

■ **FEATURES**

- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

■ **TYPICAL APPLICATIONS**

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

■ **MECHANICAL DATA**

- **Package:** TO-252
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** ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MBR10100CDS | MBR10150CDS | MBR10200CDS |
|---|-----------|------------------|-------------|-------------|-------------|
| Device marking code | | | MBR10100CDS | MBR10150CDS | MBR10200CDS |
| Repetitive Peak Reverse Voltage | VRRM | V | 100 | 150 | 200 |
| Average Rectified Output Current @60Hz sine wave, R-load, $T_a=25^\circ\text{C}$ | I_O | A | 10 | | |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, $T_a=25^\circ\text{C}$ | IFSM | A | 100 | | |
| Current Squared Time @1ms<t<8.3ms $T_j=25^\circ\text{C}$, | I^2t | A ² s | 41 | | |
| Storage Temperature | T_{stg} | $^\circ\text{C}$ | -55 ~ +175 | | |
| Junction Temperature | T_j | $^\circ\text{C}$ | -55 ~ +175 | | |

■ **ELECTRICAL CHARACTERISTICS** ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | MBR10100CDS | MBR10150CDS | MBR10200CDS |
|---|-------------------|------|--|-------------|-------------|-------------|
| Maximum instantaneous forward voltage drop per diode | VFM | V | IFM=5.0A | 0.83 | 0.88 | 0.93 |
| Maximum DC reverse current at rated DC blocking voltage per diode | I _{RRM1} | mA | V _{RM} =V _{RRM} $T_a=25^\circ\text{C}$ | 0.1 | | |
| | I _{RRM2} | | V _{RM} =V _{RRM} $T_a=125^\circ\text{C}$ | 20 | | |

■ **THERMAL CHARACTERISTICS** ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MBR10100CDS | MBR10150CDS | MBR10200CDS |
|--|------------------|--------------------|-------------|-------------|-------------|
| Thermal Resistance Between junction and case | $R_{\theta j-c}$ | $^\circ\text{C/W}$ | 5.0 | | |

■ **PACKAGING INFORMATION**

| PREFERRED P/N | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|------------------------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| MBR10100CDS THRU MBR10200CDS | Approximate 0.32 | 2500 | 2500 | 25000 | Reel |

■ **CHARACTERISTICS (TYPICAL)**

FIG1: I_o -T_c Curve

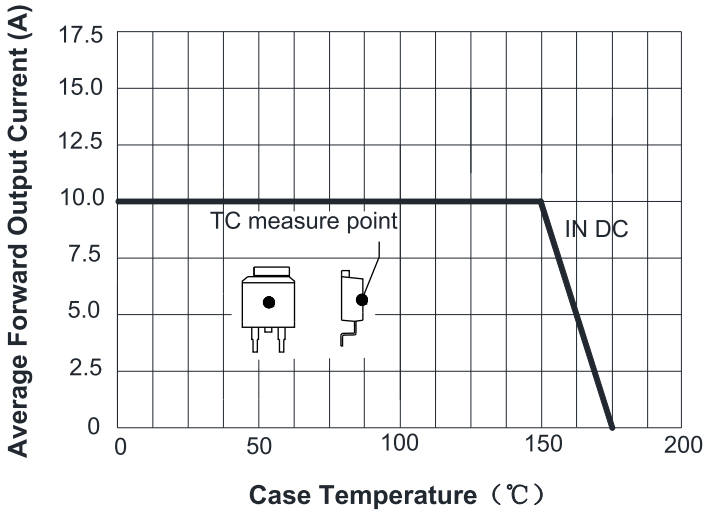


FIG2: Surge Forward Current Capability

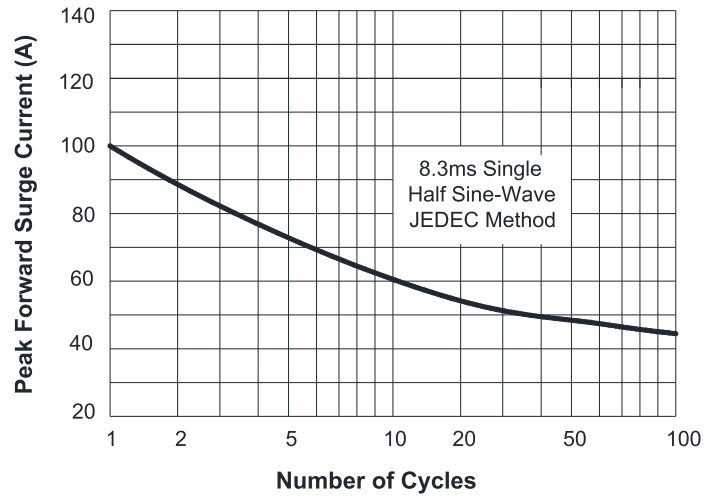


FIG3: Forward Voltage

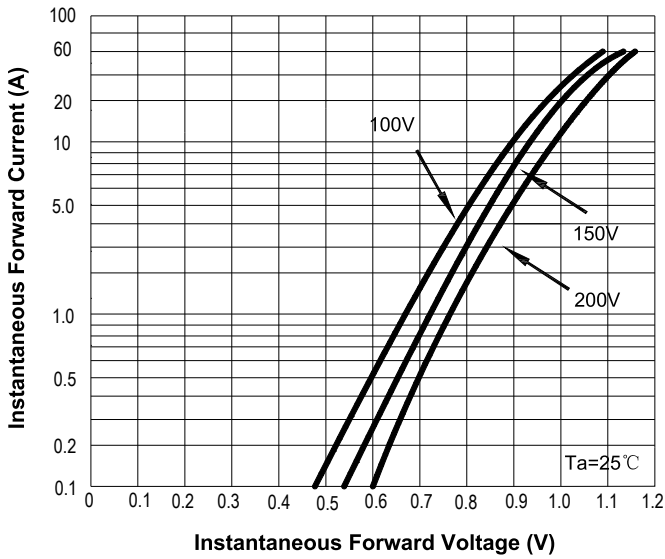
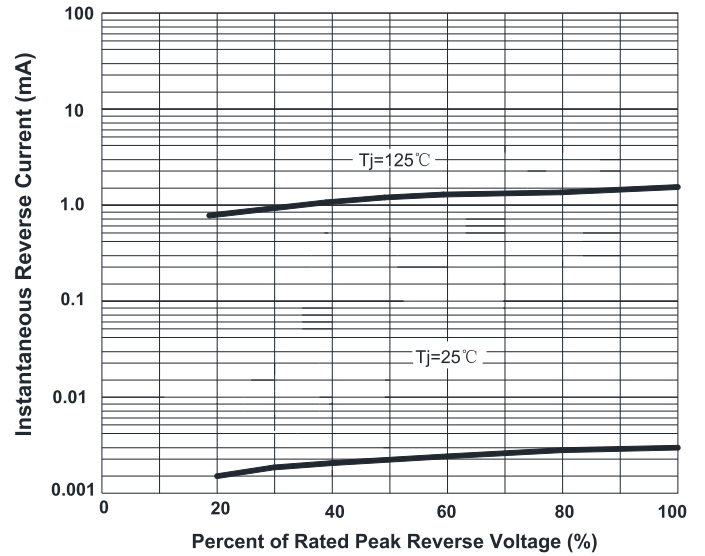
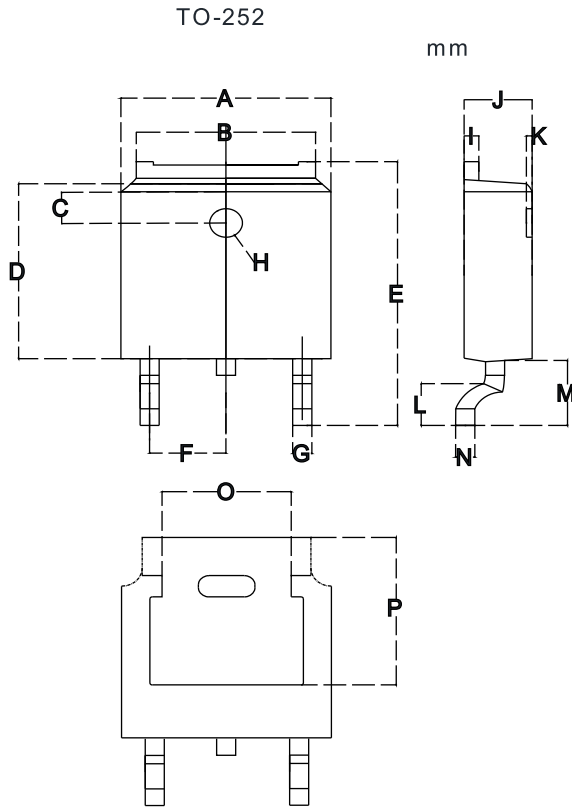


FIG4: Instantaneous Reverse Characteristics

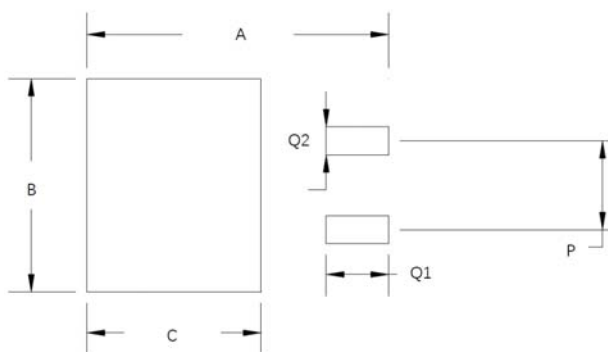


■ **OUTLINE DIMENSIONS**



| TO-252 | | |
|--------|--------|--------|
| Dim | Min | Max |
| A | 6.500 | 6.700 |
| B | 5.100 | 5.460 |
| C | 1.400 | 1.800 |
| D | 6.000 | 6.200 |
| E | 10.000 | 10.400 |
| F | 2.166 | 2.366 |
| G | 0.660 | 0.860 |
| H | Φ1.050 | Φ1.350 |
| I | 0.460 | 0.580 |
| J | 2.200 | 2.400 |
| K | 0 | 0.300 |
| L | 0.890 | 2.290 |
| M | 2.730 | 3.080 |
| N | 0.430 | 0.580 |
| O | 4.2 | 4.95 |
| P | 5.15 | 5.45 |

■ **SUGGESTED PAD LAYOUT**



| Dim | Millimeters |
|-----|-------------|
| A | 11.4 |
| B | 6.74 |
| C | 6.23 |
| P | 4.56 |
| Q1 | 2.28 |
| Q2 | 1.52 |