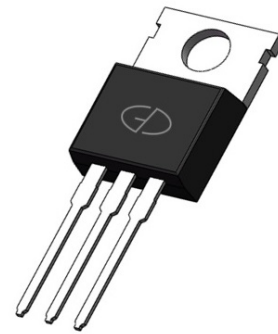


10A,45V Schottky Barrier Rectifier

Features

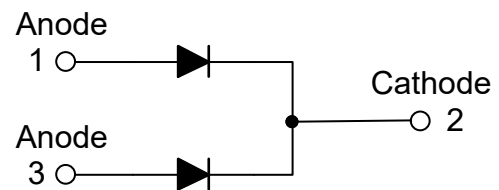
- Low forward voltage, low power loss
- Low leakage current
- High surge current
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-220AB

Applications

- SMPS
- Adapter
- Server Power



Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 50 units per plastic tube

Maximum Ratings & Electrical Characteristics (TA=25°C unless otherwise noted)

| Parameter | Symbol | MBR1045CT | Unit |
|--|--------|-------------|------|
| Maximum repetitive peak reverse voltage | VRRM | 45 | V |
| Maximum RMS voltage | VRMS | 32 | V |
| Maximum DC blocking voltage | VDC | 45 | V |
| Maximum average forward | IF(AV) | 10 | A |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode | IFSM | 120 | A |
| Operating junction temperature range | TJ | -55 to +150 | °C |
| Storage temperature range | TSTG | -55 to +150 | °C |

| Electrical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted) | | | | | |
|---|--------|---|------|------|---------------|
| Parameter | Symbol | Test Conditions | Typ | Max | Unit |
| Forward drop voltage (Note1) | V_F | $I_F=5\text{A}, T_J=25^{\circ}\text{C}$ | 0.54 | 0.58 | V |
| | | $I_F=5\text{A}, T_J=125^{\circ}\text{C}$ | - | 0.50 | |
| | | $I_F=10\text{A}, T_J=25^{\circ}\text{C}$ | - | - | |
| | | $I_F=10\text{A}, T_J=125^{\circ}\text{C}$ | - | - | |
| Reverse leakage current @VR (Note2) | I_R | $T_J=25^{\circ}\text{C}$ | - | 200 | μA |
| | | $T_J=100^{\circ}\text{C}$ | - | 15 | mA |

| Thermal-Mechanical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted) | | | |
|---|-----------------|------|-----------------------------|
| Parameter | Symbol | Typ | Unit |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 2.0 | $^{\circ}\text{C}/\text{W}$ |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 62.5 | $^{\circ}\text{C}/\text{W}$ |

Note:

1. Pulse test with $PW=0.3\text{ms}$, duty cycle=2%
2. Pulse test with $PW=30\text{ms}$

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

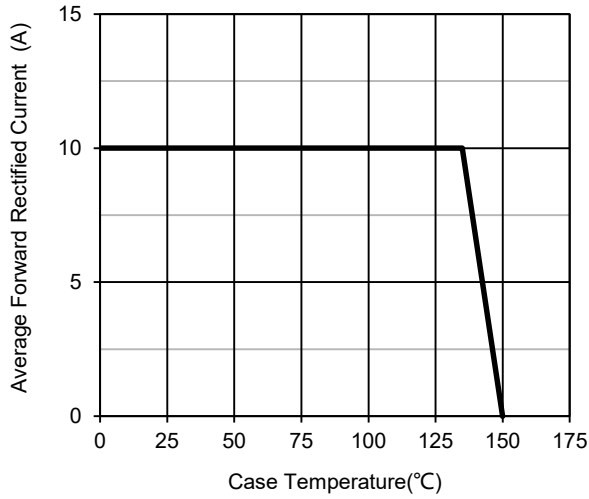


Fig.1 – Forward Current Derating Curve

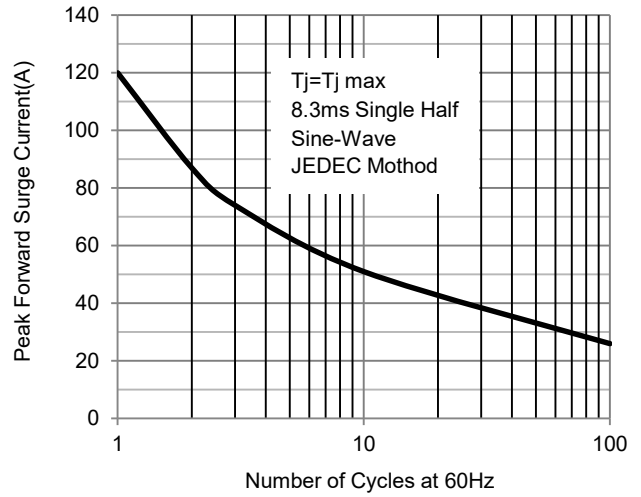


Fig.2 – Maximum Non-Repetitive Surge Current

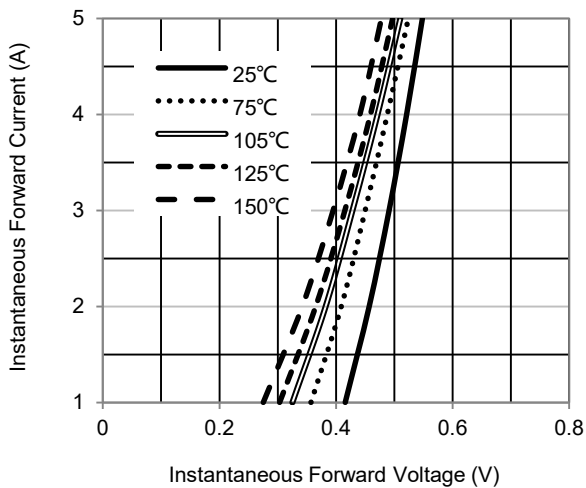


Fig.3 – Typical Forward Voltage Characteristics

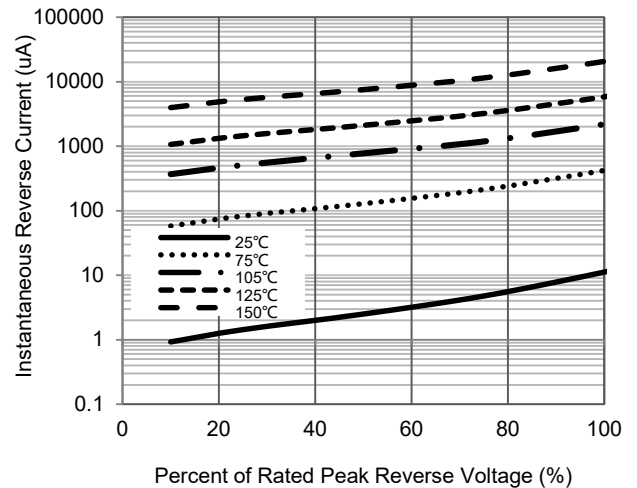


Fig.4 – Typical Reverse Current Characteristics

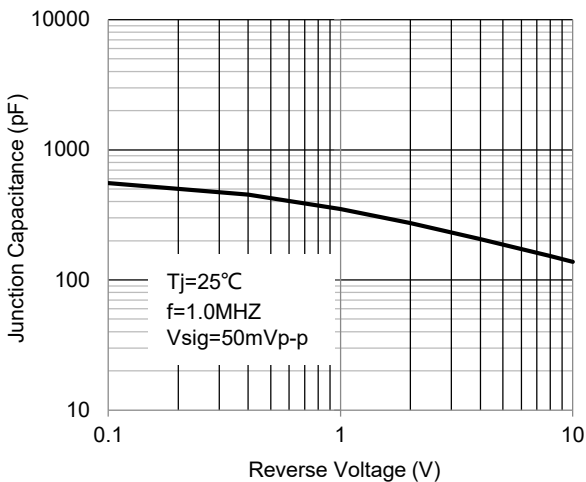
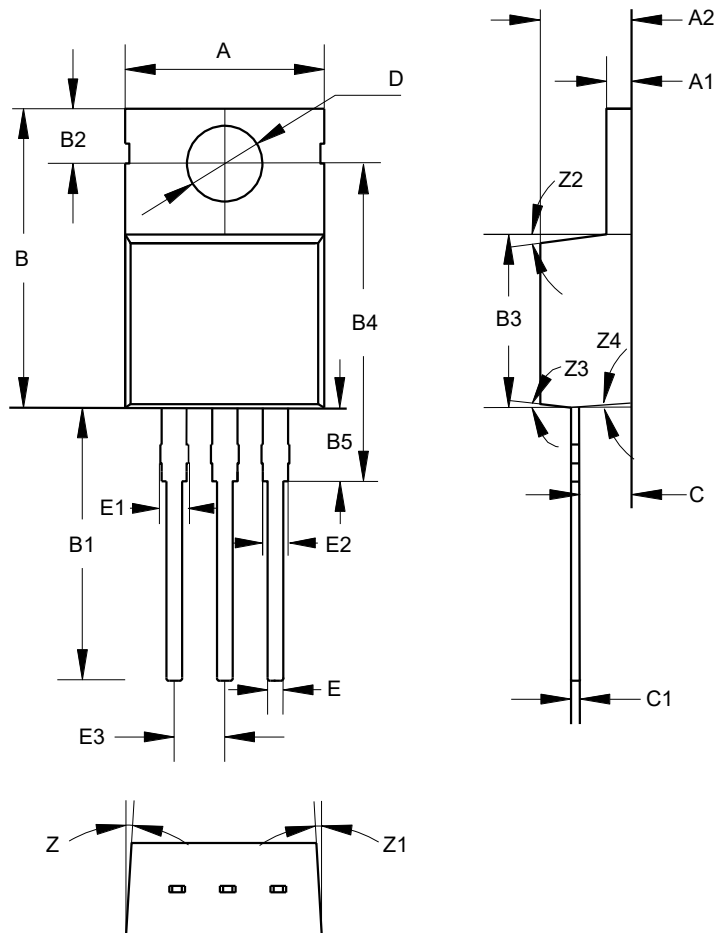


Fig.5 – Typical Junction Capacitance

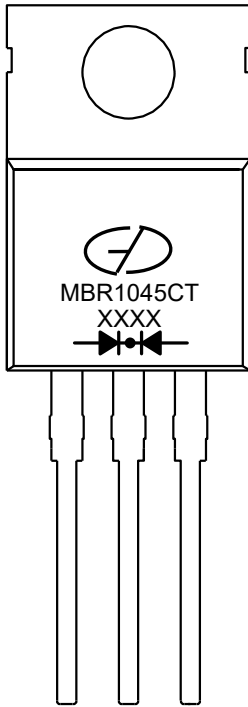
Package Outline Dimensions (Unit: millimeters)



TO-220AB



| TO-220AB | | | | | | | |
|----------|------|------|------|----|------|------|------|
| | Min. | Nom. | Max. | | Min. | Nom. | Max. |
| A | 9.8 | 10 | 10.2 | D | 3.7 | 3.8 | 3.9 |
| A1 | 1.17 | 1.27 | 1.37 | E | 0.68 | 0.78 | 0.88 |
| A2 | 4.5 | 4.6 | 4.7 | E1 | 1.2 | 1.4 | 1.6 |
| B | 14.5 | 15 | 15.5 | E2 | 1.17 | 1.27 | 1.37 |
| B1 | 13.2 | 13.7 | 14.2 | E3 | 2.44 | 2.54 | 2.64 |
| B2 | 2.65 | 2.75 | 2.85 | Z | | 3° | |
| B3 | 8.5 | 8.7 | 8.9 | Z1 | | 3° | |
| B4 | 15.5 | 16 | 16.5 | Z2 | | 7° | |
| B5 | 3.4 | 3.7 | 4.0 | Z3 | | 7° | |
| C | 2.3 | 2.6 | 2.9 | Z4 | | 1.5° | |
| C1 | 0.28 | 0.38 | 0.48 | | | | |

Marking Outline



1. Logo Mark: 
2. Part Name: MBR1045CT
3. Date Code: XXXX
4. Polarity : 

Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|---|
| Rev.A | 2013.12.18 | Released Datasheet |
| Rev.B | 2021.01.20 | Modify document format |
| Rev.C | 2022.04.29 | Modify ratings and characteristics curves |

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