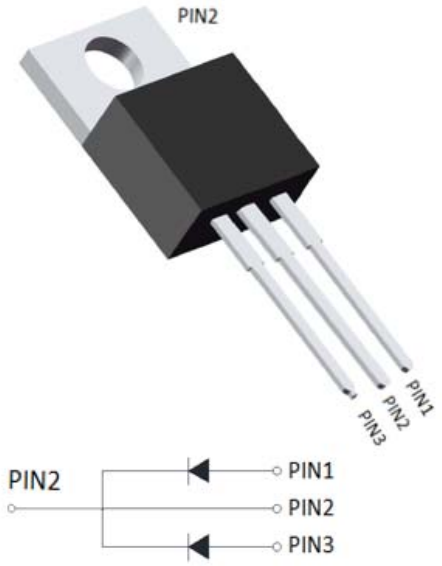
# Schottky Diodes




## 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 | MBR40200CT |
|---|---|---|---|
| Device marking code | | | MBR40200CT |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | 200 |
| Average Rectified Output Current @60Hz sine wave, R-load, Tc=103℃ | $I_O$ | A | 40 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25℃ | $I_{FSM}$ | A | 300 |
| Current Squared Time @1ms≤t≤8.3ms Tj=25℃， | $I^2t$ | $A^2s$ | 373 |
| Storage Temperature | $T_{stg}$ | ℃ | -55 ~ +175 |
| Junction Temperature | Tj | ℃ | -55 ~ +175 |

## ■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max |
|---|---|---|---|---|---|---|
| Peak Forward Voltage | $V_{FM}$ | V | $I_{FM}$=20.0A Tj=25℃ | 0.5 | 0.85 | 0.9 |
| | | | $I_{FM}$=20.0A Tj=125℃ | - | 0.74 | 0.78 |
| DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | mA | $V_{RM}$=$V_{RRM}$ Tj=25℃ | - | - | 0.1 |
| | $I_{RRM2}$ | | $V_{RM}$=$V_{RRM}$ Tj=125℃ | - | - | 2.0 |
| Junction capacitance | Cj | pF | 1MHz and Applied Reverse Voltage of 4.0 V.D.C | 200 | 320 | 550 |

Note1:Pulse test:300uS pulse widh,1% duty cycle

Note2:Pulse test:pulse widh 40mS

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

| PARAMETER | | SYMBOL | UNIT | MBR40200CT |
|---|---|---|---|---|
| Thermal Resistance | Between junction and ambient | $R_{\theta J-A}$ | ℃/W | 50.0 |
| | Between junction and case | $R_{\theta J-C}$ | ℃/W | 2.0 |

## ■Characteristics (Typical)

FIG1:Io -Tc Curve

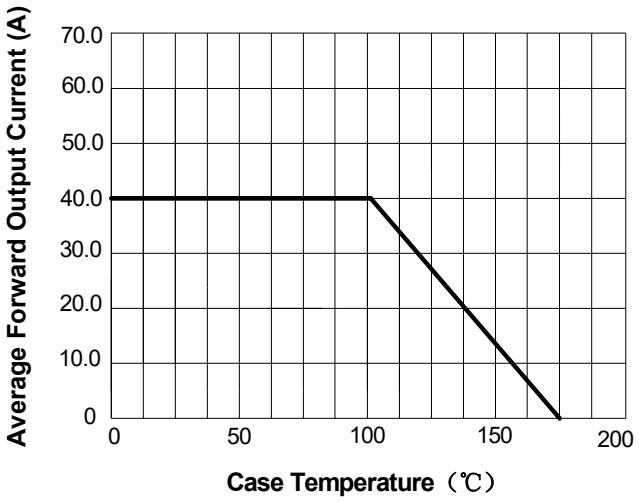



FIG2:Surge Forward Current Capability

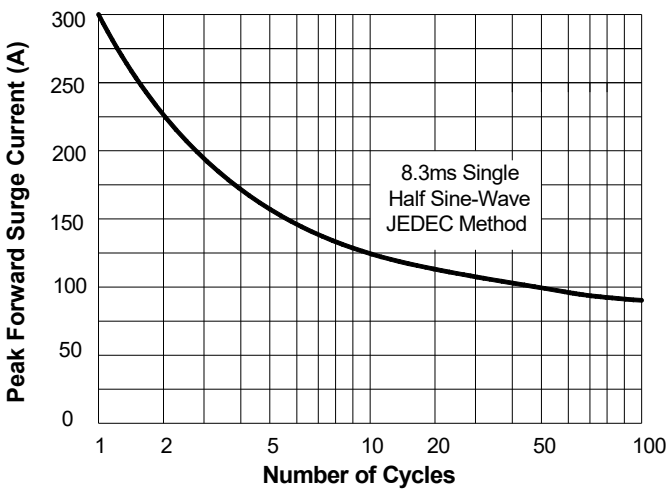



FIG3: Forward Voltage

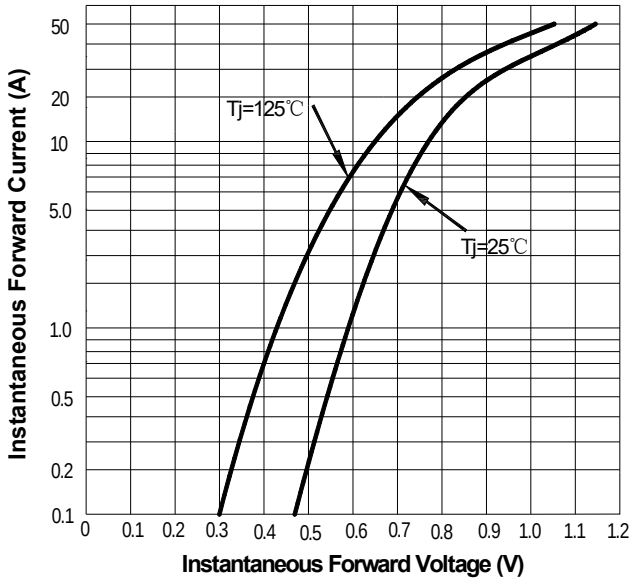
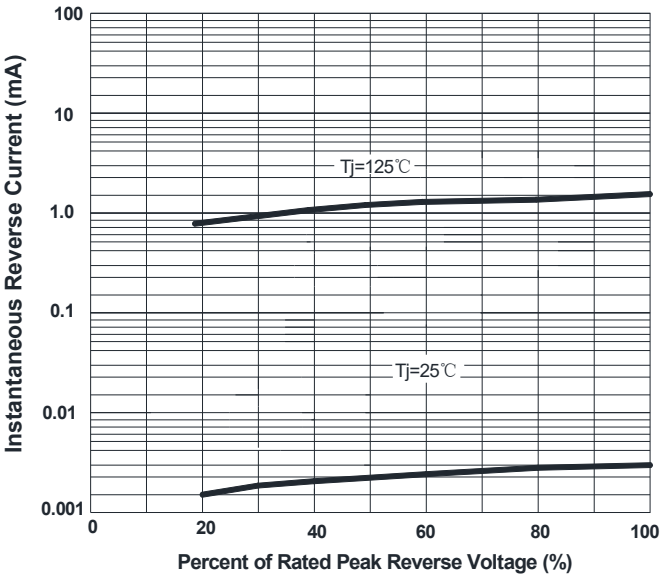
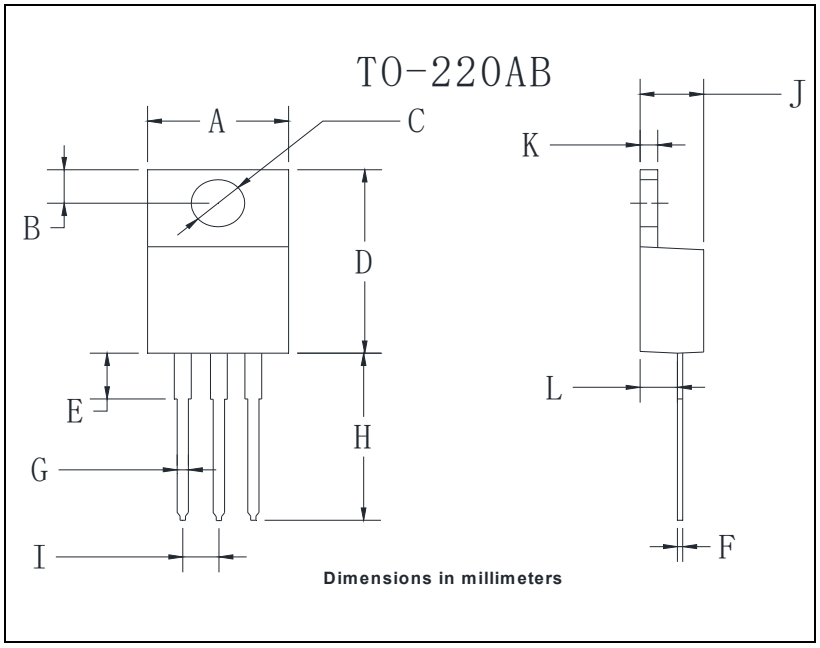



FIG.4: Instantaneous Reverse Characteristics



## ■Outline Dimensions




| TO-220AB | | |
|---|---|---|
| Dim | Min | Max |
| A | 9.95 | 10.35 |
| B | 2.55 | 2.95 |
| C | 3.8 | 4.0 |
| D | 14.95 | 15.25 |
| E | 3.75 | 4.25 |
| F | 0.26 | 0.5 |
| G | 0.68 | 0.94 |
| H | 13.4 | 13.9 |
| I | 2.35 | 2.65 |
| J | 4.38 | 4.78 |
| K | 1.14 | 1.4 |
| L | 2.37 | 2.79 |

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