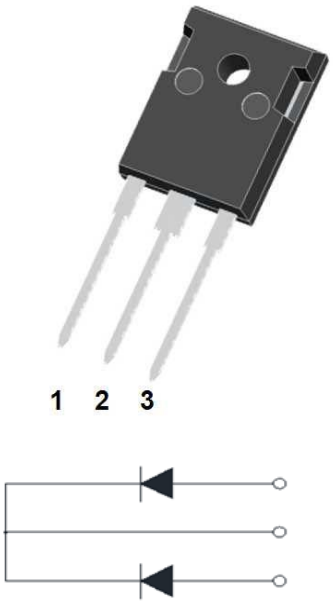
# Schottky Diodes




## 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-247AB
  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 (Tj=25℃ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MBR3045PT |
|---|---|---|---|
| Device marking code | | | MBR3045PT |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | 45 |
| Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1) | $I_O$ | A | 30 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Tj=25℃ | $I_{FSM}$ | A | 250 |
| Surge(Non-repetitive)Forward Current @1ms, square wave, 1 time, Tj=25℃ | | | 500 |
| Current Squared Time @1ms≤t≤8.3ms Tj=25℃, | $I^2t$ | $A^2s$ | 260 |
| Storage Temperature | $T_{stg}$ | ℃ | -55 ~ +150 |
| Junction Temperature | Tj | ℃ | -55 ~ +150 |

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

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max |
|---|---|---|---|---|---|---|
| Peak Forward Voltage | $V_{FM}$ | V | $I_{FM}$=15.0A Tj=25℃ | 0.4 | 0.55 | 0.60 |
| | | | $I_{FM}$=15.0A Tj=125℃ | - | 0.51 | 0.56 |
| Maximum DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | mA | $V_{RM}$=$V_{RRM}$ Tj=25℃ | - | - | 0.2 |
| | $I_{RRM2}$ | | $V_{RM}$=$V_{RRM}$ Tj=125℃ | - | - | 50 |

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 | MBR3045PT |
|---|---|---|---|---|
| Thermal Resistance | Between junction and ambient | $R_{\theta J-A}$ | ℃/W | 50.0 |
| | Between junction and case | $R_{\theta J-C}$ | ℃/W | 1.0 |

## ■Characteristics (Typical)

FIG1:Io -Tc Curve

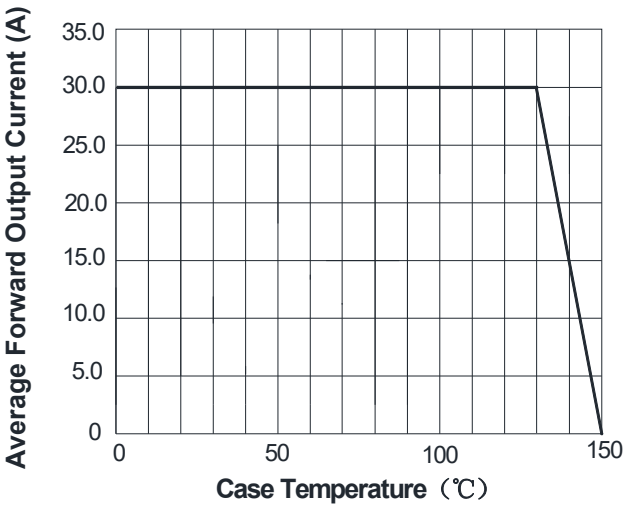



FIG2:Surge Forward Current Capability

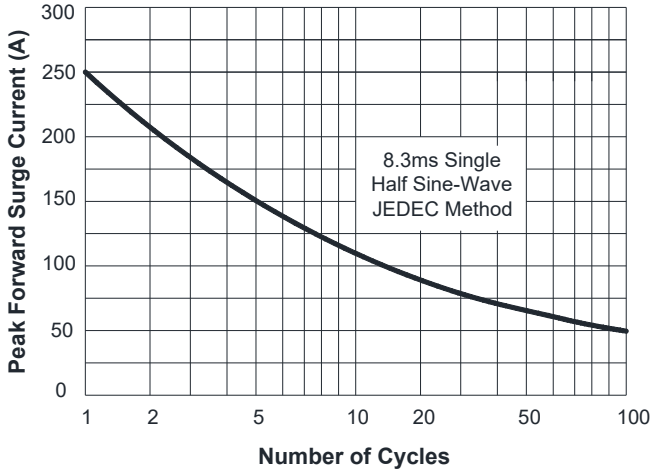



FIG3: Forward Voltage

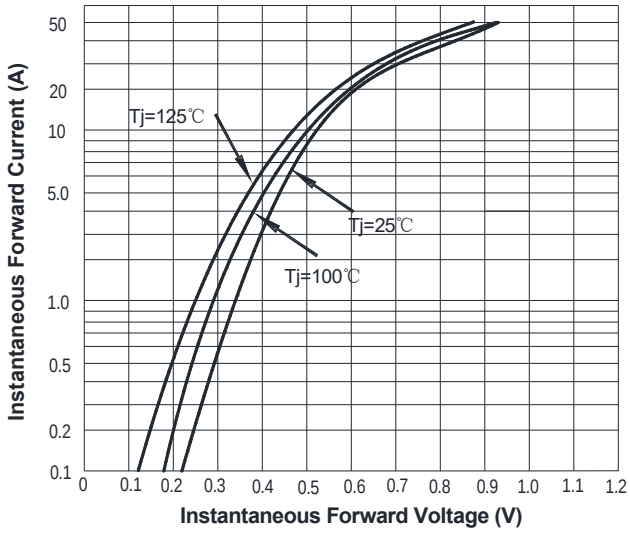
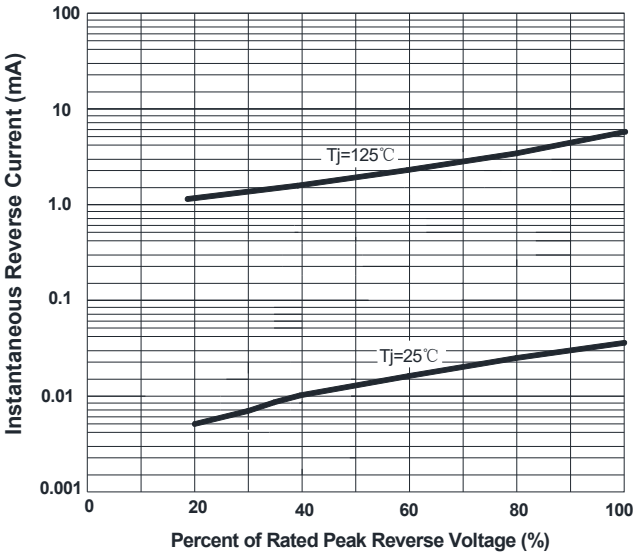
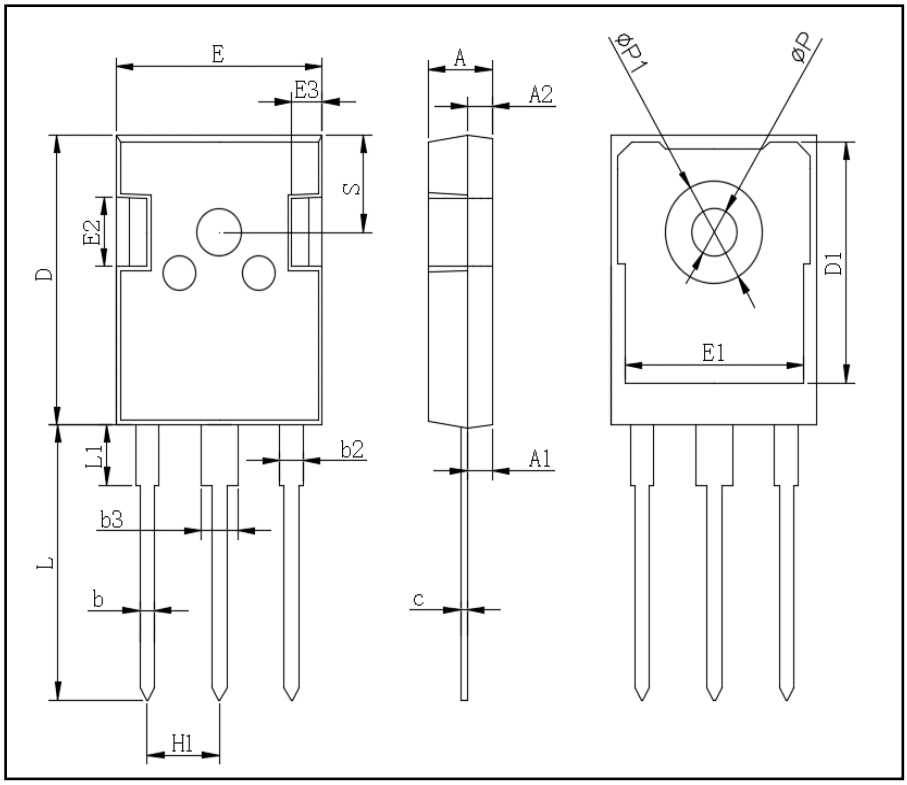



FIG.4: Typical Reverse Characteristics



## ■Outline Dimensions




| TO-247AB | | |
|---|---|---|
| Dim | Min | Max |
| A | 4.80 | 5.20 |
| A1 | 2.21 | 2.61 |
| A2 | 1.85 | 2.15 |
| b | 1.0 | 1.4 |
| b2 | 1.91 | 2.21 |
| C | 0.5 | 0.7 |
| D | 20.70 | 21.30 |
| D1 | 16.25 | 16.85 |
| E | 15.50 | 16.10 |
| E1 | 13.0 | 13.6 |
| E2 | 4.80 | 5.20 |
| E3 | 2.30 | 2.70 |
| L | 19.62 | 20.22 |
| L1 | - | 4.30 |
| ΦP | 3.40 | 3.80 |
| ΦP1 | - | 7.30 |
| S | 6.15TYP | |
| H1 | 5.44TYP | |
| b3 | 2.80 | 3.20 |

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