



10A SCHOTTKY BARRIER RECTIFIER

Product Summary

MBRD10100CT (Per l	Lea)
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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

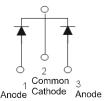
Bottom View

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 (23)
- Polarity: See Below
- Weight: TO252– 0.317 grams (Approximate)



Package Pin Out

Configuration

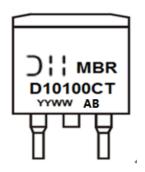
Ordering Information (Note 4)

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)

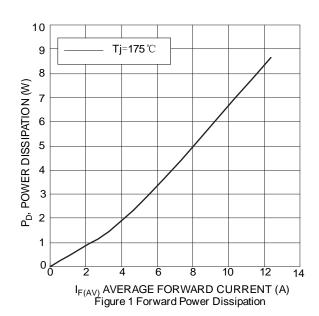
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{ hetaJC}$	6	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{ hetaJA}$	22	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

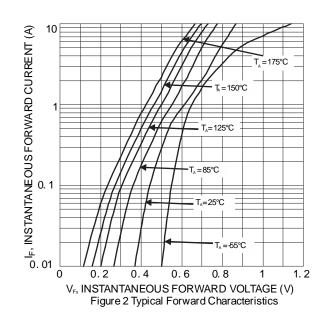
Electrical Characteristics (Per Leg) (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop		1	0.79	0.84	V	$I_F = 5A, T_J = +25^{\circ}C$
Forward Voltage Drop	V_{F}	_	_	0.72	V	$I_F = 5A, T_J = +125$ °C
Leakage Current (Note 6)			_	0.1	A	$V_R = 100V, T_J = +25$ °C
		_	_	10	I IIIA	$V_R = 100V, T_J = +125$ °C

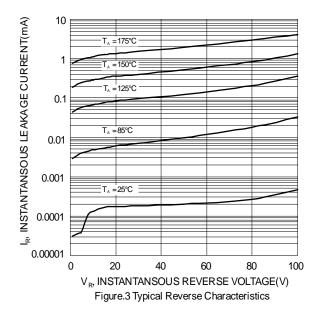
Notes: 5. Test with 2in. Al board.

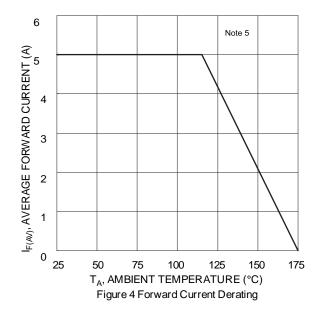
6. Short duration pulse test used to minimize self-heating effect.





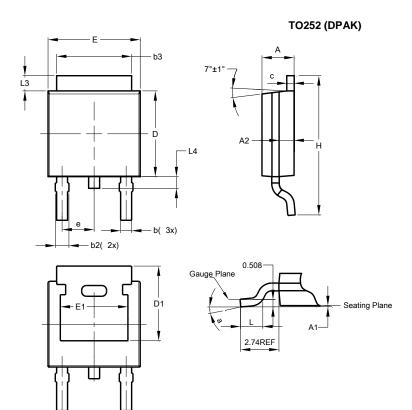






Package Outline Dimensions

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



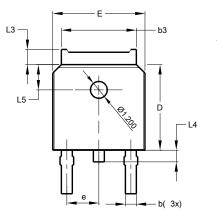
TO252 (DPAK)					
Dim	Min	Max	Тур		
Α	2.19	2.39	2.29		
A 1	0.00	0.13	0.08		
A2	0.97	1.17	1.07		
q	0.64	0.88	0.783		
b2	0.76	1.14	0.95		
b3	5.21	5.46	5.33		
С	0.45	0.58	0.531		
D	6.00	6.20	6.10		
D1	5.21	-	-		
е	-	-	2.286		
Е	6.45	6.70	6.58		
E1	4.32	-	-		
Н	9.40	10.41	9.91		
L	1.40	1.78	1.59		
L3	0.88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

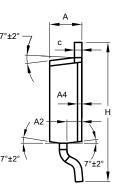


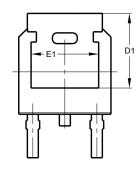
Package Outline Dimensions (continued)

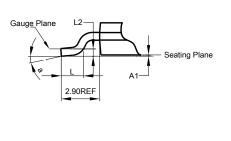
Please see http://www.diodes.com/package-outlines.html for the latest version.

TO252 (DPAK) (Type TH)



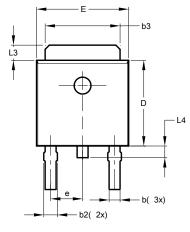


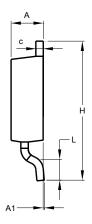


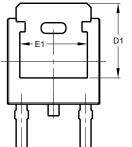


TO252 (DPAK)				
(Type TH)				
Dim	Min	Тур		
Α	2.20	2.38	2.30	
A 1	0.00	0.10	-	
A2	0.97	1.17	1.07	
A4	0	.10 RE	F	
p	0.72	0.85	0.78	
b3	5.23	5.45	5.33	
С	0.47	0.53		
D	6.00	6.10		
D1	5.30 REF			
е	2.	286 BS	C	
Е	6.50	6.70	6.60	
E1	4.70	4.92	4.83	
Н	9.90	10.10	10.30	
L	1.40	1.70	1.60	
L2	0.51 BSC			
L3	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)





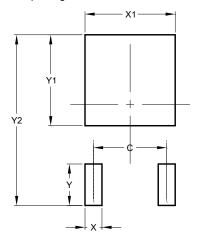


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TO252 (DPAK) (Type BR)				
Dim	Min	Max	Тур	
Α	2.20	2.40	-	
A 1	0.00	0.10	-	
b	0.50	0.70	-	
b3	5.20	5.40	-	
С	0.45	0.55	-	
ם	5.95	6.25	-	
D1	5.10	5.50	-	
Е	6.45	6.70	-	
E1	4.71	4.91	-	
е	2.24	2.34		
Ξ	9.45	9.95	-	
L	1.25	1.75	-	
L3	0.95	1.25	-	
L4	0.60	0.90	-	
All Dimensions in mm				



Suggested Pad layout

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



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

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