

Product Summary

MBRF1040CT – MBRF1045CT (Per Leg)

V _{RRM} (V)	I _O (A)	V _F (MAX) (V) @ +25°C	I _R (MAX) (mA) @ +25°C
40 - 45	5	0.65	0.1

MBRF1060CT (Per Leg)

V _{RRM} (V)	I _O (A)	V _F (MAX) (V) @ +25°C	I _R (MAX) (mA) @ +25°C
60	5	0.75	0.1

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:

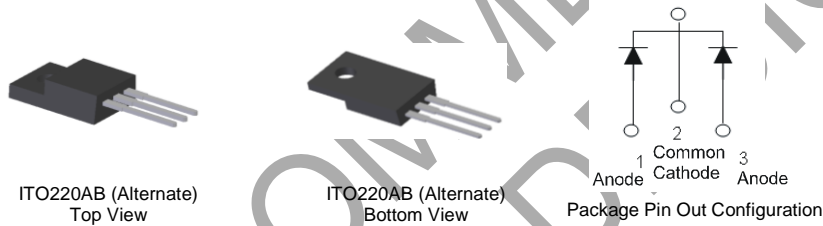
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

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**

Mechanical Data

- Case: ITO220AB (Alternate)
- 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: As Marked on Body
- Weight: ITO220AB (Alternate) – 1.69 grams (Approximate)

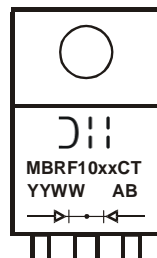


Ordering Information (Note 4)

Device	Packaging	Shipping
MBRF1040CT-JT	ITO220AB (Alternate)	50/Tube
MBRF1045CT-JT	ITO220AB (Alternate)	50/Tube
MBRF1060CT-JT	ITO220AB (Alternate)	50/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



MBRF10xxCT = 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 to 53)

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	MBRF 1040CT	MBRF 1045CT	MBRF 1060CT	Unit
Peak Repetitive Reverse Voltage	V _{RRM}				
Working Peak Reverse Voltage	V _{RWM}	40	45	60	V
DC Blocking Voltage	V _R				
RMS Reverse Voltage	V _{R(RMS)}	28	31.5	42	V
Average Rectified Output Current (Note 5)	I _O			5	A
(Per Leg) (Total)				10	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}			100	A

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R _{θJC}	5	°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	MBRF1040CT	MBRF1045CT	MBRF1060CT	Unit
Forward Voltage Drop Maximum @ I _F = 5.0A, T _C = +125°C @ I _F = 5.0A, T _C = +25°C	V _{FM}	0.55 0.65		0.65 0.75	V
Peak Reverse Current Maximum at Rated DC Blocking Voltage (Note 6) @ T _C = +25°C @ T _C = +125°C	I _{RM}	0.1 15			mA
Typical Total Capacitance (Note 7)	C _T	150			pF

Notes: 5. Device mounted on Device with additional heat sink (45mm X 20mm X 12mm), with minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>
6. Short duration pulse test used to minimize self-heating effect.
7. Measured at 1.0MHz and applied reverse voltage of 4.0V DC and per element.

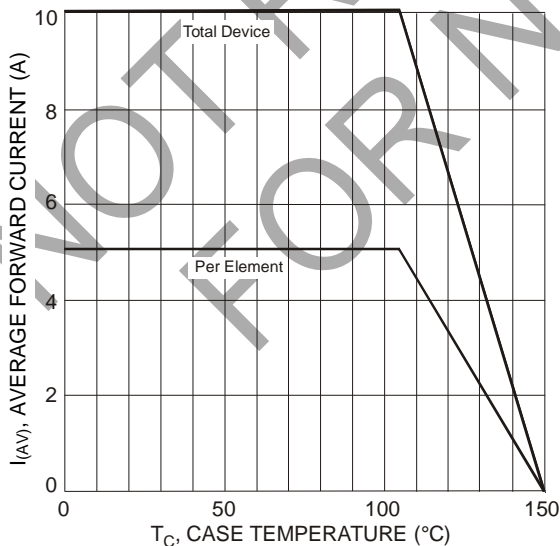


Figure 1 Forward Current Derating Curve

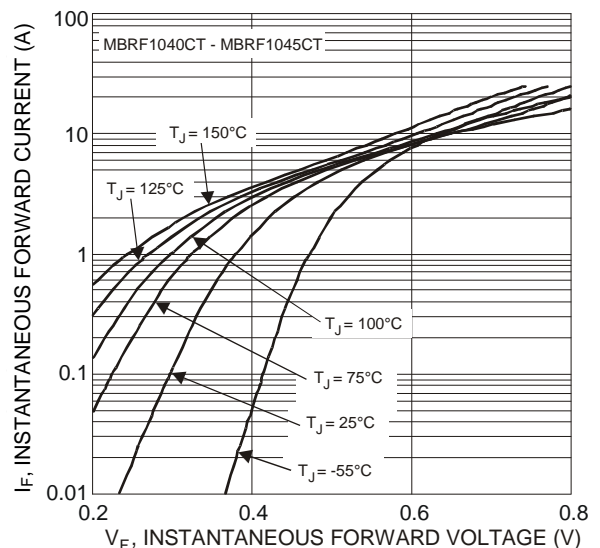


Figure 2 Typical Forward Characteristics, per Element

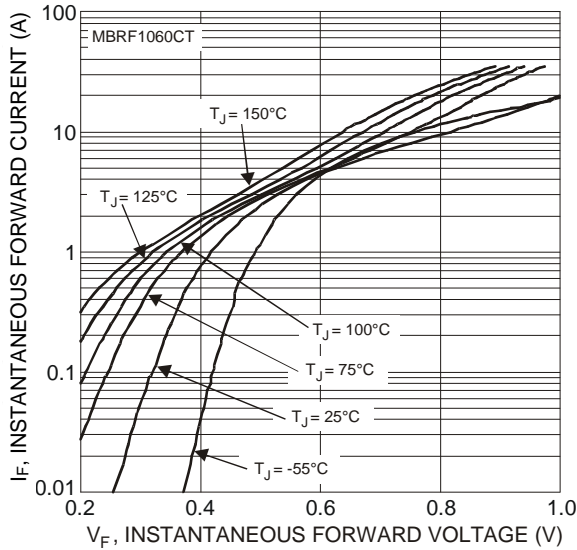


Figure 3 Typical Forward Characteristics, per Element

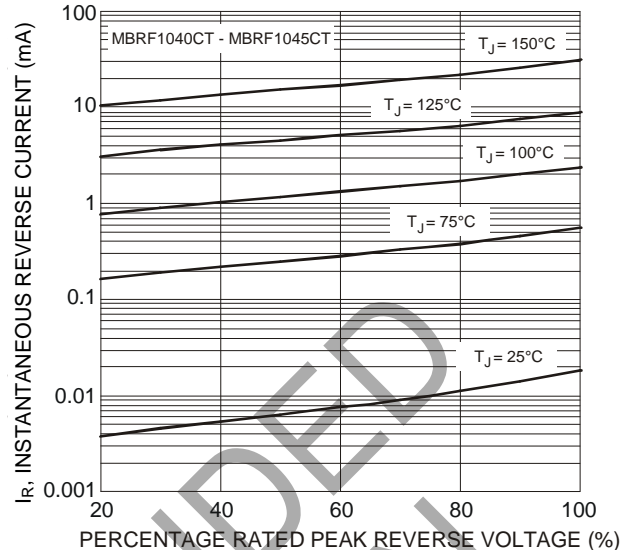


Figure 4 Typical Reverse Characteristics, per Element

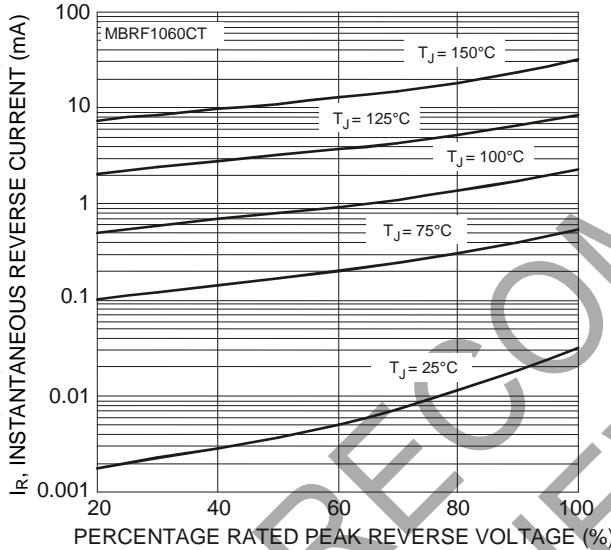


Figure 5 Typical Reverse Characteristics, per Element

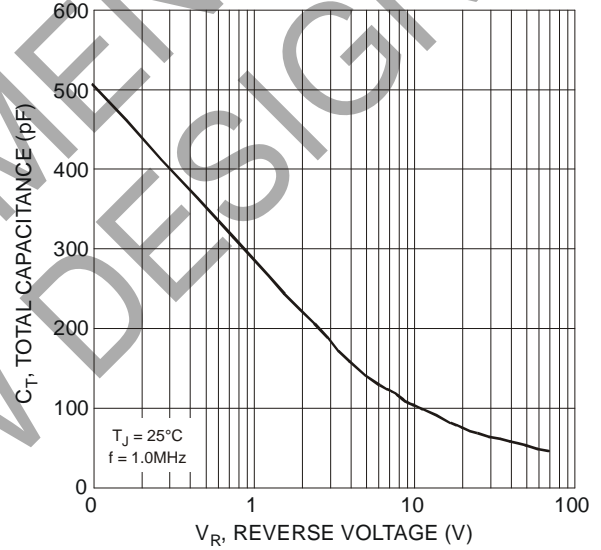
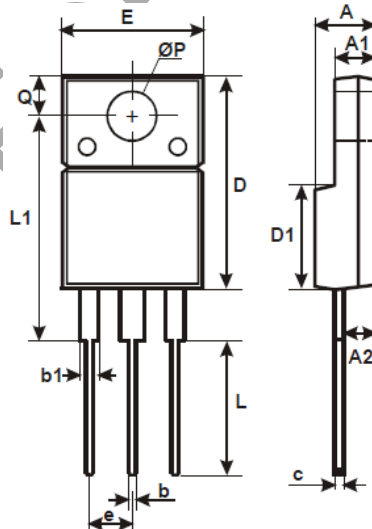


Figure 6 Typical Capacitance, per Element

Package Outline Dimensions

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



ITO220AB Alternate		
Dim	Min	Max
A	4.36	4.77
A1	2.54	3.1
A2	2.54	2.8
b	0.55	0.75
b1	1.2	1.5
c	0.38	0.68
D	14.5	15.5
D1	8.38	8.89
E	9.72	10.27
e	2.41	2.67
L	9.87	10.67
L1	15.8	17
ØP	3.08	3.39
Q	2.6	3.0

All Dimensions in mm

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