

### 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, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### MAXIMUM RATINGS (Ta=25°C Unless otherwise specified)

| PARAMETER   | SYMBOL    | UNIT             | MBR30150PT |
|---|-----------|------------------|------------|
| Device marking code   |           |                  | MBR30150PT |
| Repetitive Peak Reverse Voltage   | $V_{RRM}$ | V                | 150        |
| Average Rectified Output Current @60Hz sine wave, R-load, Tc=150°C          | $I_o$     | A                | 30         |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25°C | $I_{FSM}$ | A                | 250        |
| Current Squared Time @1ms≤t≤8.3ms Tj=25°C                                   | $I^2t$    | A <sup>2</sup> s | 260        |
| Storage Temperature   | $T_{stg}$ | °C               | -55 ~ +175 |
| Junction Temperature  | $T_j$     | °C               | -55 ~ +175 |

### ELECTRICAL CHARACTERISTICS (Ta=25°C Unless otherwise specified)

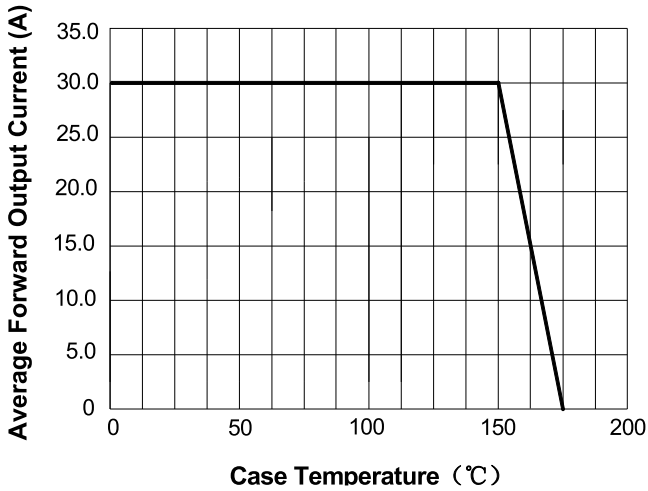
| PARAMETER   | SYMBOL     | UNIT | TEST CONDITIONS                               | Min | Typ  | Max  |
|---|------------|------|---|-----|------|------|
| Peak Forward Voltage                                      | $V_{FM}$   | V    | $I_{FM}=15.0A$<br>$T_j=25^\circ C$            | 0.5 | 0.81 | 0.85 |
|   |            |      | $I_{FM}=15.0A$<br>$T_j=125^\circ C$           | -   | 0.67 | 0.72 |
| DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | mA   | $V_{RM}=V_{RRM}$<br>$T_j=25^\circ C$          | -   | -    | 0.1  |
|   | $I_{RRM2}$ |      | $V_{RM}=V_{RRM}$<br>$T_j=125^\circ C$         | -   | -    | 20   |
| Junction capacitance                                      | $C_j$      | pF   | 1MHz and Applied Reverse Voltage of 4.0 V.D.C | 150 | 310  | 550  |

### THERMAL CHARACTERISTICS (Ta=25°C Unless otherwise specified)

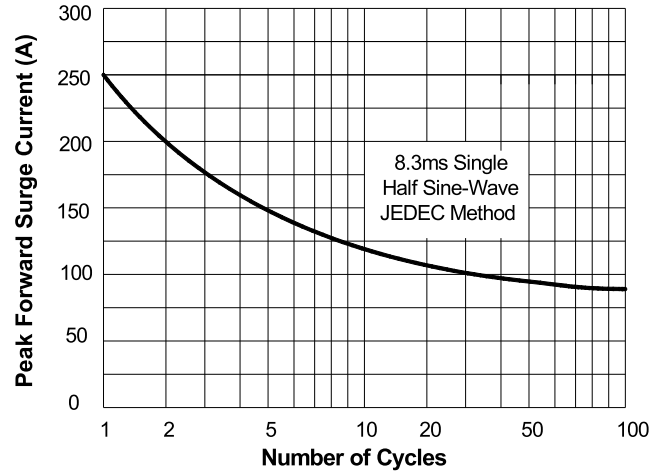
| PARAMETER          | SYMBOL                       | UNIT             | MBR30150PT |      |
|--------------------|------------------------------|------------------|------------|------|
| Thermal Resistance | Between junction and ambient | $R_{\theta J-A}$ | °C/W       | 50.0 |
|                    | Between junction and case    | $R_{\theta J-C}$ | °C/W       | 1.0  |

■ **CHARACTERISTICS (TYPICAL)**

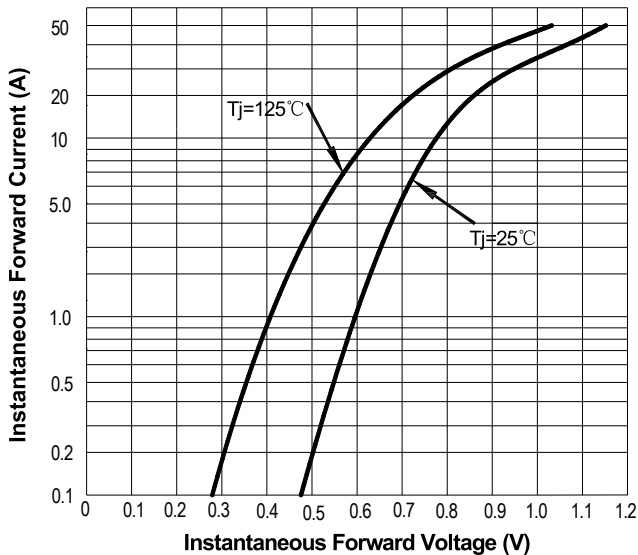
**FIG1:  $I_o$  -Tc Curve**



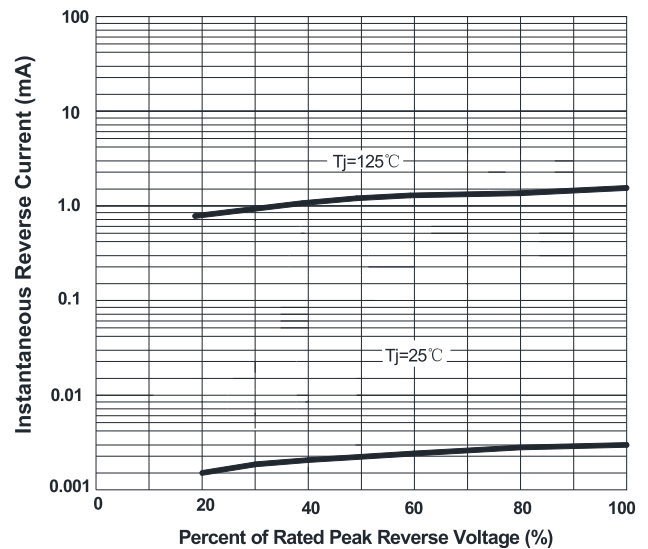
**FIG2: Surge Forward Current Capability**

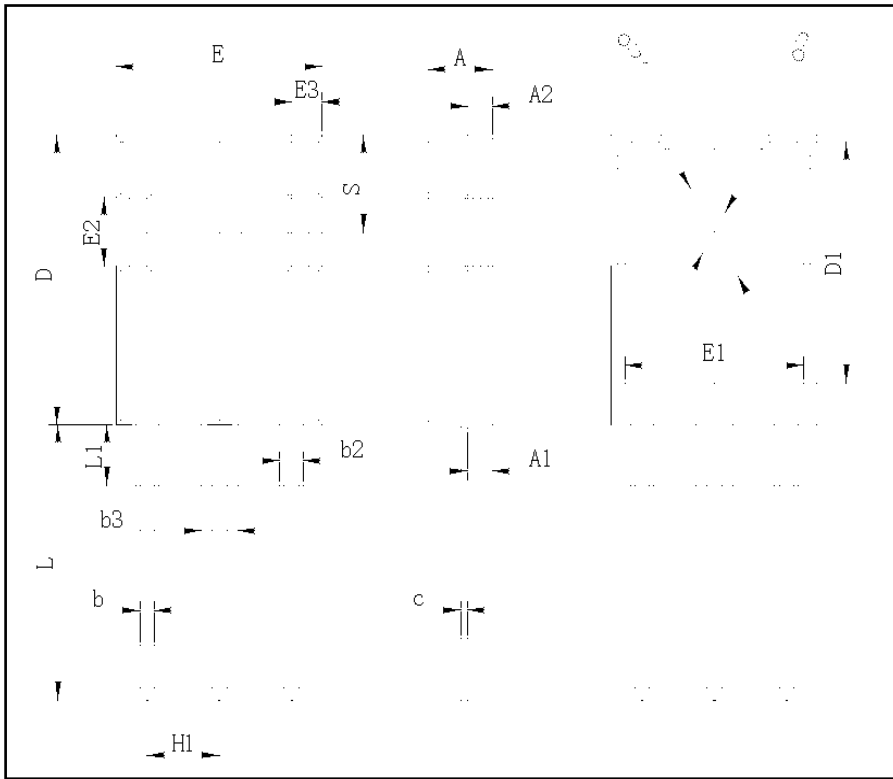


**FIG3: Forward Voltage**



**FIG.4: Instantaneous Reverse Characteristics**





| 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  |