



MBR2045CT - MBR2060CT / MBRF2045CT - MBRF2060CT

20A SCHOTTKY BARRIER RECTIFIER

Product Summary

MBR2045CT / MBRF2045CT (Per Leg)

V _{RRM} (V)	I _O (A)	V _{F (MAX)} (V) @ +25°C	I _{R (MAX)} (mA) @ +25°C
45	10	0.64	0.1

MBR2060CT / MBRF2060CT (Per Leg)

V _{RRM} (V)	I _O (A)	V _{F (MAX)} (V) @ +25°C	I _{R (MAX)} (mA) @ +25°C
60	10	0.81	0.1

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 and Applications

This Schottky Barrier Rectifier has been designed to meet the general requirements of commercial applications. It is ideally suited for use as:

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

Mechanical Data

- Case: TO-220AB, ITO-220AB
- 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: TO-220AB 1.95 grams (approximate)

ITO-220AB - 1.69 grams (approximate)



TO-220AB Top View



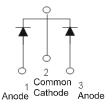
TO-220AB Bottom View



ITO-220AB Top View



ITO-220AB Bottom View



Package Pin Out Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
MBR2045CT-LJ	TO-220AB (Type C)	50 pieces/tube
MBRF2045CT-LJ	ITO-220AB (TO220F-3)	50 pieces/tube
MBR2060CT-LJ	TO-220AB (Type C)	50 pieces/tube
MBRF2060CT-LJ	ITO-220AB (TO220F-3)	50 pieces/tube

Notes:

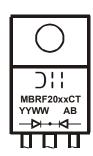
- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
- 3. Halogen- and Antimony-free "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



MBR20xxCT = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last two digits of year (ex: 13 = 2013) WW = Week (01 - 53)



MBRF20xxCT = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last two digits of year (ex: 13 = 2013) WW = Week (01 - 53)

Maximum Ratings (Per Leg) (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitance load, derate current by 20%.

1 of supusitation load, defaits sufferingly 25%.						
Characteristic		Symbol	Value	Unit		
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage		V _{RRM}				
DC Blocking Voltage MBR2045CT / MBRF2045CT MBR2060CT / MBRF2060CT		V _{RWM} V _{RM}	45 60	V		
Average Rectified Output Current	(Per Leg) (Total)	Io	10 20	Α		
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I _{FSM}	180	А		

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5) Package = TO-220AB Package = ITO-220AB	$R_{ hetaJC}$	2 4	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5) Package = TO-220AB Package = ITO-220AB	$R_{\theta JA}$	15 25	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

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

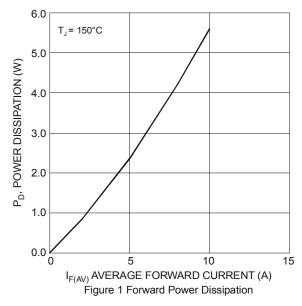
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
MBR2045CT / MBRF2045CT	VF	_	0.58	0.64		I _F = 10A, T _J = +25°C
Forward Voltage Drop	٧F	_	_	0.57	٧	$I_F = 10A, T_J = +125$ °C
MBR2060CT / MBRF2060CT	.,		0.75	0.81	W	I _F = 10A, T _J = +25°C
Forward Voltage Drop	V _F	_	_	0.69	٧	I _F = 10A, T _J = +125°C
Leakage Current (Note 6)			-	0.1	mA	V _R = Rated V, T _J = +25°C
at Rated DC Blocking Voltage	IR	_	_	15	IIIA	V_R = Rated V, T_J = +125°C

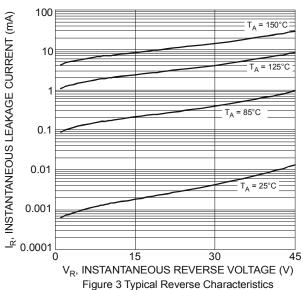
Notes: 5. Device mounted on heat sink (45mm x 20mm x12mm), with minimum recommended pad layout per http://www.diodes.com

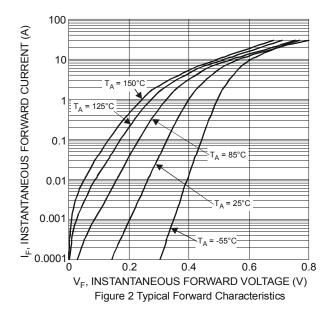
6. Short duration pulse test used to minimize self-heating effect

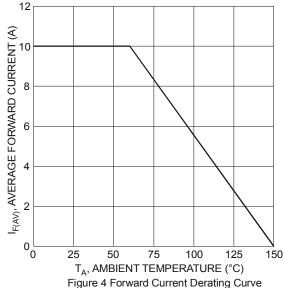


MBR2045CT / MBRF2045CT



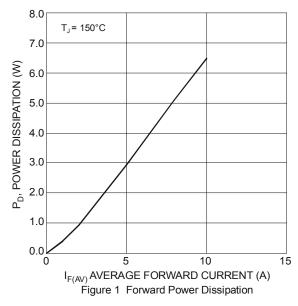


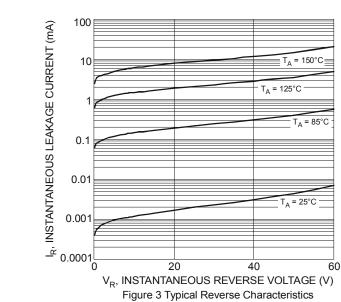


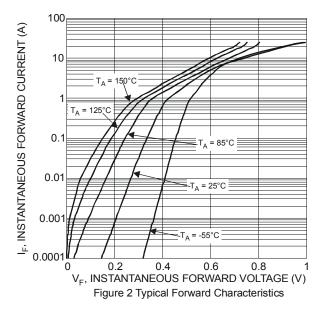


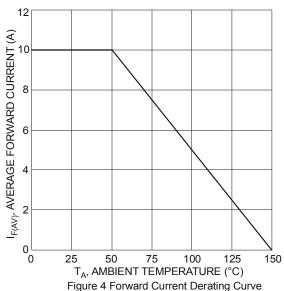


MBR2060CT / MBRF2060CT





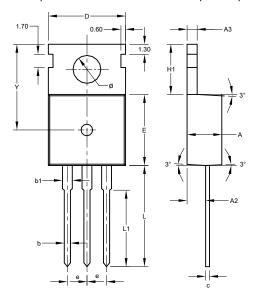




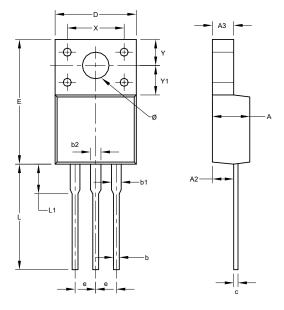


Package Outline Dimensions

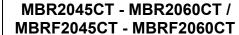
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



TO220AB Type C							
Dim	Dim Min Max Typ						
Α	-	-	4.50				
A2	1	-	2.40				
A3	ı	ı	1.30				
b	0.70	0.90	-				
b1	-	-	1.27				
С	0.40	0.60	-				
D	9.80	10.20	-				
Е	9.00	9.40	-				
e	ı	ı	2.54				
H1	6.30	6.70	-				
L	12.60	13.60	-				
L1	9.60	10.60	-				
Υ	-	-	11.10				
Ø	3.56	3.64	-				
All Dimensions in mm							



ITO220AB (TO220F-3)					
Dim	Min	Max	Тур		
Α	4.30	4.90	-		
A2	2.52	2.92	-		
A3	2.35	2.90	1		
b	0.55	0.90	ı		
b1	1.00	1.40	ı		
b2	1.10	1.50	ı		
С	0.45	0.60	-		
D	9.70	10.30	-		
E	14.70	16.00	-		
е	-	-	2.54		
L	12.50	13.50	ı		
L1	2.79	4.50	-		
Х	6.90	7.10	-		
Υ	3.00	3.40	-		
Y1	3.37	3.90	-		
Ø	3.00	3.55	-		
All Dimensions in mm					





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