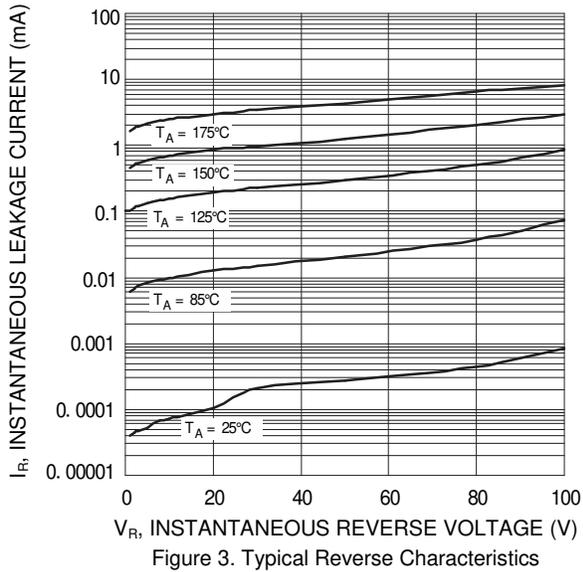
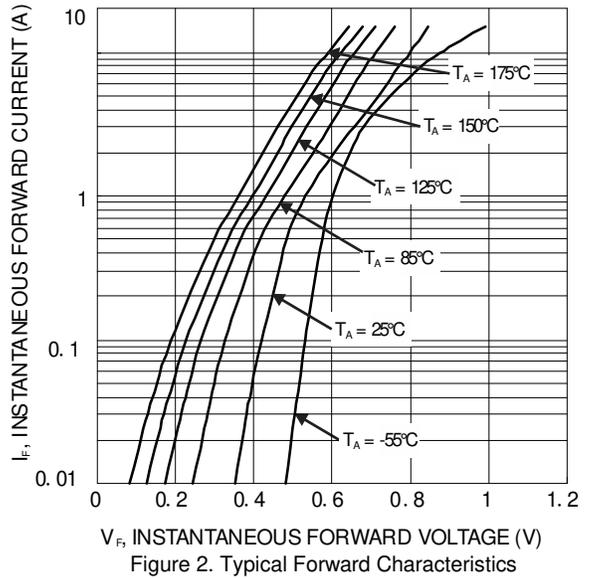
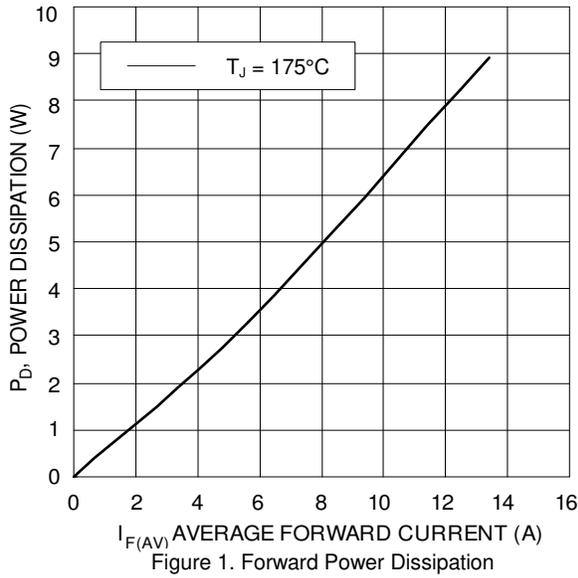
Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JC}$	5	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	20	$^\circ\text{C}/\text{W}$
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	—	0.79	0.84	V	$I_F = 10\text{A}, T_J = +25^\circ\text{C}$
		—	—	0.72		$I_F = 10\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	I_R	—	—	0.1	mA	$V_R = 100\text{V}, T_J = +25^\circ\text{C}$
		—	—	10		$V_R = 100\text{V}, T_J = +125^\circ\text{C}$

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

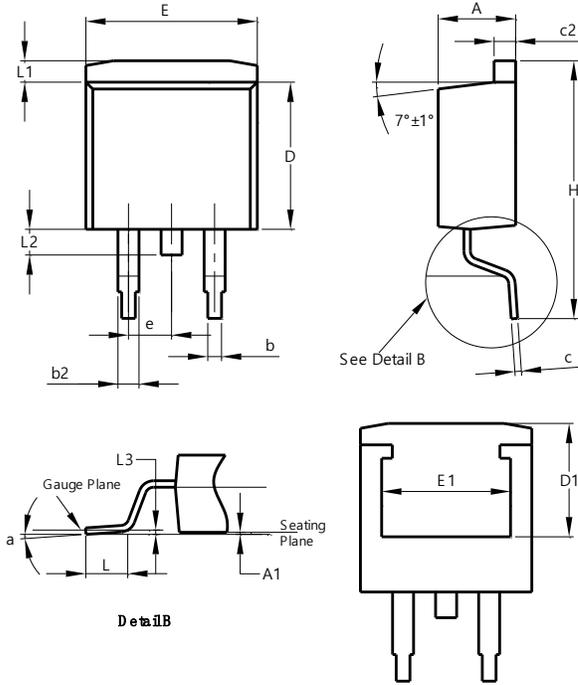


Note: 5. Test with 2inch Al board.

Package Outline Dimensions

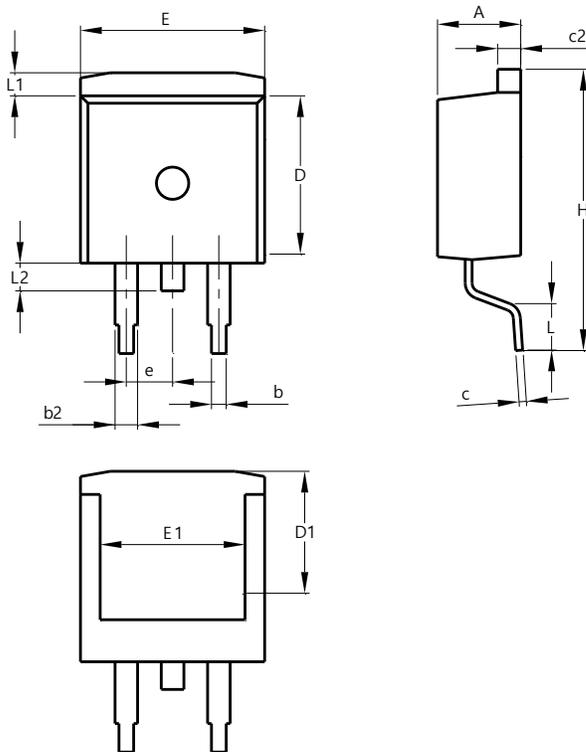
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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	6.95	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	8.23	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
L3	-	-	0.254
a	0°	8°	-
All Dimensions in mm			

TO263AB (D2PAK) (Type BR)

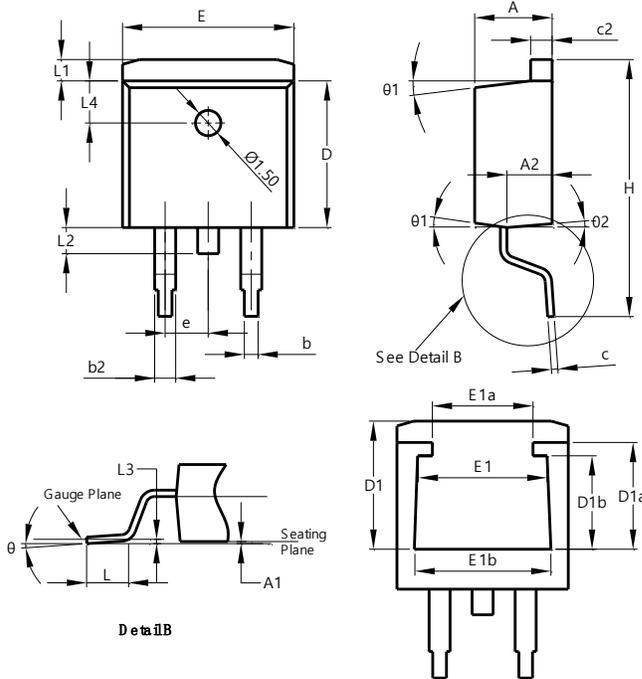


TO263AB (D2PAK) (Type BR)			
Dim	Min	Max	Typ
A	4.30	4.70	-
b	0.70	0.90	-
b2	1.15	1.35	-
c	0.40	0.60	-
c2	1.20	1.40	-
D	9.00	9.40	-
D1	7.96	8.36	-
E	9.80	10.20	-
E1	7.85	8.05	-
e	2.34	2.74	-
H	15.00	15.87	-
L	2.24	2.84	-
L1	1.00	1.40	-
L2	1.20	1.60	-
All Dimensions in mm			

Package Outline Dimensions (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO263AB (D2PAK) (Type TH)

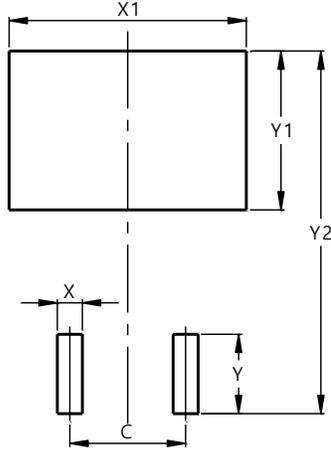


TO263AB (D2PAK) (Type TH)			
Dim	Min	Max	Typ
A	4.40	4.70	4.57
A1	0.00	0.20	0.10
A2	2.59	2.79	2.69
b	0.77	0.90	0.813
b2	1.20	1.36	1.27
c	0.356	0.47	0.381
c2	1.22	1.32	1.27
D	8.60	8.80	8.70
D1	6.60	7.80	7.60
D1a	5.33	6.53	6.33
D1b	4.54	5.74	5.54
e	2.54 BSC		
E	10.00	10.20	10.10
E1	6.67	7.87	7.67
E1a	4.94	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			

Suggested Pad Layout

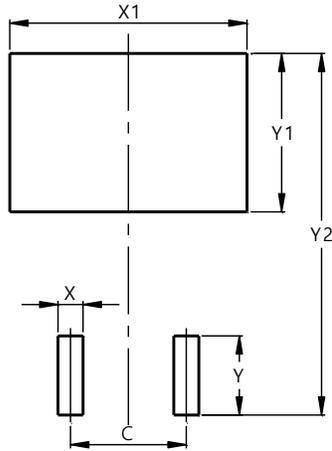
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TO263AB (D2PAK)



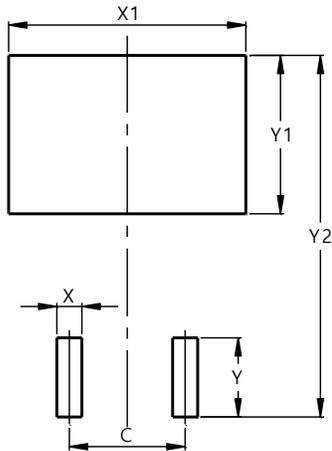
Dimensions	Value (in mm)
C	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

TO263AB (D2PAK) (Type BR)



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

TO263AB (D2PAK) (Type TH)



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

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