FAIRCHILD SEMICONDUCTOR®

June 2008

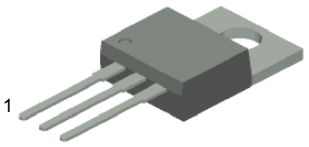
MBRP3045N
Schottky Barrier Rectifier

Applications

- Switched mode power supply
- Freewheeling diodes

Features

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



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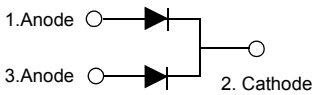


Absolute Maximum Ratings T_C=25°C unless otherwise noted

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 = 100°C	30	A
I_{FSM}	Non-repetitive Peak Surge Current (per diode) 60Hz Single Half-Sine Wave	200	A
T_J, T_{STG}	Operating Junction and Storage Temperature	-65 to +150	°C

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (per diode)	2.2	°C/W

Electrical Characteristics (per diode)

Symbol	Parameter		Value	Units
V_{FM} *	Maximum Instantaneous Forward Voltage I_F = 15A I_F = 15A I_F = 30A I_F = 30A	 T_C = 25 °C T_C = 125 °C T_C = 25 °C T_C = 125 °C	 0.65 0.57 0.80 0.65	V
I_{RM} *	Maximum Instantaneous Reverse Current @ rated V_R	T_C = 25 °C T_C = 125 °C	1 80	mA

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

Typical Performance Characteristics

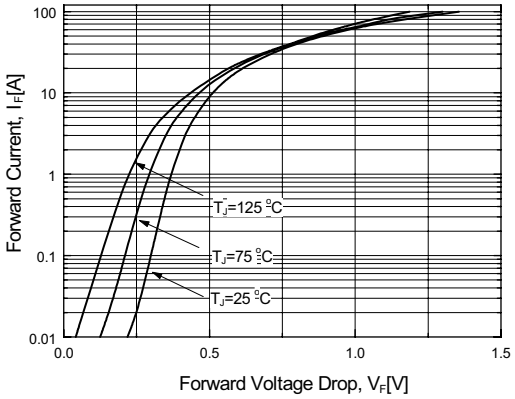


Figure 1. Typical Forward Voltage Characteristics (per diode)

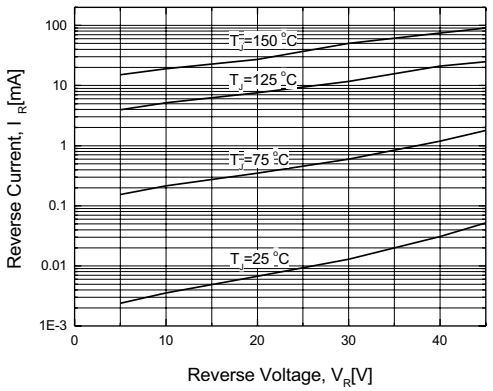


Figure 2. Typical Reverse Current vs. Reverse Voltage (per diode)

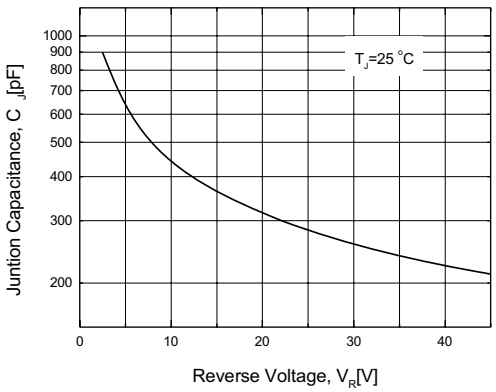


Figure 3. Typical Junction Capacitance (per diode)

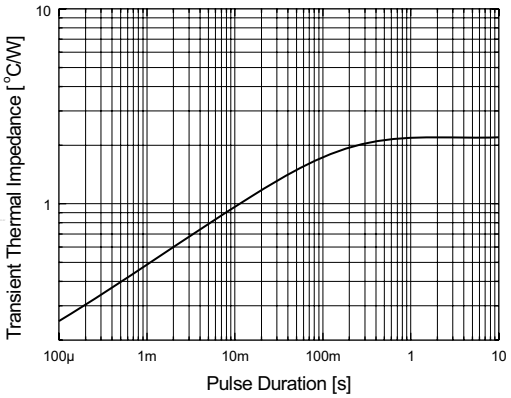


Figure 4. Thermal Impedance Characteristics (per diode)

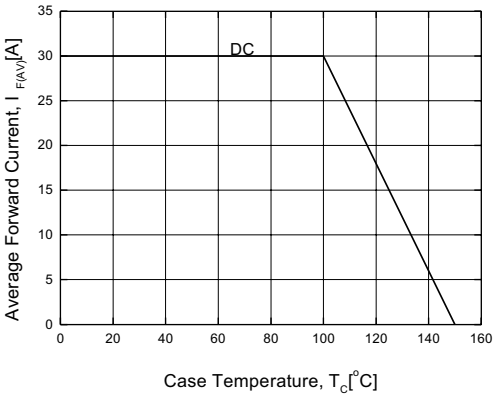


Figure 5. Forward Current Derating Curve

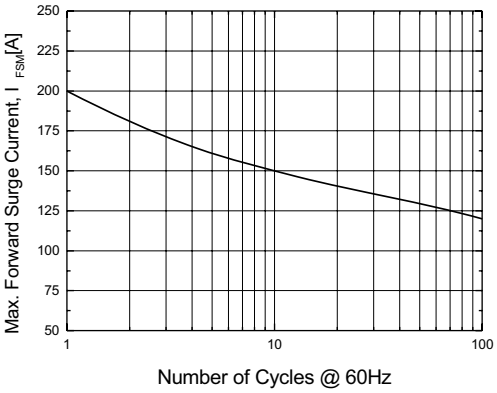
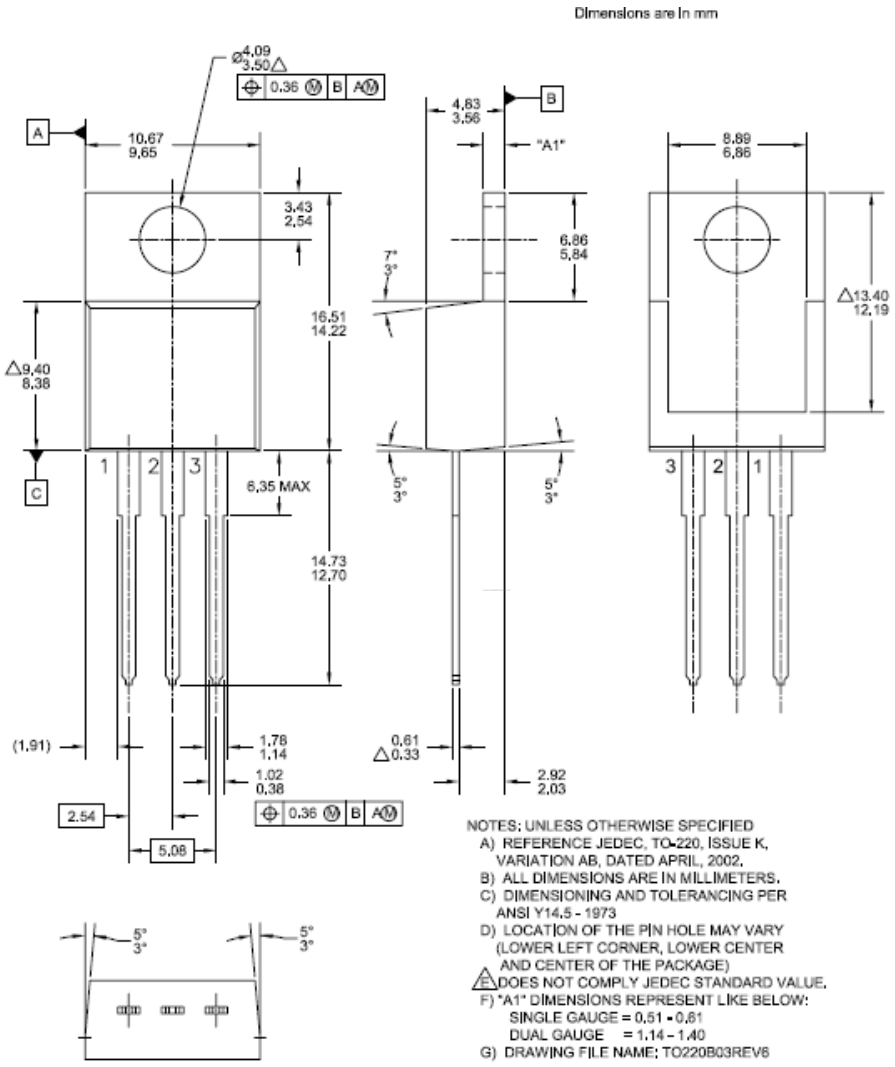


Figure 6. Non-Repetitive Surge Current (per diode)

Package Dimensions

TO-220



Dimensions in Millimeters

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ISOPLANAR™
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OPTOPLANAR®
®
PDP-SPM™
Power220®
Power247®
POWEREDGE®
Power-SPM™
PowerTrench®
Programmable Active Droop™
QFET®
QS™
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