

OBSOLETE - PART DISCONTINUED

Product Summary

MBR3045CT / MBRF3045CT (Per Leg)

| V _{RRM} (V) | I _o (A) | V _F (MAX) (V) @ +25°C | I _R (MAX) (mA) @ +25°C |
|----------------------|--------------------|-------------------------------------|--------------------------------------|
| 45 | 15 | 0.62 | 0.1 |

Description and Applications

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

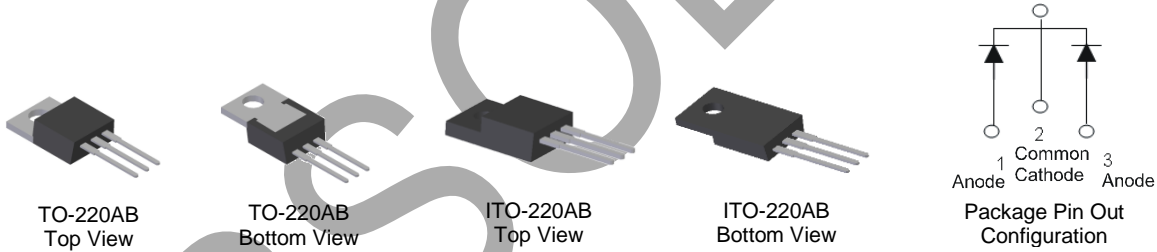
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

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)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

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 (E3)
- Polarity: See Below
- Weight: TO-220AB – 1.95 grams (Approximate)
ITO-220AB – 1.69 grams (Approximate)

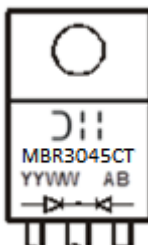


Ordering Information (Note 4)

| Part Number | Case | Packaging |
|---------------|---------------------|----------------|
| MBR3045CT-LJ | TO-220AB (Type C) | 50 pieces/tube |
| MBRF3045CT-LJ | ITO220AB (TO220F-3) | 50 pieces/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



MBR3045CT = 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)



MBRF3045CT = 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%.

| Characteristic | Symbol | Value | Unit |
|---|------------------|----------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 45 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current (Per Leg) (Total) | I _o | 15 30 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 200 | A |

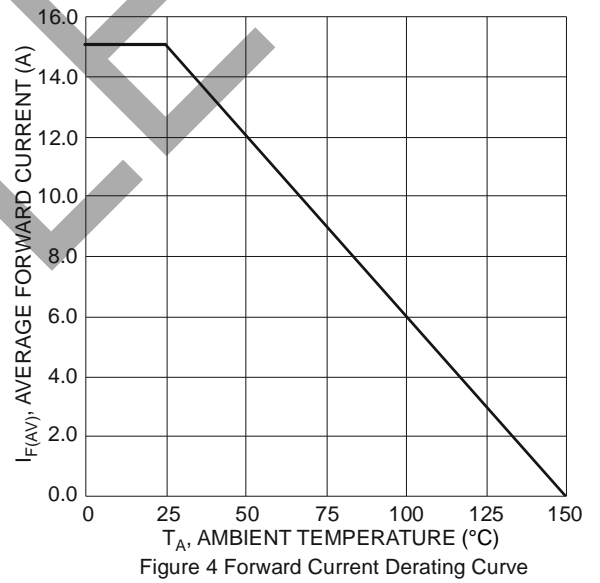
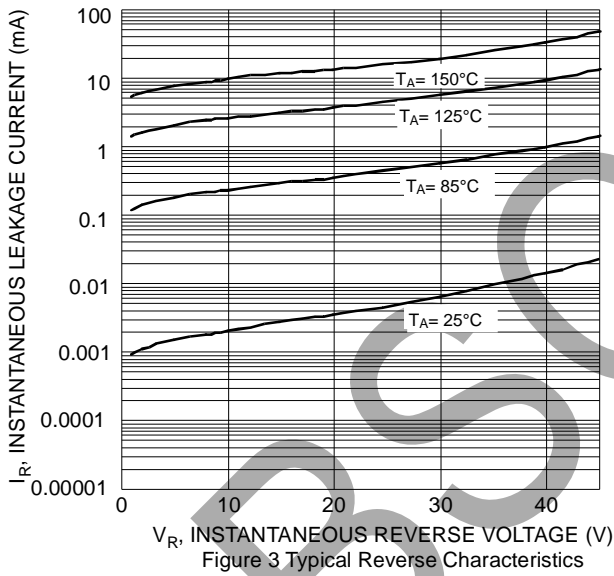
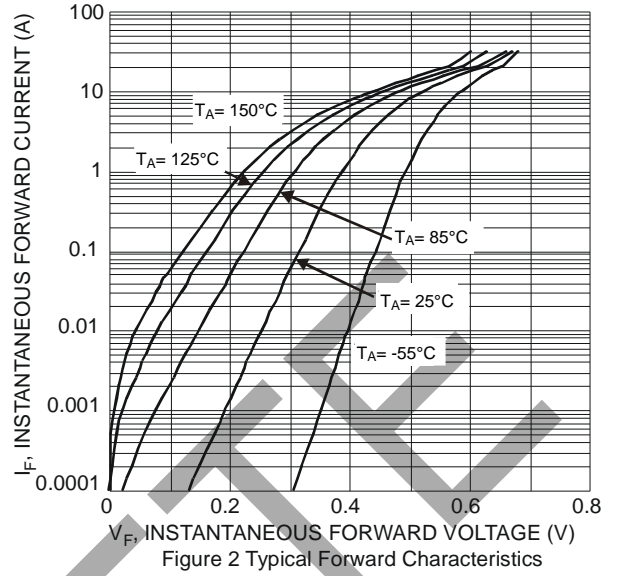
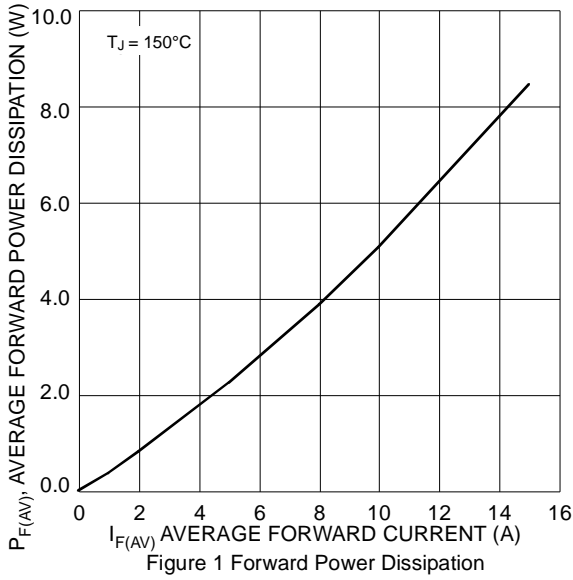
Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Case (Note 5) Package = TO-220AB Package = ITO-220AB | R _{θJC} | 2 4 | °C/W |
| Typical Thermal Resistance, Junction to Ambient (Note 5) Package = TO-220AB Package = ITO-220AB | R _{θJA} | 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.)

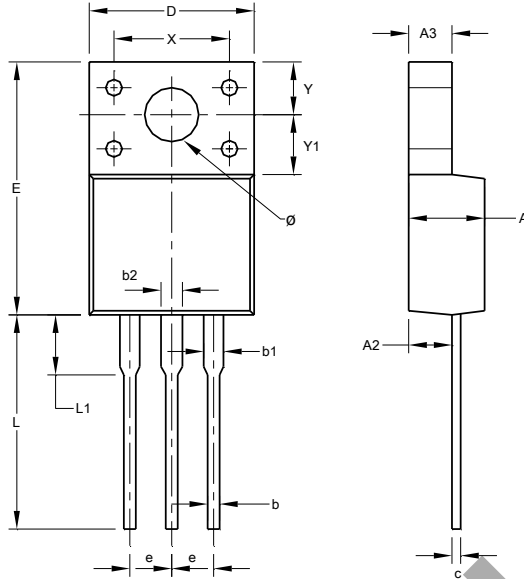
| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|------|--------------|------|---|
| Forward Voltage Drop | V _F | — | 0.58 | 0.62 0.59 | V | I _F = 15A, T _J = +25°C I _F = 15A, T _J = +125°C |
| Leakage Current (Note 6) | I _R | — | — | 0.1 30 | mA | V _R = 45V, T _J = +25°C V _R = 45V, T _J = +125°C |

Notes: 5. Device mounted on heat sink (45mm x 20mm x 12mm), with minimum recommended pad layout per <http://www.diodes.com>.
6. Short duration pulse test used to minimize self-heating effect

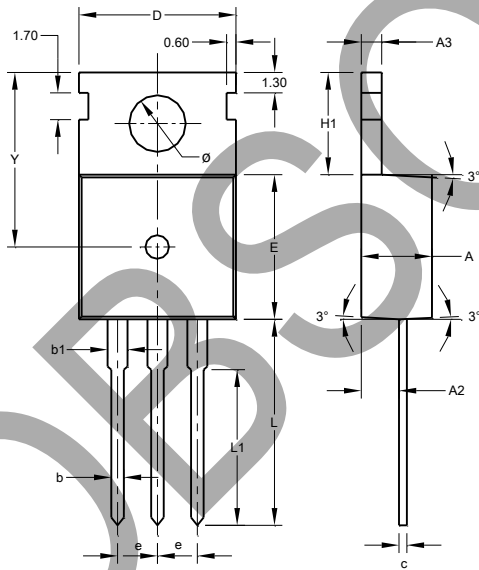


Package Outline Dimensions

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



| ITO220AB (TO220F-3) | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 4.300 | 4.900 | - |
| A2 | 2.520 | 2.920 | - |
| A3 | 2.350 | 2.900 | - |
| b | 0.550 | 0.900 | - |
| b1 | 1.000 | 1.400 | - |
| b2 | 1.100 | 1.500 | - |
| c | 0.450 | 0.600 | - |
| D | 9.70 | 10.30 | - |
| E | 14.70 | 16.00 | - |
| e | - | - | 2.540 |
| L | 12.50 | 13.50 | - |
| L1 | 2.790 | 4.500 | - |
| X | 6.90 | 7.10 | - |
| Y | 3.000 | 3.400 | - |
| Y1 | 3.370 | 3.900 | - |
| ∅ | 3.000 | 3.550 | - |
| All Dimensions in mm | | | |



| TO220AB Type C | | | |
|----------------------|--------|--------|--------|
| Dim | Min | Max | Typ |
| A | 4.4 | 4.6 | 4.500 |
| A2 | 2.2 | 2.5 | 2.400 |
| A3 | 1.2 | 1.4 | 1.300 |
| b | 0.700 | 0.900 | - |
| b1 | 1.17 | 1.39 | 1.270 |
| c | 0.400 | 0.600 | - |
| D | 9.800 | 10.200 | - |
| E | 9.000 | 9.400 | - |
| e | - | - | 2.54 |
| H1 | 6.300 | 6.700 | - |
| L | 12.600 | 13.600 | - |
| L1 | 9.600 | 10.600 | - |
| Y | - | - | 11.100 |
| ∅ | 3.560 | 3.640 | - |
| All Dimensions in mm | | | |

OBSOLETE - PART DISCONTINUED

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