

**MBR7535**  
**MBR7545**

MBR7545 is a  
 Motorola Preferred Device

## Switchmode Power Rectifiers

... employing the Schottky Barrier principle in a large area metal-to-silicon power diode. State-of-the-art geometry features epitaxial construction with oxide passivation and metal overlap contact. Ideally suited for use as rectifiers in low-voltage, high-frequency inverters, free-wheeling diodes, and polarity-protection diodes.

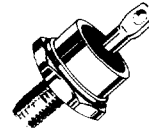
- Extremely Low  $v_f$
- Low Stored Charge, Majority Carrier Conduction
- Low Power Loss/ High Efficiency
- High Surge Capacity

### Mechanical Characteristics:

- Case: Welded steel, hermetically sealed
- Weight: 17 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Lead is Readily Solderable
- Solder Heat: The excellent heat transfer property of the heavy duty copper anode terminal which transmits heat away from the die requires that caution be used when attaching wires. Motorola suggests a heat sink be clamped between the eyelet and the body during any soldering operation.
- Stud Torque: 25 lb-in max
- Shipped 25 units per rail
- Marking: B7535, B7545

### SCHOTTKY BARRIER RECTIFIERS

**75 AMPERES**  
**35 AND 45 VOLTS**



CASE 257-01  
 DO-203AB  
 METAL

### MAXIMUM RATINGS

Rating	Symbol	MBR7535	MBR7545	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	35	45	Volts
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz)	$I_{FRM}$	150		Amp
		$T_C = 90^\circ\text{C}$		
Average Rectified Forward Current (Rated $V_R$ )	$I_O$	75		Amp
		$T_C = 90^\circ\text{C}$		
Non-repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	$I_{FSM}$	1000		Amp
Operating and Storage Junction Temperature Range	$T_{J, T_{stg}}$	-65 to +150		$^\circ\text{C}$
Peak Operating Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	175		$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	10000		$\text{V}/\mu\text{s}$

### THERMAL CHARACTERISTICS

Rating	Symbol	MBR7535	MBR7545	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.8		$^\circ\text{C}/\text{W}$

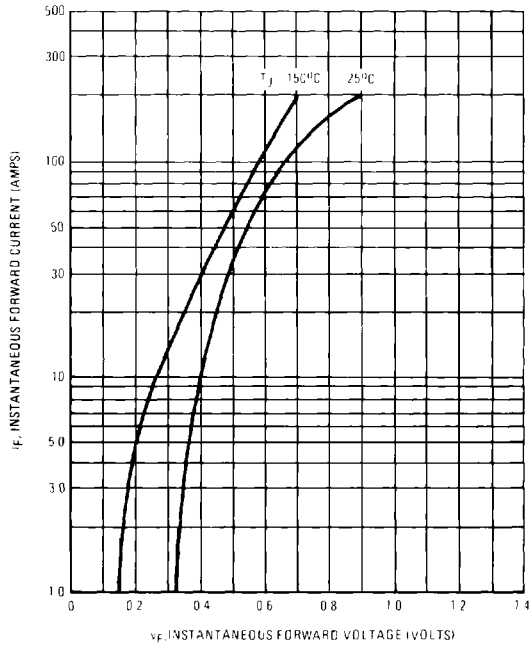
### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	MBR7535	MBR7545	Unit
Maximum Instantaneous Forward Voltage (1) ( $I_F = 60$ Amp, $T_C = 125^\circ\text{C}$ ) ( $I_F = 220$ Amp, $T_C = 125^\circ\text{C}$ )	$v_f$	0.60 0.90		Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, $T_C = 125^\circ\text{C}$ )	$i_R$	150	250	mA
Capacitance ( $V_R = 5.0$ Vdc, $100$ kHz $\leq f \leq 1.0$ MHz)	$C_t$	4000		pF

(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle = 2.0%.

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FIGURE 1 – TYPICAL FORWARD VOLTAGE



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FIGURE 2 – CURRENT DERATING

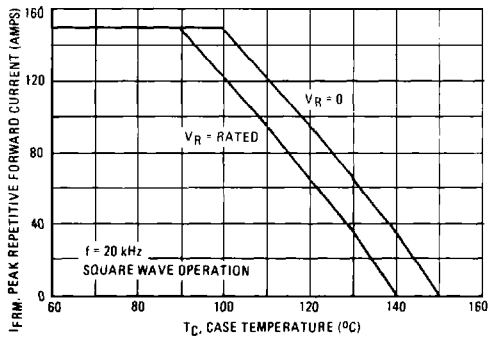


FIGURE 3 – TYPICAL REVERSE OPERATION

