



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

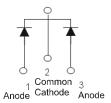
Bottom View

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 (3)
- Polarity: See Below
- Weight: TO252- 0.317 grams (Approximate)



Package Pin Out

Configuration

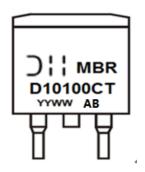
Ordering Information (Note 4)

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) (@TA = +25°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)	lo	5 10	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	110	А

Thermal Characteristics (Per Leg)

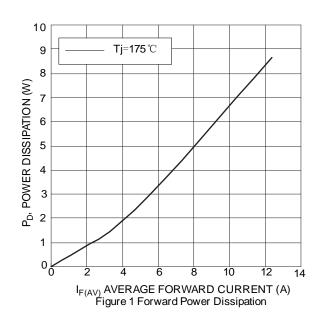
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{ hetaJC}$	6	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{ hetaJA}$	22	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

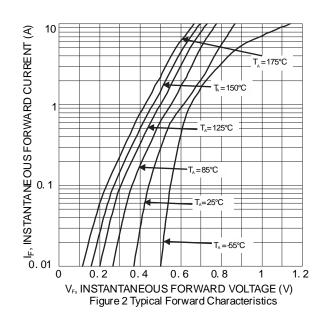
Electrical Characteristics (Per Leg) (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VF	-	0.79	0.84	I V	$I_F = 5A, T_J = +25^{\circ}C$
Trotward voltage brop	٧F	1	1	0.72		$I_F = 5A, T_J = +125$ °C
Lockago Current (Note C)	I _R	_	_	0.1	∞ Λ	$V_R = 100V, T_J = +25$ °C
Leakage Current (Note 6)		_	_	10	mA	$V_R = 100V, T_J = +125$ °C

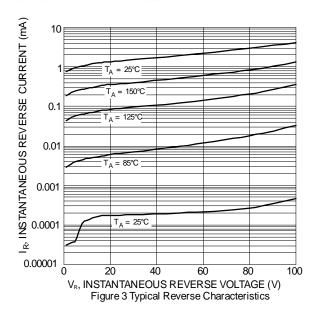
Notes: 5. Test with 2in. Al board.

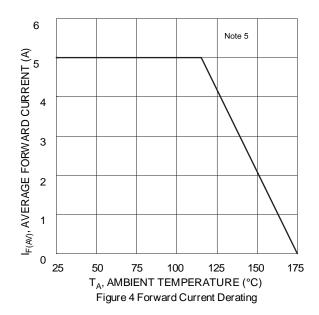
6. Short duration pulse test used to minimize self-heating effect.





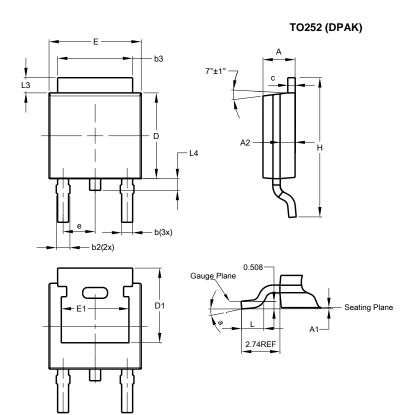






Package Outline Dimensions

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



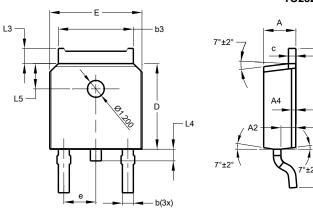
TO252 (DPAK)					
Dim	Min	Max	Тур		
Α	2.19	2.39	2.29		
A 1	0.00	0.13	0.08		
A2	0.97	1.17	1.07		
q	0.64	0.88	0.783		
b2	0.76	1.14	0.95		
b3	5.21	5.46	5.33		
С	0.45	0.58	0.531		
D	6.00	6.20	6.10		
D1	5.21	-	-		
е		-	2.286		
Е	6.45	6.70	6.58		
E1	4.32	-	-		
Н	9.40	10.41	9.91		
L	1.40	1.78	1.59		
L3	0.88	1.27	1.08		
L4	0.64	1.02	0.83		
а	0°	10°	-		
All Dimensions in mm					

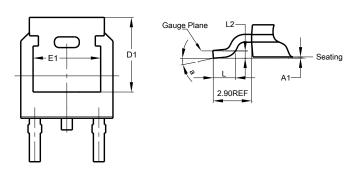


Package Outline Dimensions (cont.)

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

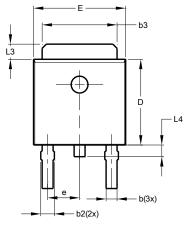
TO252 (DPAK) (Type TH)

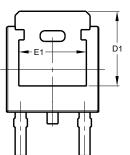


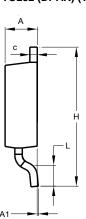


TO252 (DPAK)						
	(Type TH)					
Dim	Min	Тур				
Α	2.20	2.38	2.30			
A1	0.00	0.10	-			
A2	0.97	1.17	1.07			
A4	0	.10 RE	F			
b	0.72	0.85	0.78			
b3	5.23	5.45	5.33			
С	0.47	0.58	0.53			
D	6.00	6.20	6.10			
D1	5.30 REF					
е	2.286 BSC					
Ε	6.50	6.70	6.60			
E1	4.70	4.92	4.83			
Н	9.90	10.10	10.30			
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			
а	0°	8°	-			
All Dimensions in mm						

TO252 (DPAK) (Type BR)





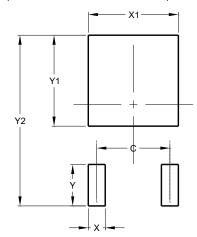


TO252 (DPAK) (Type BR)					
Dim	Min	Max	Тур		
Α	2.20	2.40	-		
A1	0.00	0.10	-		
b	0.50	0.70	-		
b3	5.20	5.40	-		
C	0.45	0.55	-		
D	5.95	6.25	-		
D1	5.10	5.50	-		
Е	6.45	6.70	-		
E1	4.71	4.91	-		
е	2.24	2.34			
Н	9.45	9.95	-		
L	1.25	1.75	-		
L3	0.95	1.25	-		
L4	0.60	0.90	-		
All Dimensions in mm					



Suggested Pad layout

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



Dimensions	Value (in mm)		
С	4.572		
Х	1.060		
X1	5.632		
Y	2.600		
Y1	5.700		
Y2	10.700		

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