

# MBR1635 THRU MBR1660

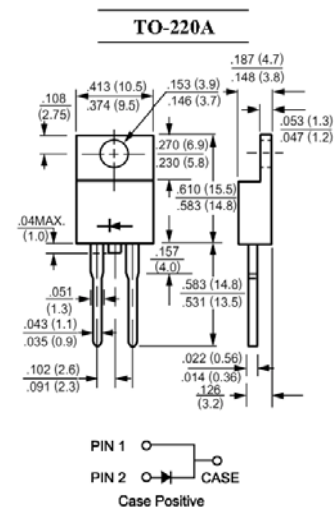
## SCHOTTKY BARRIER RECTIFIER Reverse Voltage - 35 to 60 V Forward Current - 16 A

### Features

- Metal silicon junction, majority carrier conduction
- Guard ring for overvoltage protection
- High current capability
- Low power loss, high efficiency
- Low forward voltage drop
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

### Mechanical Data

- Case: Molded plastic, TO-220A
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: Leads solderable per MIL-STD-202 Method 208 guaranteed
- Polarity: As marked
- Mounting position: Any



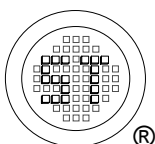
Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbols	MBR1635	MBR1645	MBR1650	MBR1660	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	V
Maximum Average Forward Rectified Current $T_C = 125\text{ }^\circ\text{C}$	$I_{F(AV)}$	16				A
Peak Repetitive Forward Current at $T_C = 125\text{ }^\circ\text{C}$ (Rated $V_R$ , Sq. Wave, 20 KHz)	$I_{FRM}$	32				A
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	150				A
Peak Repetitive Reverse Current at $t_p = 2\text{ }\mu\text{s}$ , 1 KHz	$I_{RRM}$	1		0.5		A
Maximum Forward Voltage <sup>1)</sup> at $I_F = 16\text{ A}$ , $T_C = 25\text{ }^\circ\text{C}$ at $I_F = 16\text{ A}$ , $T_C = 125\text{ }^\circ\text{C}$	$V_F$	0.63 0.57		0.75 0.65		V
Maximum Reverse Current at Rated DC Blocking Voltage at $T_C = 25\text{ }^\circ\text{C}$ at $T_C = 125\text{ }^\circ\text{C}$	$I_R$	0.2 40		1 50		mA
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	10,000				V/ $\mu\text{s}$
Typical Thermal Resistance	$R_{\theta JC}$	1.5				$^\circ\text{C}/\text{W}$
Operating Temperature Range	$T_J$	- 55 to + 150				$^\circ\text{C}$
Storage Temperature Range	$T_S$	- 55 to + 175				$^\circ\text{C}$

<sup>1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1% duty cycle



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002  
Certificate No. 05103



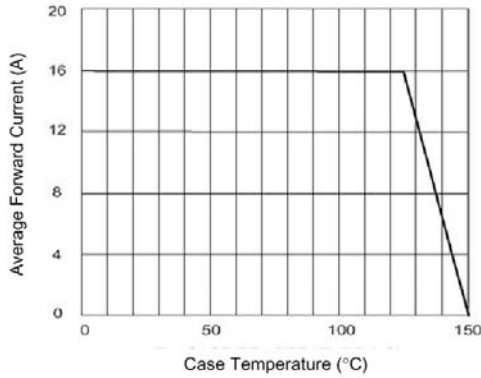
ISO 14001:2004  
Certificate No. 7116



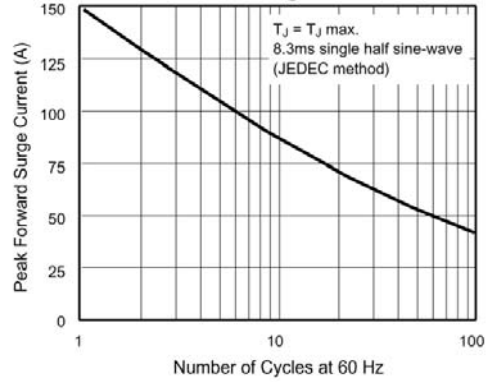
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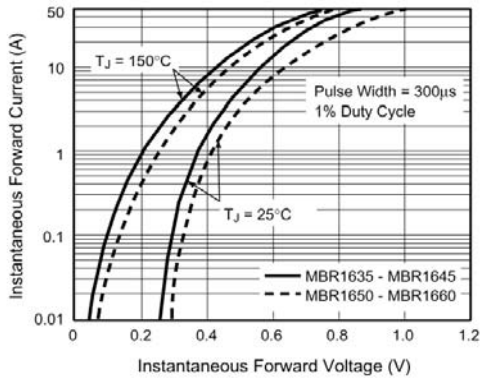
**Fig. 1 - Forward Current Derating Curve**



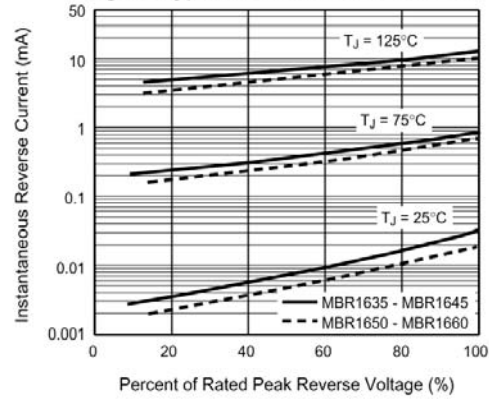
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



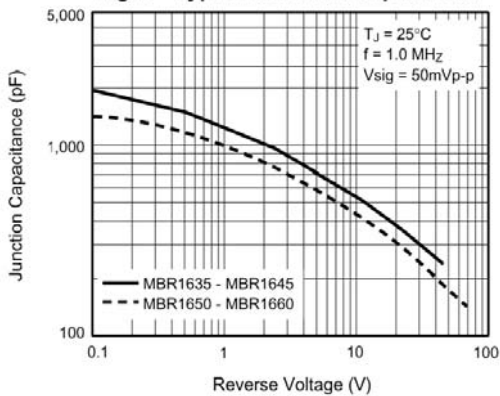
**Fig. 3 - Typical Instantaneous Forward Characteristics**



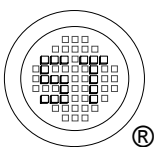
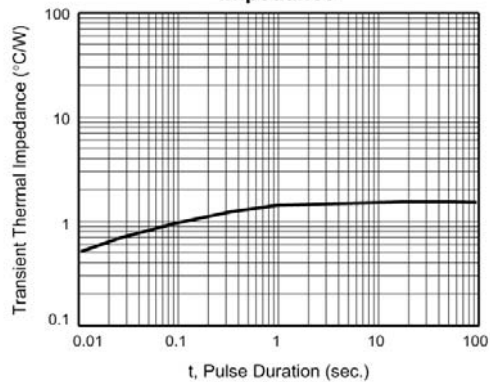
**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



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



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