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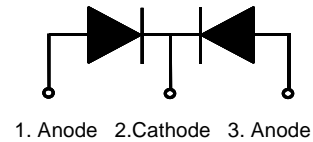
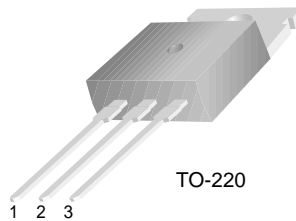
## MBRP2045N

### Features

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

### Applications

- Switched mode power supply
- Freewheeling diodes



## 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

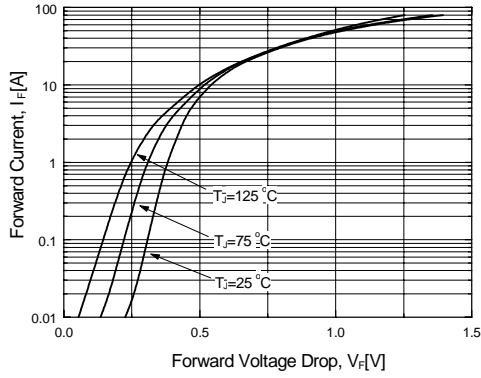
Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case (per diode)	2.5	$^\circ\text{C/W}$

### Electrical Characteristics (per diode)

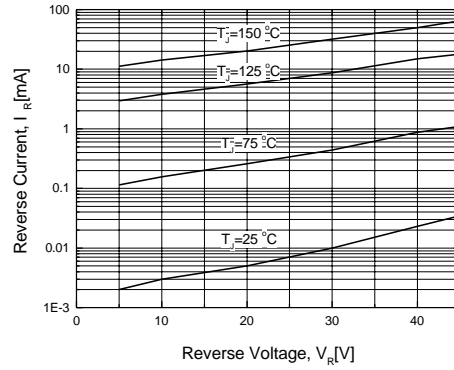
Symbol	Parameter	Value	Units	
$V_{FM}^*$	Maximum Instantaneous Forward Voltage	$T_C = 25^\circ\text{C}$ $I_F = 10\text{A}$	0.65	V
		$T_C = 125^\circ\text{C}$ $I_F = 10\text{A}$	0.57	
		$T_C = 25^\circ\text{C}$ $I_F = 20\text{A}$	0.80	
		$T_C = 125^\circ\text{C}$ $I_F = 20\text{A}$	0.65	
$I_{RM}^*$	Maximum 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 $\mu\text{s}$ , Duty Cycle=2%

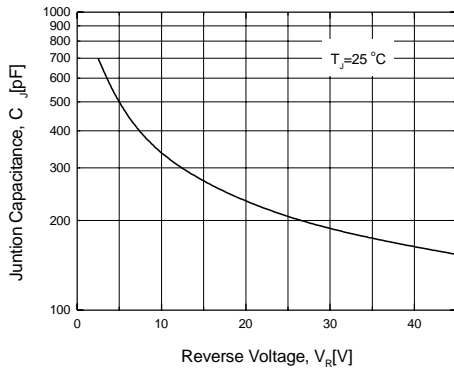
**Typical Characteristics**



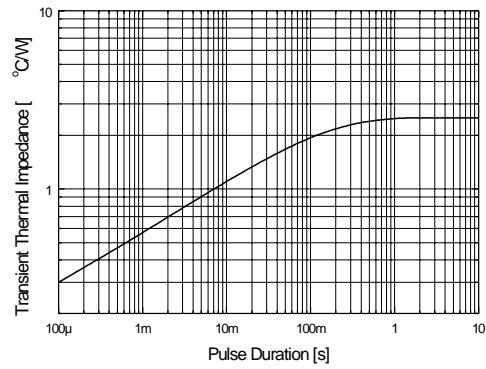
**Figure 1. Typical Forward Voltage Characteristics (per diode)**



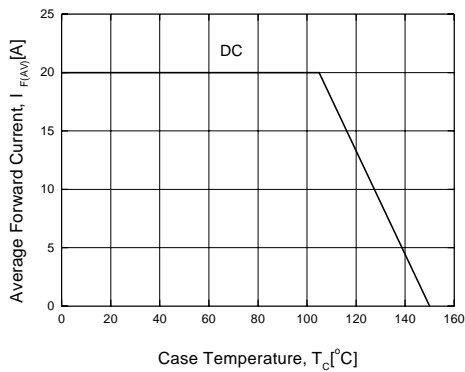
**Figure 2. Typical Reverse Current vs. Reverse Voltage (per diode)**



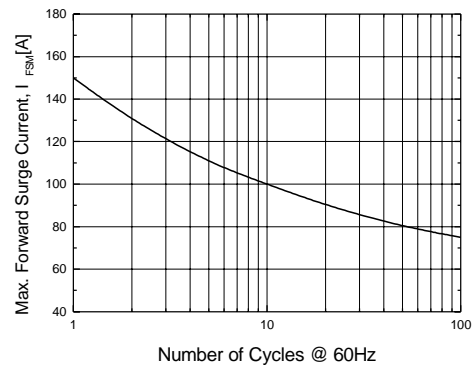
**Figure 3. Typical Junction Capacitance (per diode)**



**Figure 4. Thermal Impedance Characteristics (per diode)**



**Figure 5. Forward Current Derating Curve**



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



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