

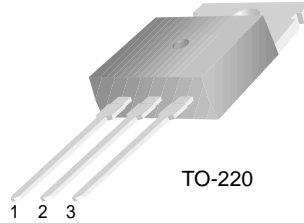
MBRP2045N

Features

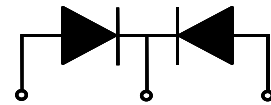
- Low forward voltage drop
- High frequency properties and switching speed
- Guard ring for over-voltage protection

Applications

- Switched mode power supply
- Freewheeling diodes



TO-220



1. Anode 2.Cathode 3. Anode

SCHOTTKY BARRIER RECTIFIER

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|---|-------------|------------------|
| V_{RRM} | Maximum Repetitive Reverse Voltage | 45 | V |
| V_R | Maximum DC Reverse Voltage | 45 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current @ $T_C = 105^\circ\text{C}$ | 20 | A |
| I_{FSM} | Non-repetitive Peak Surge Current (per diode) 60Hz Single Half-Sine Wave | 150 | A |
| T_J, T_{STG} | Operating Junction and Storage Temperature | -65 to +150 | $^\circ\text{C}$ |

Thermal Characteristics

| Symbol | Parameter | Value | Units |
|-----------------|--|-------|---------------------------|
| $R_{\theta JC}$ | Maximum Thermal Resistance, Junction to Case (per diode) | 2.5 | $^\circ\text{C}/\text{W}$ |

Electrical Characteristics (per diode)

| Symbol | Parameter | Value | Units | |
|------------|---|---------------------------|-------|----|
| V_{FM}^* | Maximum Instantaneous Forward Voltage $I_F = 10\text{A}$ $I_F = 10\text{A}$ $I_F = 20\text{A}$ $I_F = 20\text{A}$ | $T_C = 25^\circ\text{C}$ | 0.65 | V |
| | | $T_C = 125^\circ\text{C}$ | 0.57 | |
| | | $T_C = 25^\circ\text{C}$ | 0.80 | |
| | | $T_C = 125^\circ\text{C}$ | 0.65 | |
| I_{RM}^* | Maximum Instantaneous Reverse Current @ rated V_R | $T_C = 25^\circ\text{C}$ | 1 | mA |
| | | $T_C = 125^\circ\text{C}$ | 60 | |

* Pulse Test: Pulse Width=300 μs , Duty Cycle=2%

Typical Characteristics

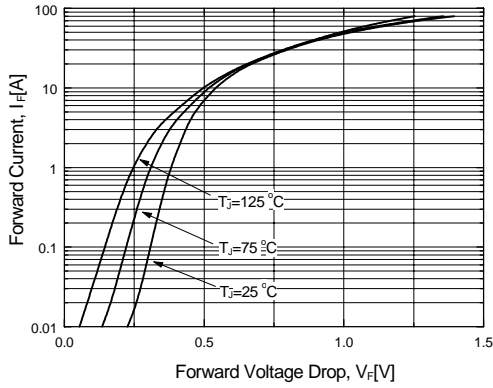


Figure 1. Typical Forward Voltage Characteristics (per diode)

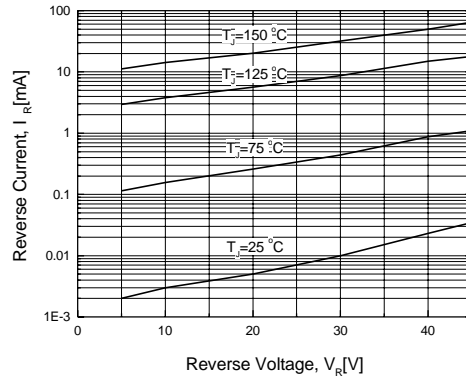


Figure 2. Typical Reverse Current vs. Reverse Voltage (per diode)

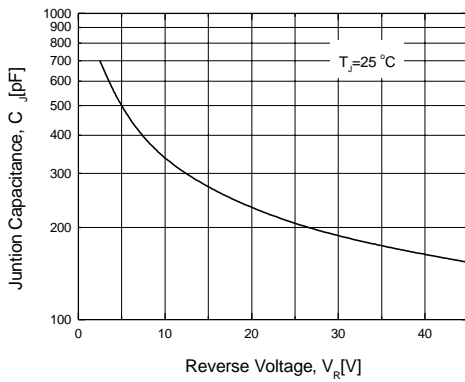


Figure 3. Typical Junction Capacitance (per diode)

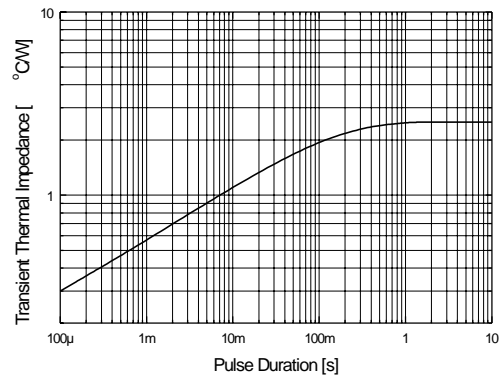


Figure 4. Thermal Impedance Characteristics (per diode)

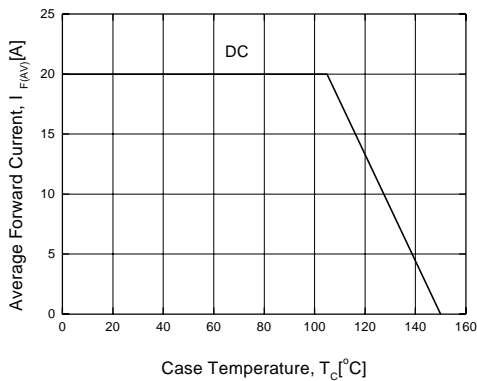


Figure 5. Forward Current Derating Curve

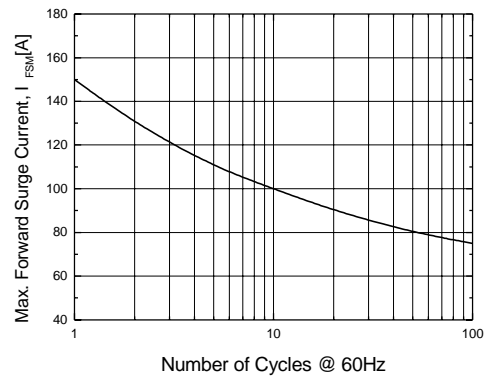
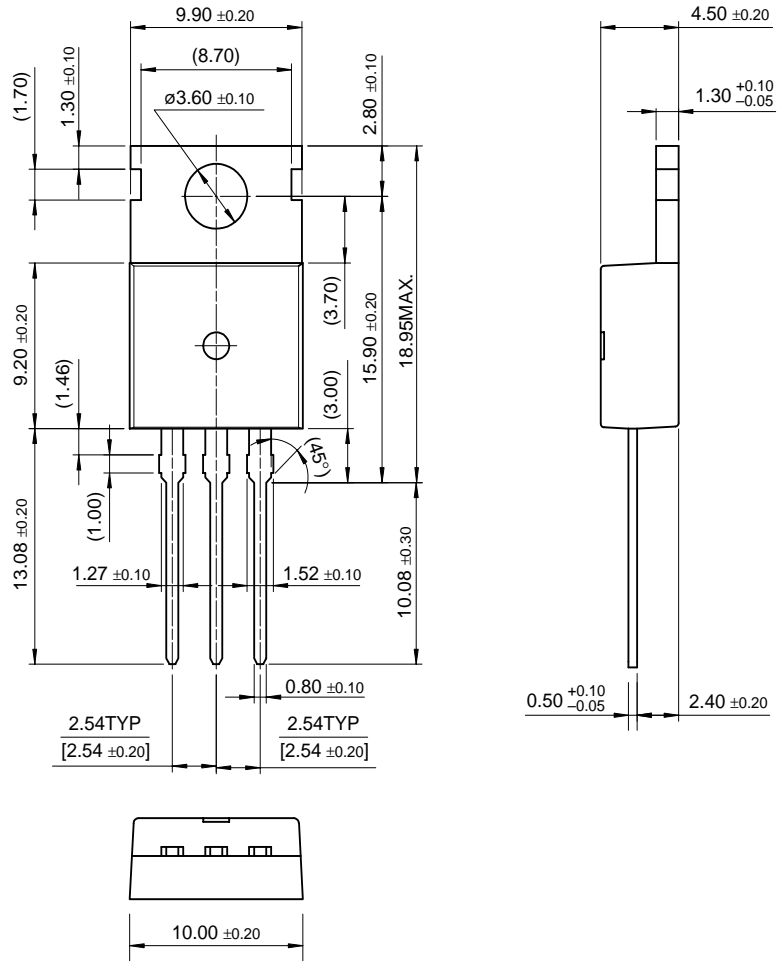


Figure 6. Non-Repetitive Surge Current (per diode)

Package Dimension

TO-220

MBRP2045N



Dimensions in Millimeters

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MBRP2045N

Schottky Barrier Rectifier

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- High frequency properties and switching speed
- Guard ring for over-voltage protection Applications

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| Product | Product status | Pb-free Status | Pricing* | Package type | Leads | Packing method | Package Marking Convention** |
|-------------|-----------------|-----------------|----------|------------------------|-------|----------------|--|
| MBRP2045NTU | Full Production | Full Production | \$0.418 | TO-220 | 3 | RAIL | Line 1: \$Y (Fairchild logo) Line 2: YM2045N Line 3: &3 |

* Fairchild 1,000 piece Budgetary Pricing

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