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

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**

Description

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

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

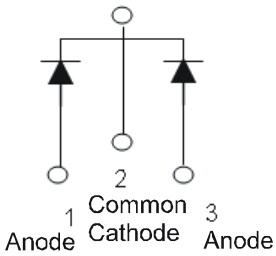
Mechanical Data

- Case: TO263AB (D2PAK), TO263AB (D2PAK) (Type TH), TO263AB (D2PAK) (Type BR)
- 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 (D2PAK), TO263AB (D2PAK) (Type TH), TO263AB (D2PAK) (Type BR) — 1.6 grams (Approximate)

TO263AB (D2PAK), TO263AB (D2PAK) (Type TH), TO263AB (D2PAK) (Type BR)



Top View



Package Pin Out Configuration

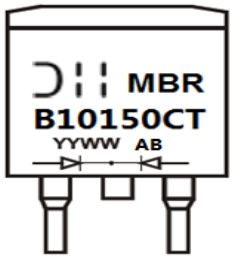
Ordering Information (Note 4)

Part Number	Case	Packaging
MBRB10150CT	TO263AB (D2PAK)	50 Pieces/Tube
MBRB10150CT	TO263AB (D2PAK) (Type TH)	50 Pieces/Tube
MBRB10150CT	TO263AB (D2PAK) (Type BR)	50 Pieces/Tube
MBRB10150CT-13	TO263AB (D2PAK)	800 Pieces/Tube
MBRB10150CT-13	TO263AB (D2PAK) (Type TH)	800 Pieces/Tube
MBRB10150CT-13	TO263AB (D2PAK) (Type BR)	800 Pieces/Tube

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

TO263AB (D2PAK), TO263AB (D2PAK) (Type TH), TO263AB (D2PAK) (Type BR)



= Manufacturer's Marking
MBRB10150CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 18 = 2018)
WW = Week (01 to 53)

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Maximum Ratings (Per Leg) (@T_A = +25°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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	150	V
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
Voltage Rate of Change (Rated V_R)	dv/dt	10000	V/μs

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JC}$	5	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	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 0.81	V	I_F = 5A, T_J = +25°C I_F = 5A, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	— —	0.05 10	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.

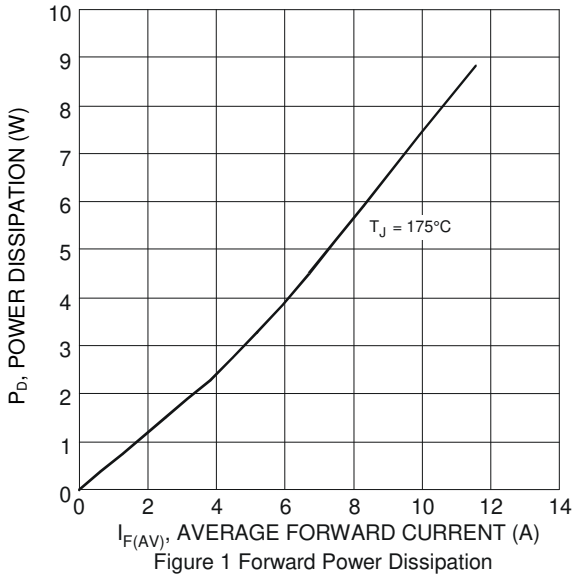


Figure 1 Forward Power Dissipation

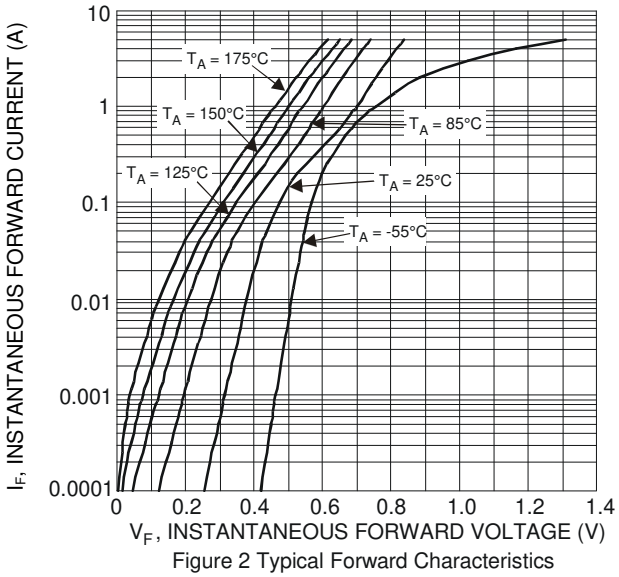


Figure 2 Typical Forward Characteristics

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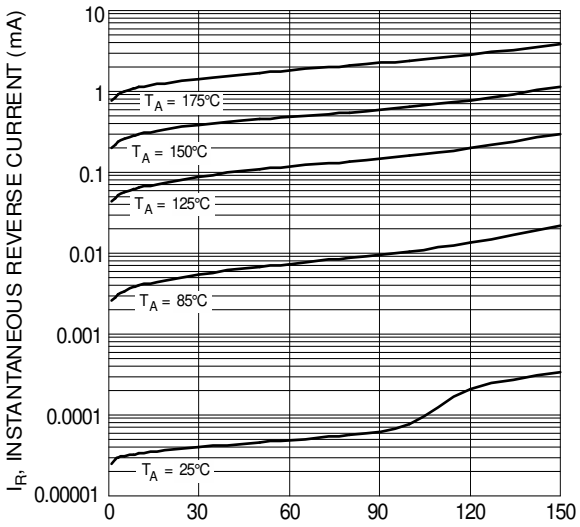


Figure 3 Typical Reverse Characteristics

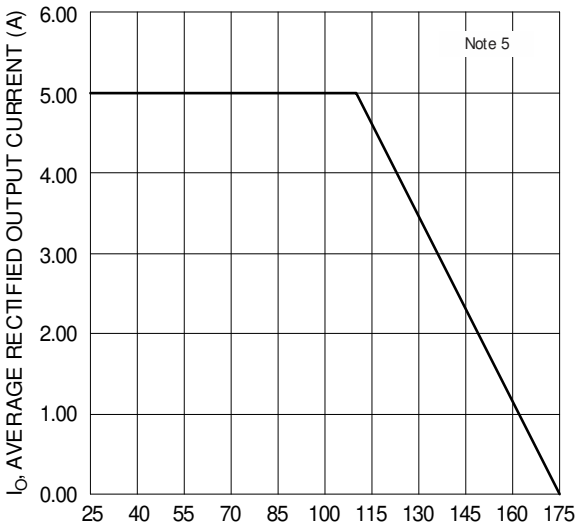


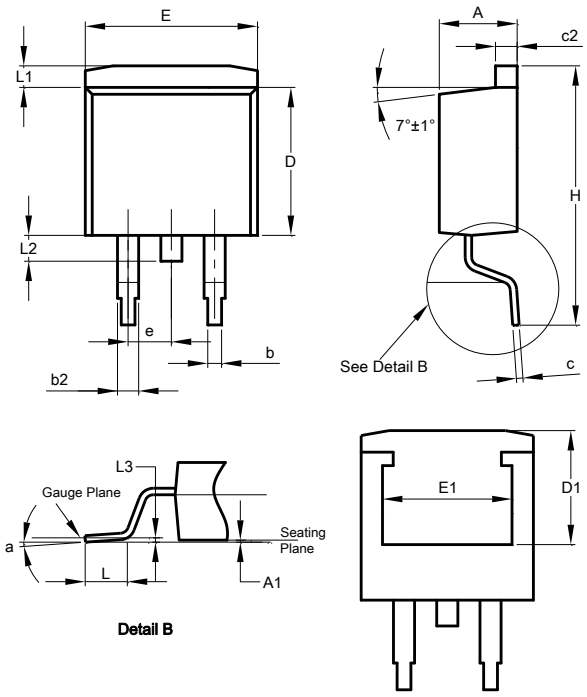
Figure 4 Forward Current Derating Curve

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Package Outline Dimensions

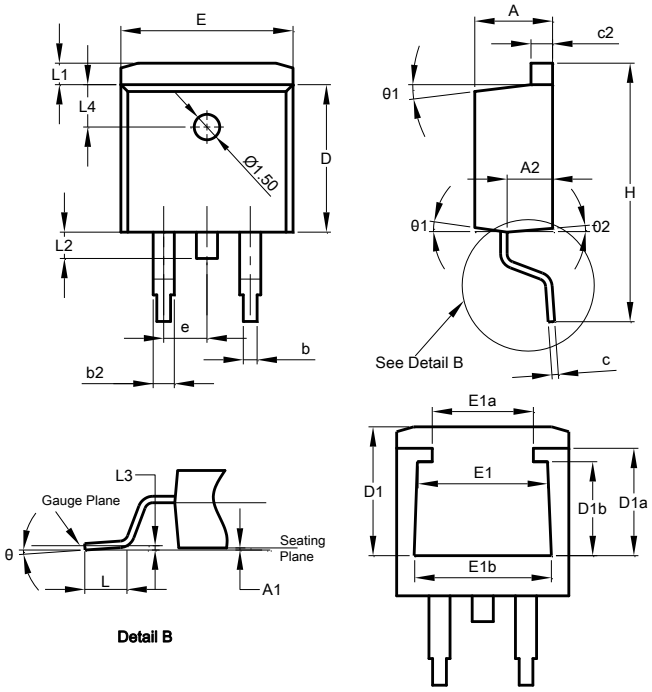
Please see http://www.diodes.com/package-outlines.html for the latest version.

(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	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			

(2) TO263AB (D2PAK) (Type TH)



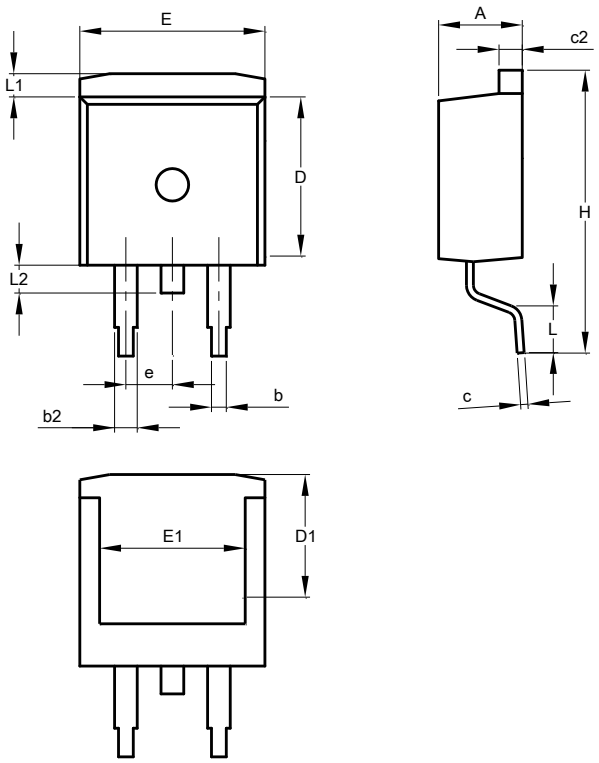
TO263AB (D2PAK) (Type TH)			
Dim	**Min**	**Max**	**Typ**
A	4.40	4.70	4.57
A1	0.00	0.20	0.10
A2	2.59	2.79	2.69
b	0.77	0.90	0.813
b2	1.20	1.36	1.27
c	0.356	0.47	0.381
c2	1.22	1.32	1.27
D	8.60	8.80	8.70
D1	6.60	7.80	7.60
D1a	5.33	6.53	6.33
D1b	4.54	5.74	5.54
e	2.54 BSC		
E	10.00	10.20	10.10
E1	6.67	7.87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

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Package Outline Dimensions (Cont.)

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

(3) TO263AB (D2PAK) (Type BR)

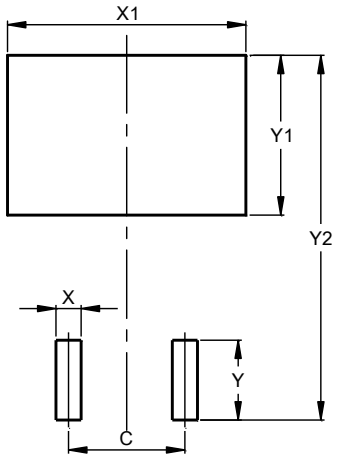


TO263AB (D2PAK) (Type BR)			
Dim	**Min**	**Max**	**Typ**
A	4.30	4.70	-
b	0.70	0.90	-
b2	1.15	1.35	-
c	0.40	0.60	-
c2	1.20	1.40	-
D	9.00	9.40	-
D1	7.96	8.36	-
E	9.80	10.20	-
E1	7.85	8.05	-
e	2.34	2.74	
H	15.00	15.87	-
L	2.24	2.84	-
L1	1.00	1.40	-
L2	1.20	1.60	-
All Dimensions in mm			

Suggested Pad Layout

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

(1) TO263AB (D2PAK)



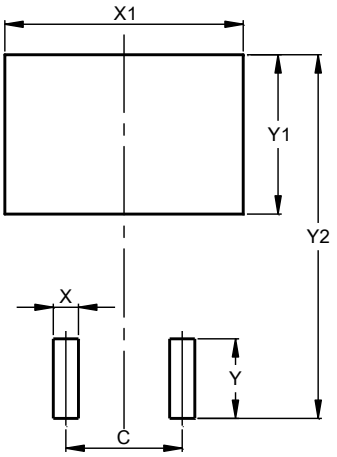
Dimensions	Value (in mm)
C	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

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Suggested Pad Layout (Cont.)

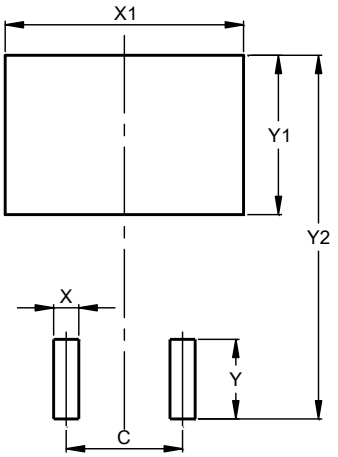
Please see http://www.diodes.com/package-outlines.html for the latest version.

(2) 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

(3) 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

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