

10A SCHOTTKY BARRIER RECTIFIER

Product Summary

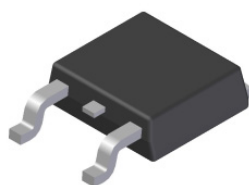
MBRD10100CT (Per Leg)

V_{RRM} (V)	I_O (A)	V_F (MAX) (V) @ +25°C	I_R (MAX) (mA) @ +25°C
100	5	0.84	0.1

Description and Applications

This SCHOTTKY BARRIER RECTIFIER is designed to meet the stringent requirements of commercial applications. It is ideally suited for use as a:

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



TO252

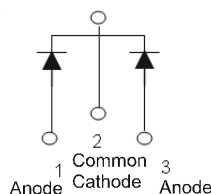
Bottom View

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)**

Mechanical Data

- Case: TO252 (DPAK)
- 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
- Polarity: See Below
- Weight: TO252– 0.317 grams (Approximate)



Package Pin Out

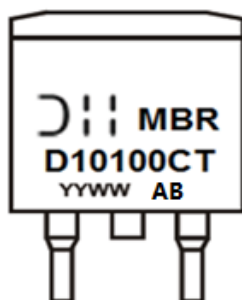
Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
MBRD10100CT-13	TO252 (DPAK)	2500 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



MBRD10100CT = 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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	100	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}	110	A

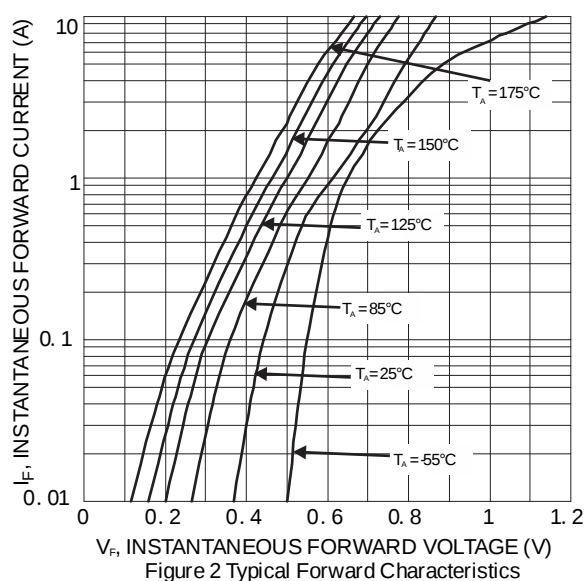
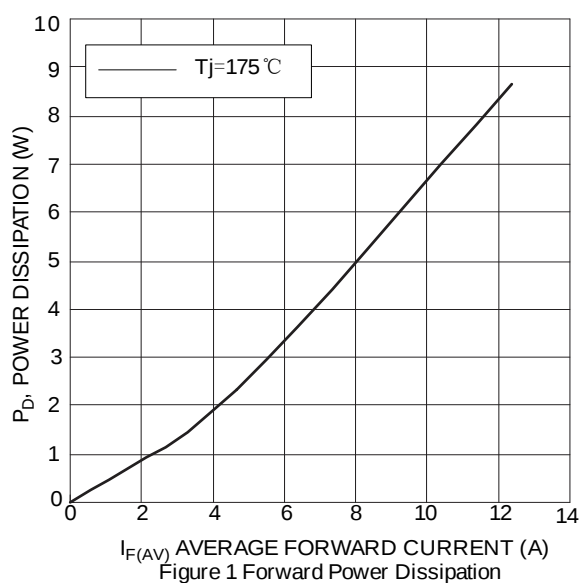
Thermal Characteristics (Per Leg)

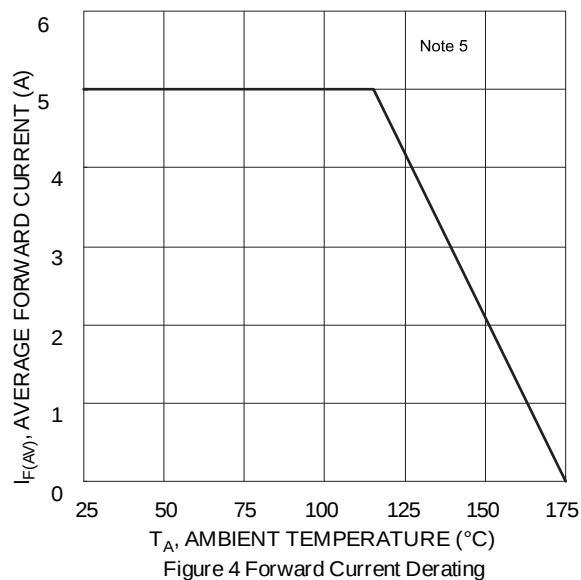
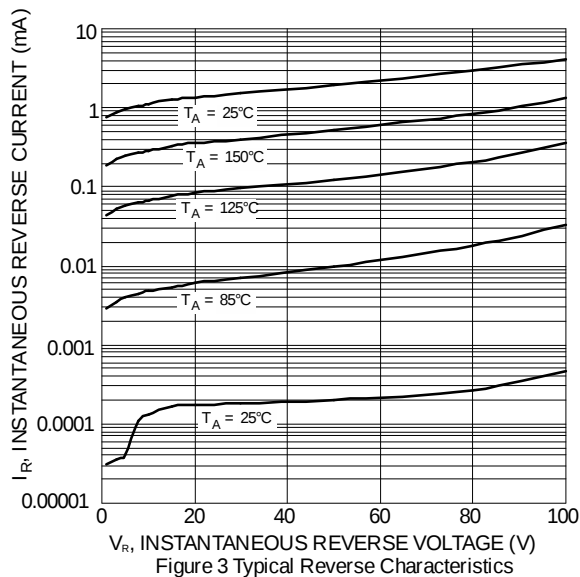
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JC}$	6	$^\circ\text{C/W}$
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	22	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

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	—	0.79 —	0.84 0.72	V	$I_F = 5\text{A}, T_J = +25^\circ\text{C}$ $I_F = 5\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	I_R	—	—	0.1 10	mA	$V_R = 100\text{V}, T_J = +25^\circ\text{C}$ $V_R = 100\text{V}, T_J = +125^\circ\text{C}$

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

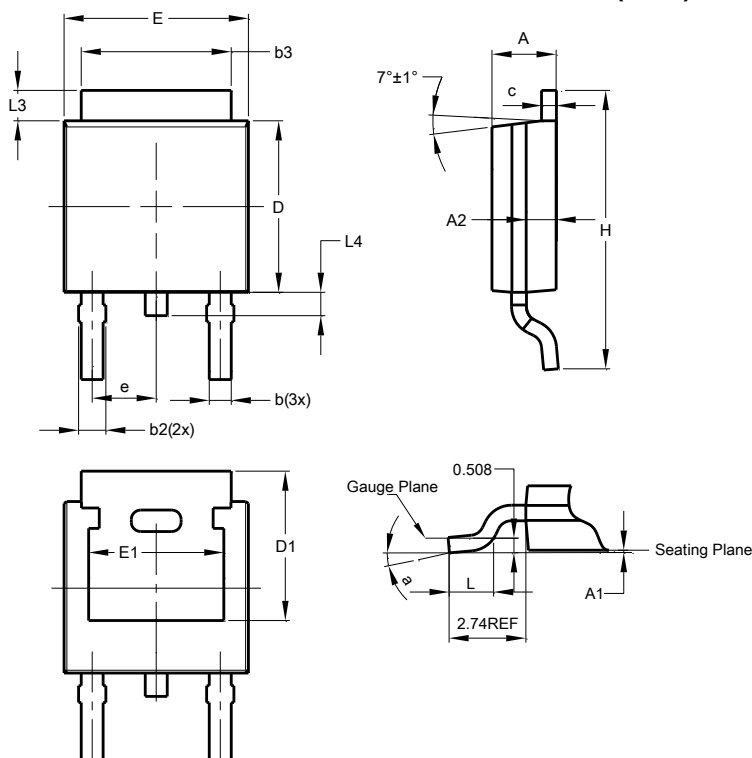




Package Outline Dimensions

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

TO252 (DPAK)

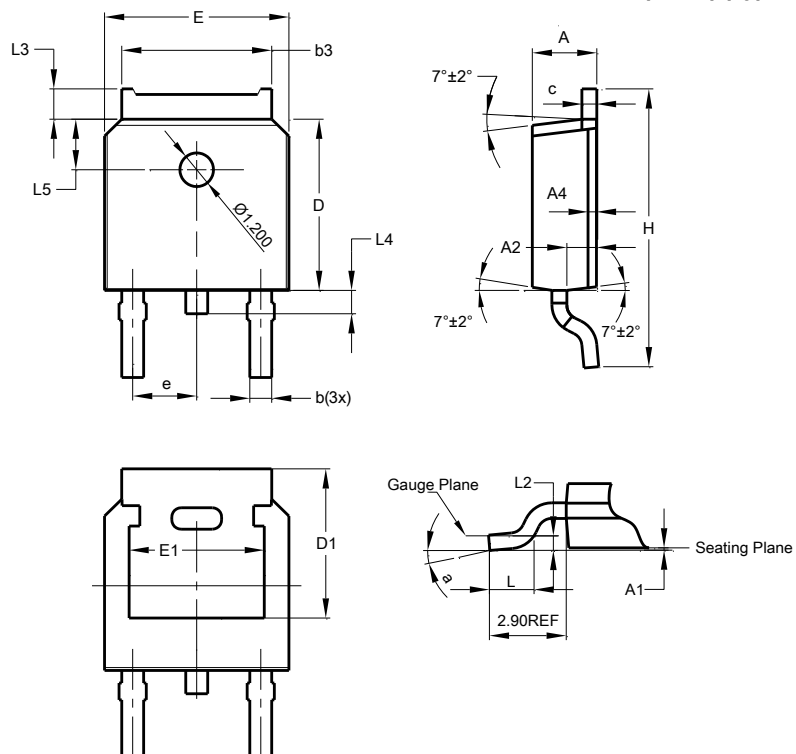


TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	-
All Dimensions in mm			

Package Outline Dimensions (cont.)

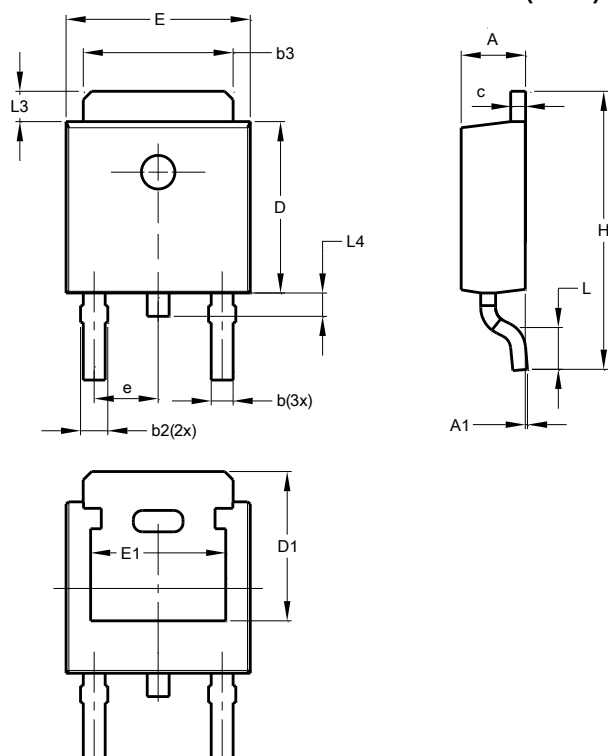
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

TO252 (DPAK) (Type TH)



TO252 (DPAK) (Type TH)			
Dim	Min	Max	Typ
A	2.20	2.38	2.30
A1	0.00	0.10	-
A2	0.97	1.17	1.07
A4	0.10 REF		
b	0.72	0.85	0.78
b3	5.23	5.45	5.33
c	0.47	0.58	0.53
D	6.00	6.20	6.10
D1	5.30 REF		
e	2.286 BSC		
E	6.50	6.70	6.60
E1	4.70	4.92	4.83
H	9.90	10.10	10.30
L	1.40	1.70	1.60
L2	0.51 BSC		
L3	0.90	1.25	-
L4	0.60	1.00	0.80
L5	1.70	1.90	1.80
a	0°	8°	-
All Dimensions in mm			

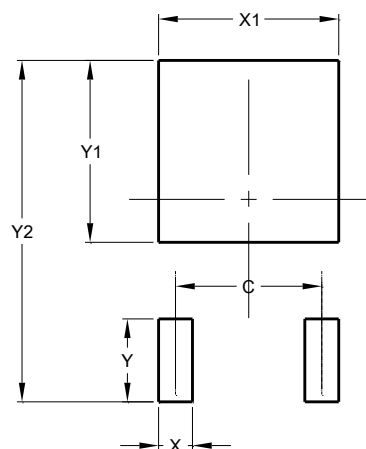
TO252 (DPAK) (Type BR)



TO252 (DPAK) (Type BR)			
Dim	Min	Max	Typ
A	2.20	2.40	-
A1	0.00	0.10	-
b	0.50	0.70	-
b3	5.20	5.40	-
c	0.45	0.55	-
D	5.95	6.25	-
D1	5.10	5.50	-
E	6.45	6.70	-
E1	4.71	4.91	-
e	2.24	2.34	-
H	9.45	9.95	-
L	1.25	1.75	-
L3	0.95	1.25	-
L4	0.60	0.90	-
All Dimensions in mm			

Suggested Pad layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the 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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