# MBR1530CT - MBR1560CT

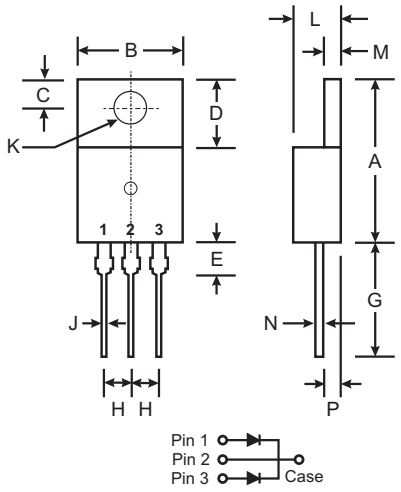
## 15A SCHOTTKY BARRIER RECTIFIER

## Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 3)**

## Mechanical Data

- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Bright Tin. Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 2.24 grams (approx.)




| TO-220AB | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 14.48 | 15.75 |
| **B** | 10.00 | 10.40 |
| **C** | 2.54 | 3.43 |
| **D** | 5.90 | 6.40 |
| **E** | 2.80 | 3.93 |
| **G** | 12.70 | 14.27 |
| **H** | 2.40 | 2.70 |
| **J** | 0.69 | 0.93 |
| **K** | 3.54 | 3.78 |
| **L** | 4.07 | 4.82 |
| **M** | 1.15 | 1.39 |
| **N** | 0.30 | 0.50 |
| **P** | 2.04 | 2.79 |
| **All Dimensions in mm** | | |

## Maximum Ratings and Electrical Characteristics @ $T_A$ = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | MBR 1530CT | MBR 1535CT | MBR 1540CT | MBR 1545CT | MBR 1550CT | MBR 1560CT | Unit |
|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 30 | 35 | 40 | 45 | 50 | 60 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | 24.5 | 28 | 31.5 | 35 | 42 | V |
| Average Rectified Output Current @ $T_C$ = 125°C (Note 1) | $I_O$ | 15 | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 150 | | | | | | A |
| Forward Voltage Drop @ $I_F$ = 15A, $T_C$ = 125°C<br>@ $I_F$ = 7.5A, $T_C$ = 125°C<br>@ $I_F$ = 15A, $T_C$ = 25°C | $V_{FM}$ | 0.72<br>0.57<br>0.84 | | | | 0.80<br>0.65<br>0.90 | | V |
| Peak Reverse Current @ $T_C$ = 25°C<br>at Rated DC Blocking Voltage @ $T_C$ = 125°C | $I_{RM}$ | 0.1<br>15 | | | | 1.0<br>50 | | mA |
| Typical Total Capacitance (Note 2) | $C_T$ | 300 | | | | | | pF |
| Typical Thermal Resistance Junction to Case (Note 1) | $R_{\theta Jc}$ | 1.7 | | | | | | °C/W |
| Voltage Rate of Change (Rated $V_R$) | dV/dt | 1000 | | | | 10,000 | | V/μs |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -65 to +150 | | | | | | °C |

Notes: 1. Thermal resistance junction to case mounted on heatsink.a
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7.*


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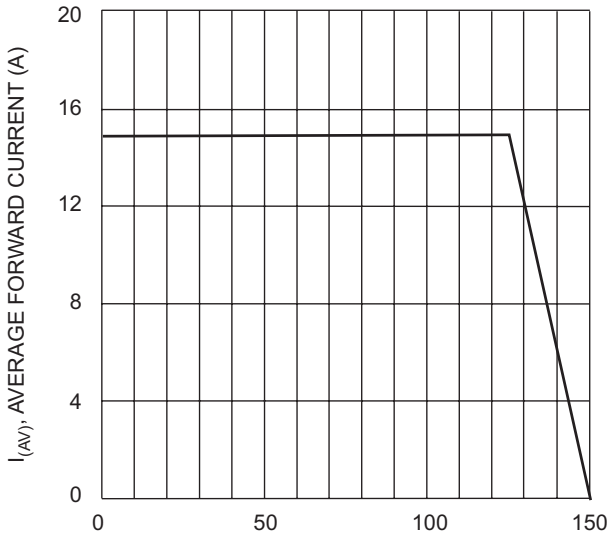



Fig. 1 Forward Current Derating Curve

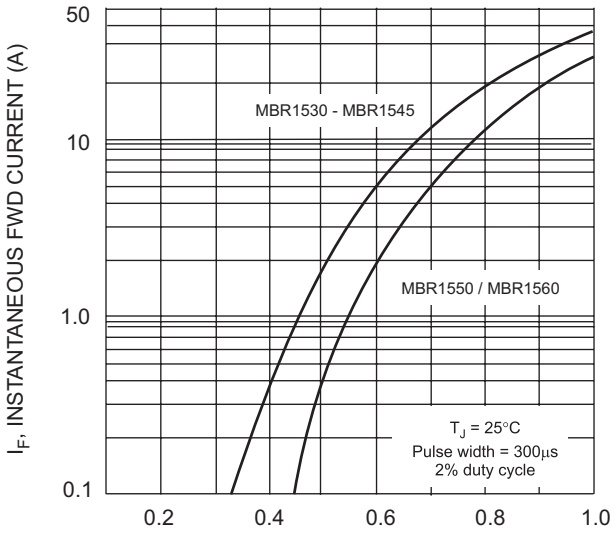



Fig. 2 Typical Forward Characteristics

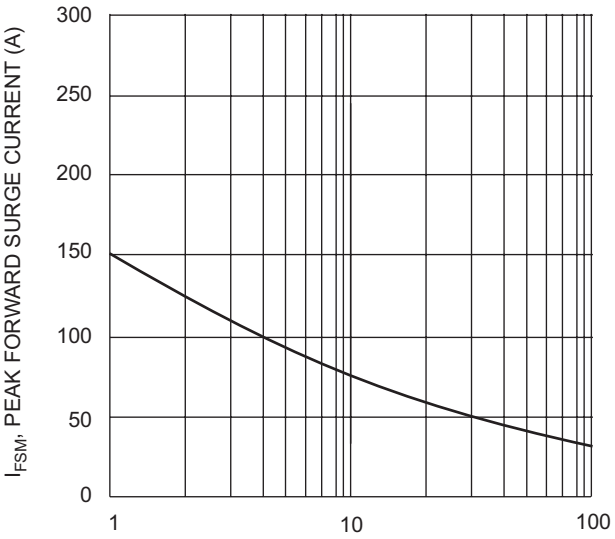



Fig. 3 Max Non-Repetitive Surge Current

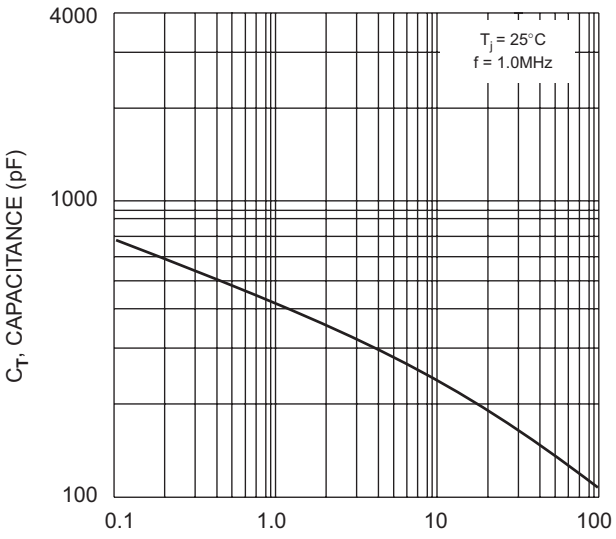



Fig. 4 Typical Total Capacitance (per element)

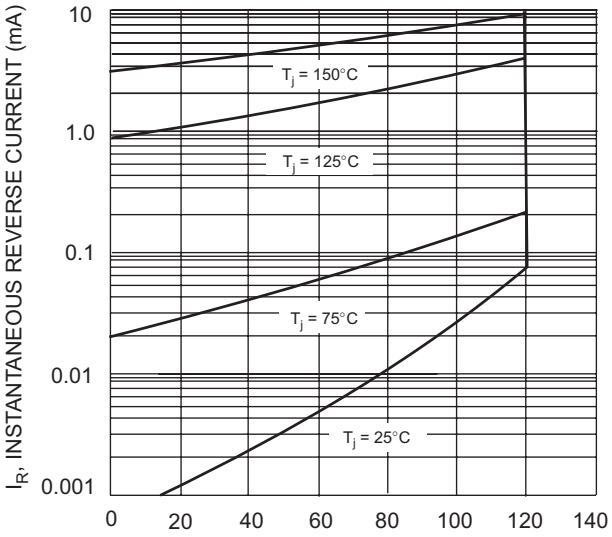



Fig. 5 Typical Reverse Characteristics

## Ordering Information (Note 4)

| Device | Packaging | Shipping |
|---|---|---|
| MBR15xxCT* | TO-220AB | 50/Tube |

* xx = Device type, e.g. MBR1545CT

Notes: 4. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.