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June 2008

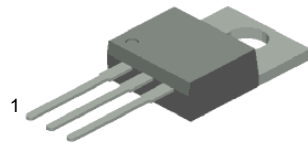
MBRP3045N Schottky Barrier Rectifier

Applications

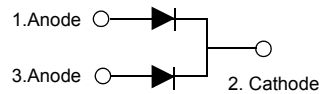
- Switched mode power supply
- Freewheeling diodes

Features

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



TO220



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 @ $T_C = 100^\circ\text{C}$	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	$^\circ\text{C}$

Thermal Characteristics

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

Electrical Characteristics (per diode)

Symbol	Parameter	Value	Units	
V_{FM}^*	Maximum Instantaneous Forward Voltage $I_F = 15\text{A}$ $I_F = 15\text{A}$ $I_F = 30\text{A}$ $I_F = 30\text{A}$	$T_C = 25^\circ\text{C}$	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
		$T_C = 125^\circ\text{C}$	80	

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

Typical Performance Characteristics

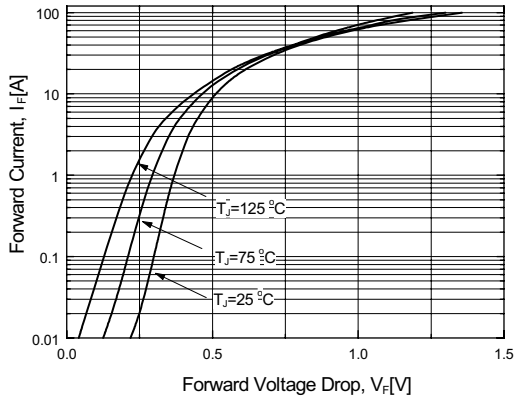


Figure 1. Typical Forward Voltage Characteristics (per diode)

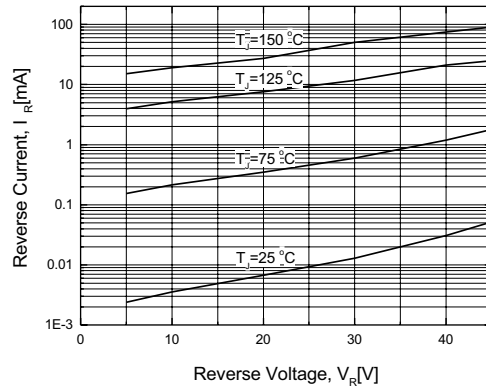


Figure 2. Typical Reverse Current vs. Reverse Voltage (per diode)

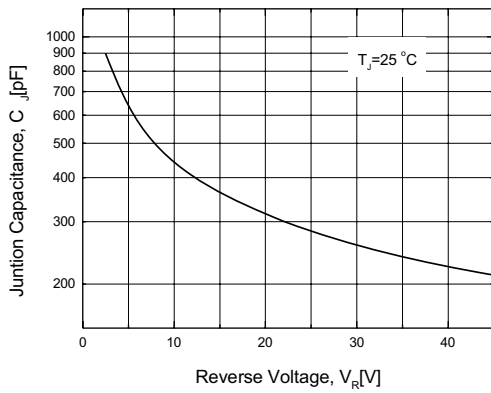


Figure 3. Typical Junction Capacitance (per diode)

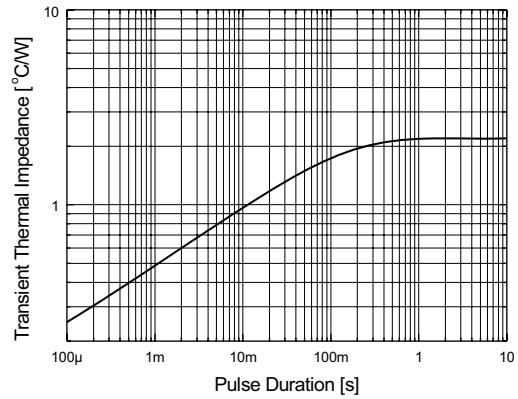


Figure 4. Thermal Impedance Characteristics (per diode)

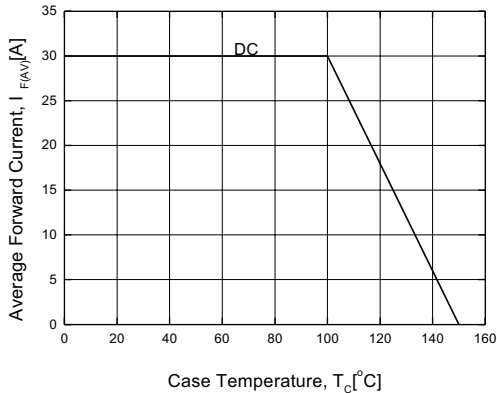


Figure 5. Forward Current Derating Curve

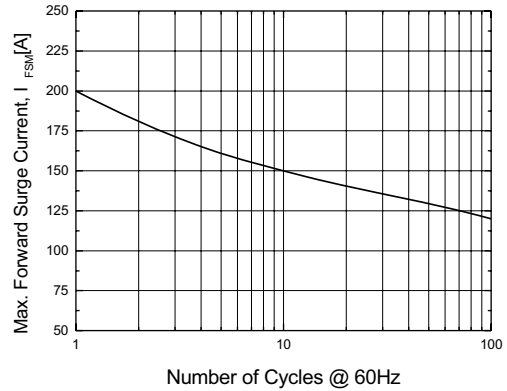
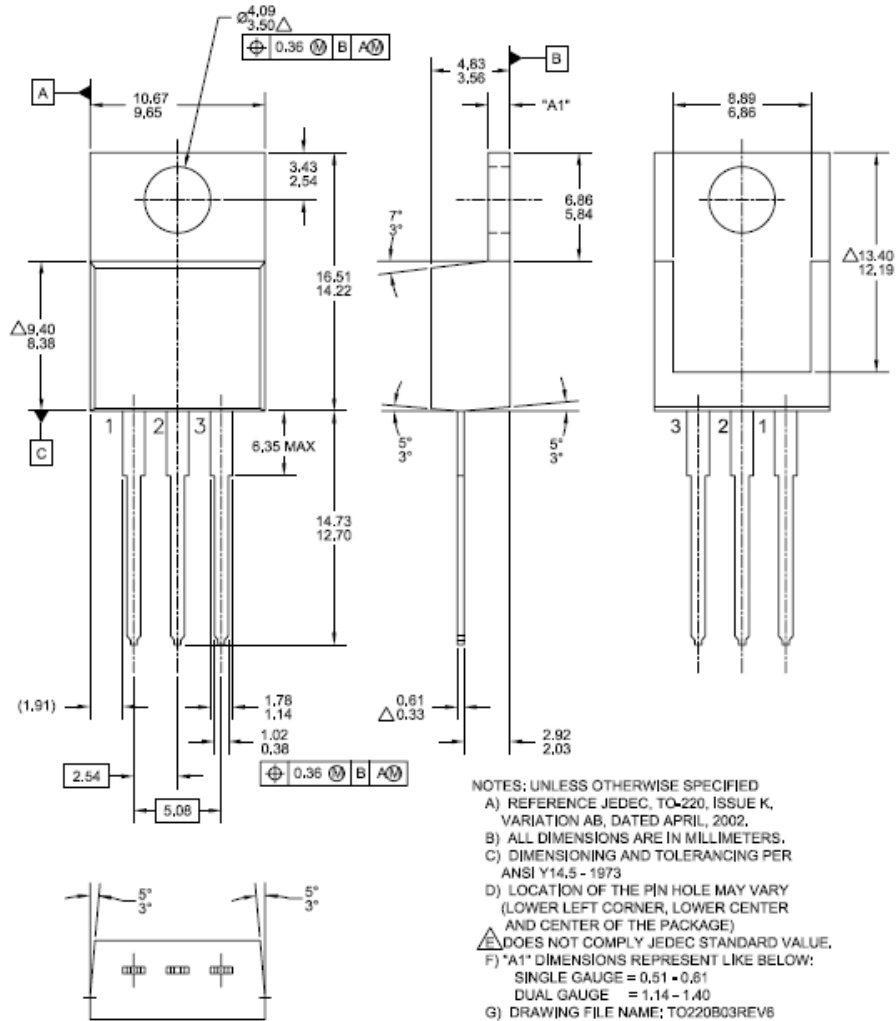


Figure 6. Non-Repetitive Surge Current (per diode)

Package Dimensions

TO-220

Dimensions are in mm








- NOTES: UNLESS OTHERWISE SPECIFIED
- A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.
 - B) ALL DIMENSIONS ARE IN MILLIMETERS.
 - C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973
 - D) LOCATION OF THE PIN HOLE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)
 - E) Δ DOES NOT COMPLY JEDEC STANDARD VALUE.
 - F) *A1* DIMENSIONS REPRESENT LIKE BELOW:
 SINGLE GAUGE = 0.51 - 0.61
 DUAL GAUGE = 1.14 - 1.40
 - G) DRAWING FILE NAME: TO220B03REV6

Dimensions in Millimeters



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