## Features

- Guard Ring for Transient Protection
- Low Power Loss High Efficiency
- High Surge Capacity, High Current Capability
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability RatingHalogen Free Available Upon Request By Adding Suffix "-HF"

# 10 Amp Schottky Barrier Rectifier 20 to 100 Volts

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +125°C(MBR1020~1045)
- Operating Junction Temperature Range: -55°C to +150°C(MBR1060~10100)
- Storage Temperature Range: -55ºC to +150ºC
- Typical Thermal Resistance: 2.5°C/W Junction to Case
- Mounting Torgue: 5 in-lbs Maximum

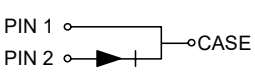
| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|---|---|---|---|---|
| MBR1020 | MBR1020 | 20V | 14V | 20V |
| MBR1030 | MBR1030 | 30V | 21V | 30V |
| MBR1035 | MBR1035 | 35V | 24.5V | 35V |
| MBR1040 | MBR1040 | 40V | 28V | 40V |
| MBR1045 | MBR1045 | 45V | 31.5V | 45V |
| MBR1060 | MBR1060 | 60V | 42V | 60V |
| MBR1080 | MBR1080 | 80V | 56V | 80V |
| MBR10100 | MBR10100 | 100V | 70V | 100V |

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

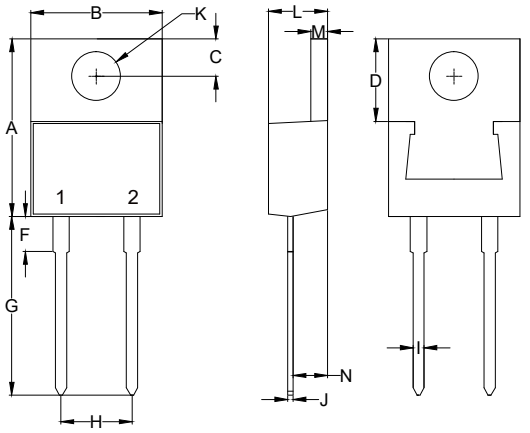
| | | | |
|---|---|---|---|
| Average Forward Current | $I_{F(AV)}$ | 10A | See Fig.1 |
| Peak Forward Surge Current | $I_{FSM}$ | 150A | 8.3ms,Half Sine |
| Maximum Forward Voltage Drop Per Element | | | |
| MBR1020~MBR1045 | $V_F$ | 0.65V | $I_{FM}$=10A |
| MBR1060 | | 0.75V | $I_{FM}$=10A |
| MBR1080~MBR10100 | | 0.84V | $I_{FM}$=10A |
| MBR1060 | | 0.65V | $I_{FM}$=10A, $T_J$=125ºC |
| MBR1020~MBR1045 | | 0.84V | $I_{FM}$=20A |
| MBR1060 | | 0.95V | $I_{FM}$=20A |
| | | 0.80V | $I_{FM}$=20A, $T_J$=125ºC |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | $I_R$ | 0.1mA | $T_J$=25ºC |

Note :1. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

**Internal Structure**




TO-220AC




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | 0.578 | 0.603 | 14.68 | 15.32 | |
| B | 0.380 | 0.420 | 9.65 | 10.67 | |
| C | 0.100 | 0.135 | 2.54 | 3.43 | |
| D | 0.230 | 0.270 | 5.84 | 6.86 | |
| F | 0.147 | 0.167 | 3.74 | 4.24 | |
| G | 0.500 | 0.580 | 12.70 | 14.73 | |
| H | 0.190 | 0.210 | 4.83 | 5.33 | |
| I | 0.020 | 0.045 | 0.51 | 1.14 | |
| J | 0.012 | 0.025 | 0.30 | 0.64 | |
| K | 0.139 | 0.161 | 3.53 | 4.09 | Φ |
| L | 0.140 | 0.190 | 3.56 | 4.83 | |
| M | 0.045 | 0.055 | 1.14 | 1.40 | |
| N | 0.080 | 0.115 | 2.03 | 2.92 | |

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

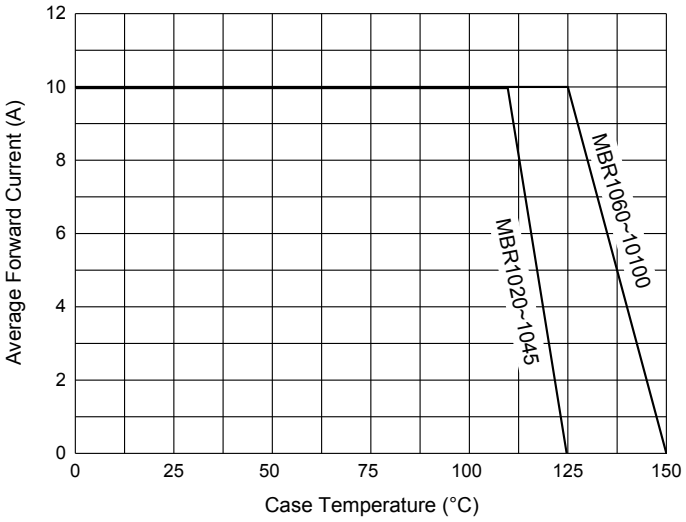



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

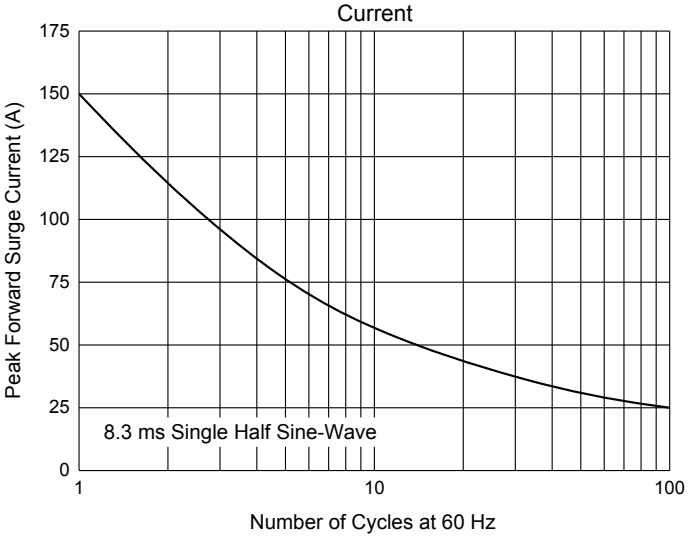



Fig. 3 - Typical Instantaneous Forward Characteristics

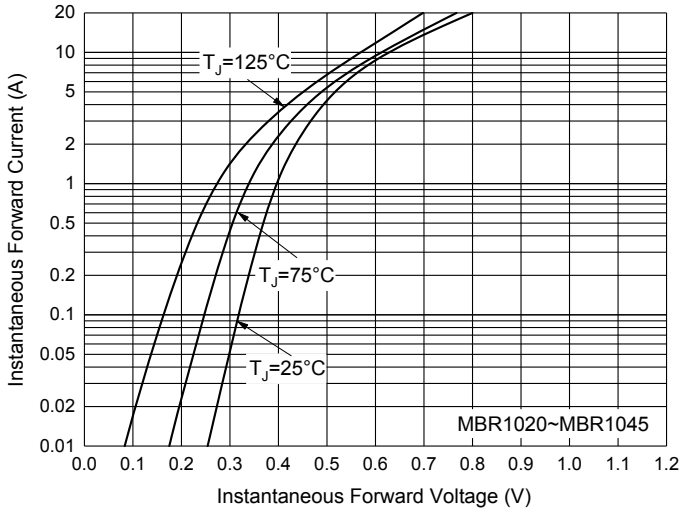



Fig. 4 - Typical Instantaneous Forward Characteristics

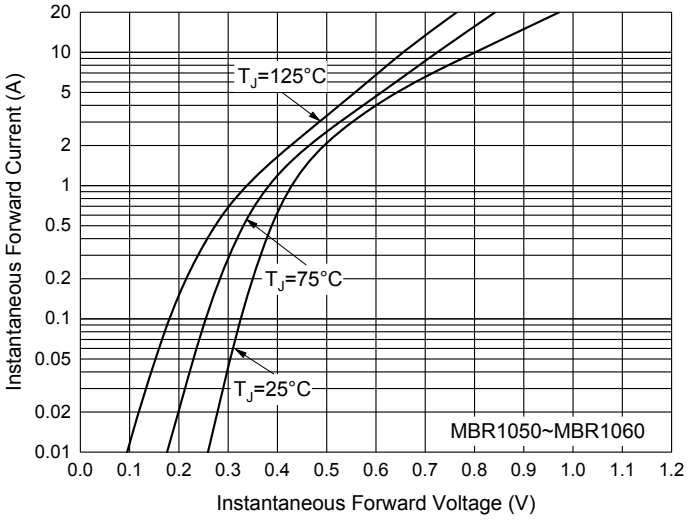



Fig. 5 - Typical Instantaneous Forward Characteristics

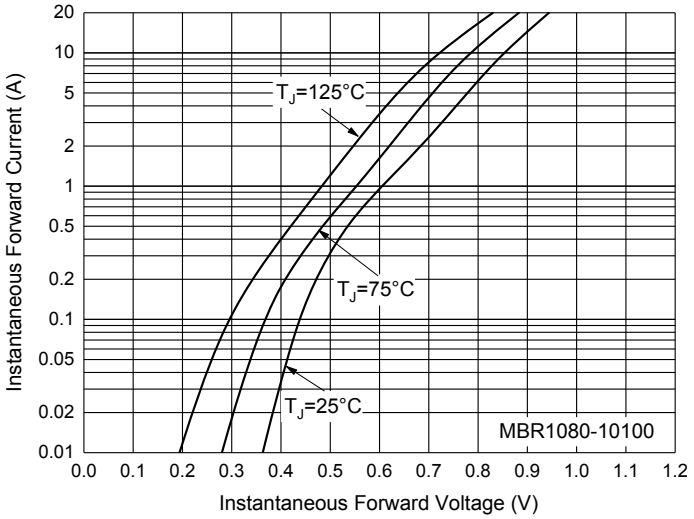
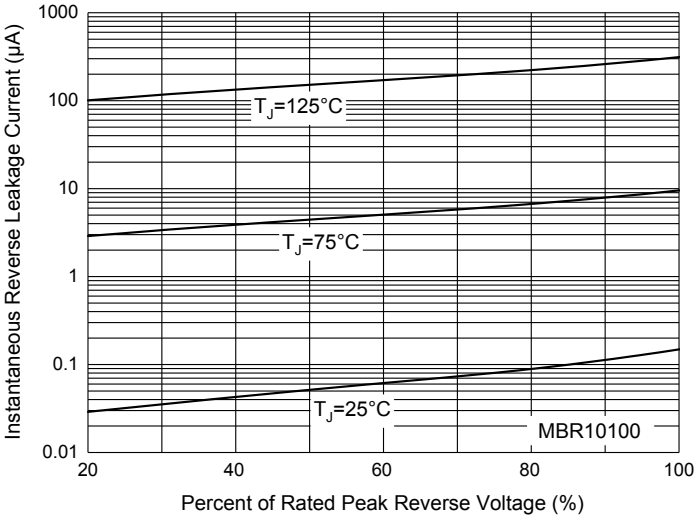



Fig. 6 - Typical Reverse Leakage Characteristics



## Ordering Information

| Device | Packing |
|---|---|
| Part Number-BP | Bulk:50pcs/Tube,1Kpcs/Box,5Kpcs/Carton |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF


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