



## Maximum Ratings and Electrical Characteristics

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

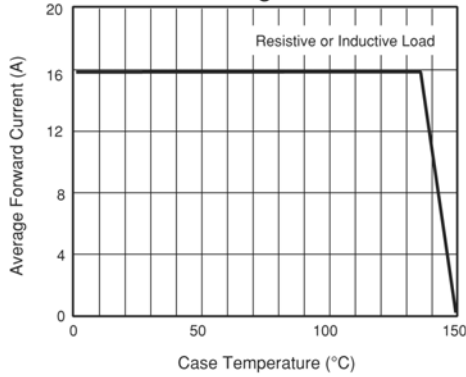
Parameter	Symbol	MBR1635	MBR1645	MBR1650	MBR1660	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	35	45	50	60	Volts
Working peak reverse voltage	$V_{RWM}$	35	45	50	60	Volts
Maximum DC blocking voltage	$V_{DC}$	35	45	50	60	Volts
Maximum average forward rectified current at $T_C=125^\circ\text{C}$	$I_{F(AV)}$	16				Amps
Peak repetitive forward current (rated $V_R$ , sq. wave, 20KHz) at $T_C=125^\circ\text{C}$	$I_{FRM}$	32				Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150				Amps
Peak repetitive reverse current at $t_p = 2.0\mu\text{s}$ , 1KHz	$I_{RRM}$	1.0		0.5		Amps
Voltage rate of change (rated $V_R$ )	$dv/dt$	10,000		1,000		V/ $\mu\text{s}$
Maximum instantaneous forward voltage (Note 4) at $I_F=16\text{A}$ , $T_C=25^\circ\text{C}$ at $I_F=16\text{A}$ , $T_C=125^\circ\text{C}$	$V_F$	0.63 0.57		0.75 0.65		Volt
Maximum instantaneous reverse current at rated DC blocking voltage (Note 4) $T_C=25^\circ\text{C}$ $T_C=125^\circ\text{C}$	$I_R$	0.2 40		1.0 50		mA
Typical thermal resistance from junction to case	$R_{\theta JC}$	MBR 1.5 / MBRF 3.0 / MBRB 1.5				$^\circ\text{C}/\text{W}$
RMS Isolation voltage (MBRF type only) from terminals to heatsink with $t = 1.0$ second, $\text{RH} \leq 30\%$	$V_{ISOL}$	4500 (Note 1) 3500 (Note 2) 1500 (Note 3)				Volts
Operating junction temperature range	$T_J$	-55 to +150				$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150				$^\circ\text{C}$

- Notes:**
1. Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
  2. Clip mounting (on case), where leads do overlap heatsink
  3. Screw mounting with 4-40 screw, where washer diameter is < 4.9 mm (0.19")
  4. Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

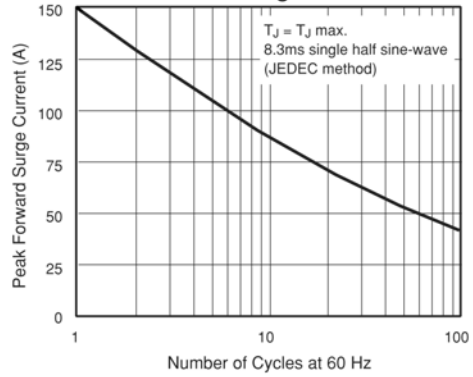
# RATINGS AND CHARACTERISTIC CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

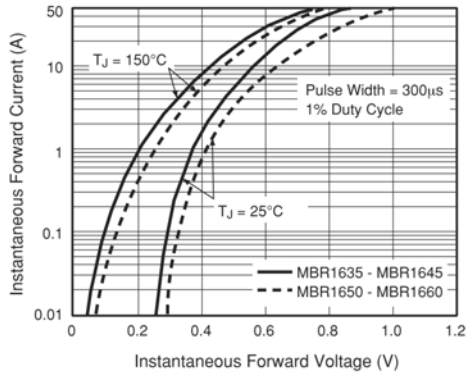
**Fig. 1 - Forward Current Derating Curve**



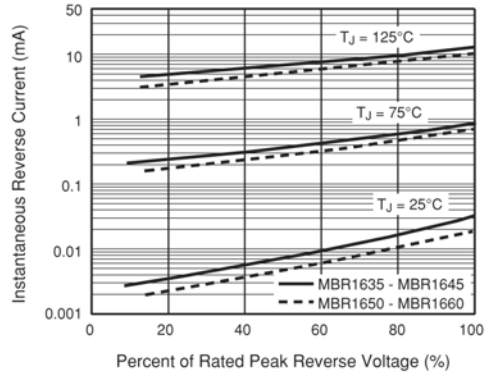
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



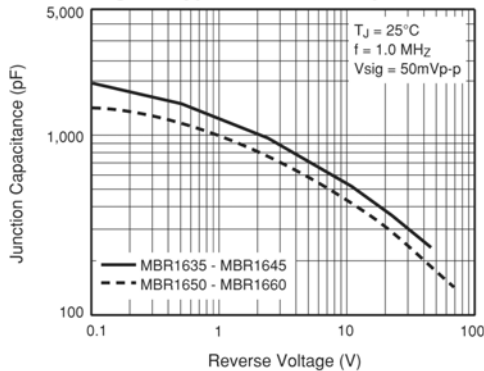
**Fig. 3 - Typical Instantaneous Forward Characteristics**



**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



**Fig. 6 - Typical Transient Thermal Impedance**

