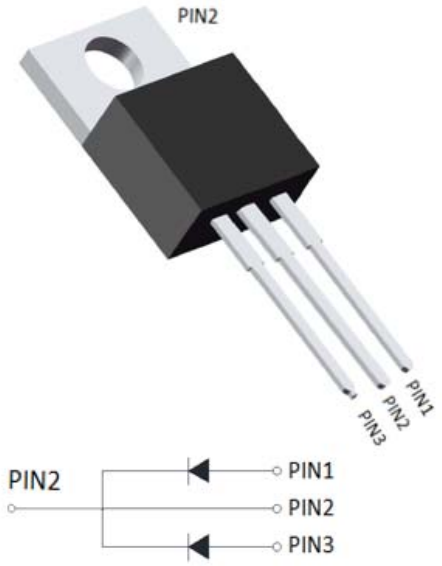
# Schottky Diodes




## Features

- High frequency operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- Solder dip 275 °C max. 7 s, per JESD 22-B106

## Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

## Mechanical Data

- **Package**: TO-220AB
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: As marked

## ■Maximum Ratings (Ta=25℃ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MBRL3045CT |
|---|---|---|---|
| Device marking code | | | MBRL3045CT |
| Repetitive Peak Reverse Voltage | VRRM | V | 45 |
| Average Rectified Output Current @60Hz sine wave, R-load, Ta（FIG 1） | IO | A | 30 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25℃ | IFSM | A | 250 |
| Current Squared Time @1ms≤t≤8.3ms Tj=25℃，rating of per diode | I2t | A2s | 259 |
| Storage Temperature | Tstg | ℃ | -55 ~ +150 |
| Junction Temperature | Tj | ℃ | -55 ~ +150 |

## ■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | MBRL3045CT |
|---|---|---|---|---|
| Maximum instantaneous forward voltage drop per diode | VFM | V | IFM=15.0A | 0.55 |
| Maximum DC reverse current at rated DC blocking voltage per diode | IRRM1 | mA | VRM=VRRM Ta=25℃ | 0.2 |
| | IRRM2 | | VRM=VRRM Ta=100℃ | 50 |

## ■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

| PARAMETER | | SYMBOL | UNIT | MBRL3045CT |
|---|---|---|---|---|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | ℃/W | 2.0 |

## ■Ordering Information (Example)

| PREFERED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|
| MBRL3045CT | Approximate 1.9 | 50 | 1000 | 5000 | Tube |

## ■Characteristics (Typical)

**FIG1:Io -Tc Curve**

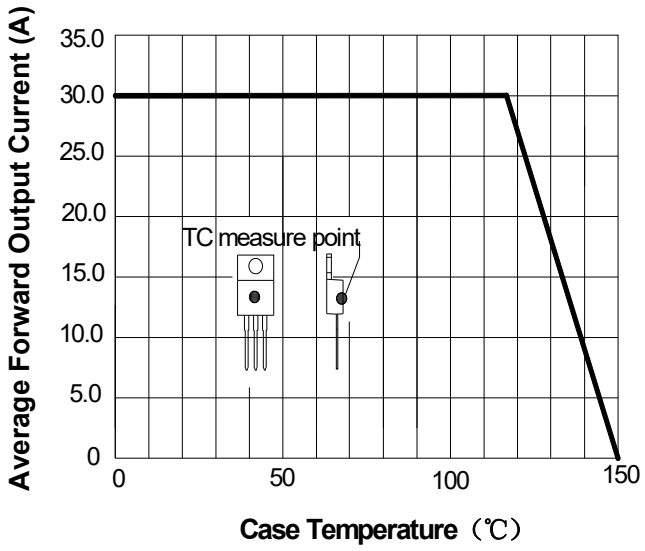



**FIG2:Surge Forward Current Capability**

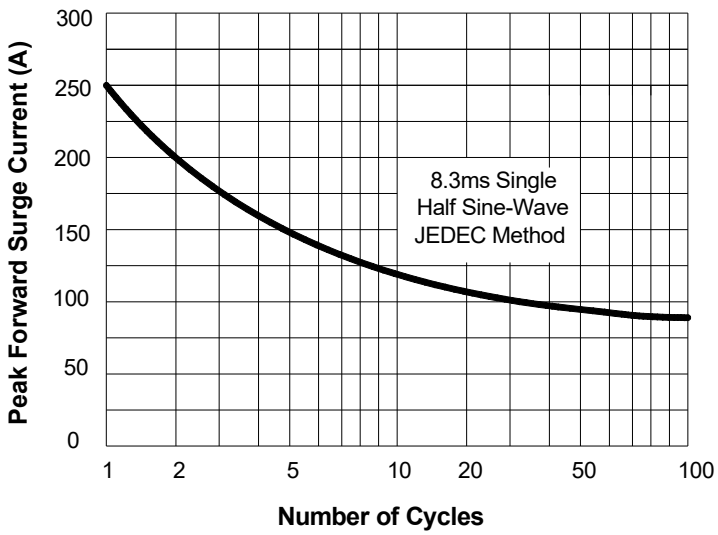



**FIG3: Forward Voltage**

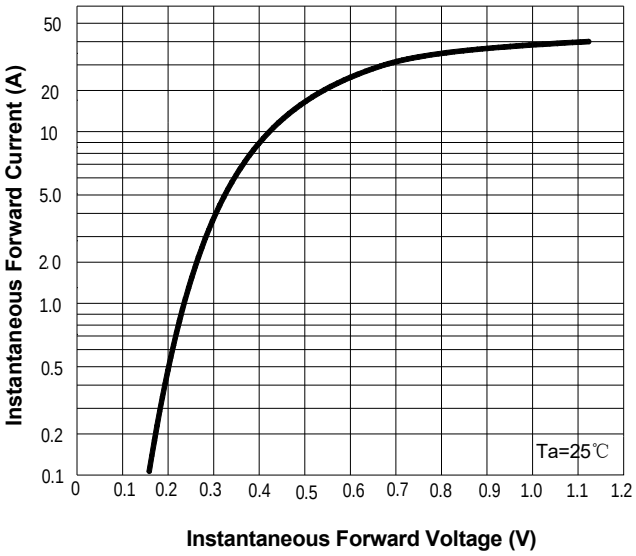
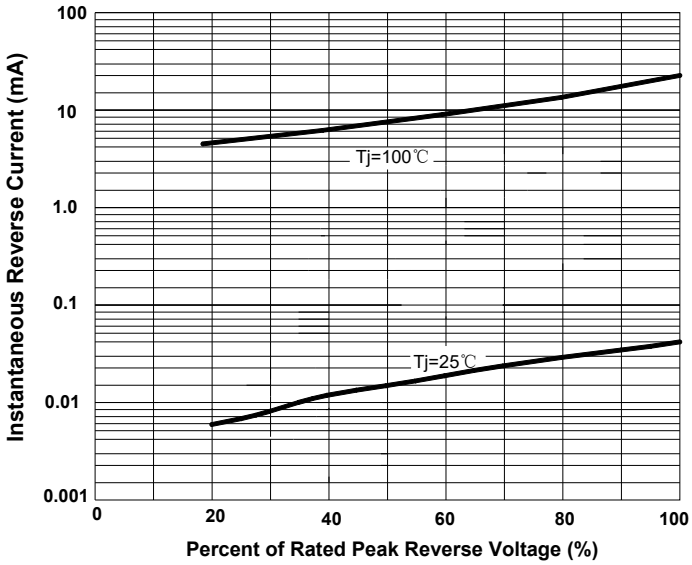
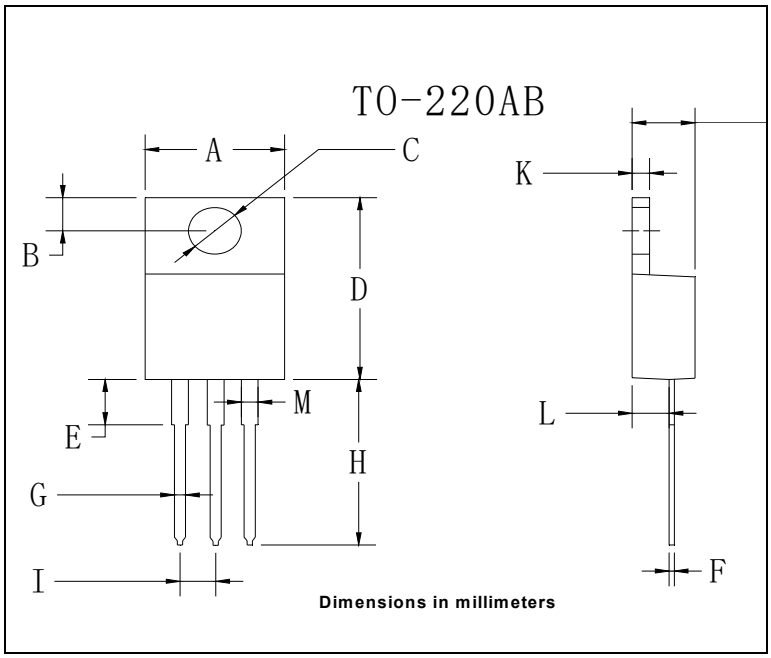



**FIG.4: Typical Reverse Characteristics**



## ■Outline Dimensions




| TO-220AB | | |
|---|---|---|
| Dim | Min | Max |
| A | 9.5 | 10.9 |
| B | 2.22 | 3.27 |
| C | 3.34 | 4.31 |
| D | 14.5 | 15.5 |
| E | 3.16 | 4.46 |
| F | 0.28 | 0.64 |
| G | 0.68 | 0.94 |
| H | 13.06 | 14.62 |
| I | 2.01 | 3.07 |
| J | 4.04 | 5.1 |
| K | 1.14 | 1.4 |
| L | 2.14 | 3.19 |
| M | 1.24 | 1.32 |

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