

# MBRS1035 THRU MBRS1060

## SCHOTTKY BARRIER RECTIFIER



康比電子  
HORNBY ELECTRONIC

**REVERSE VOLTAGE:** 35 to 60 VOLTS  
**FORWARD CURRENT:** 10.0 AMPERE

### FEATURES

- For surface mounted application
- Metal silicon junction, majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss, high efficiency
- For use in low voltage, high frequency inverters, free whelling, and polarity protection applications
- High temperature soldering guaranteed:  
250°C/10 seconds, 0.25" (6.35mm) from case

### MECHANICAL DATA

Case: Molded plastic, D<sup>2</sup>PAK

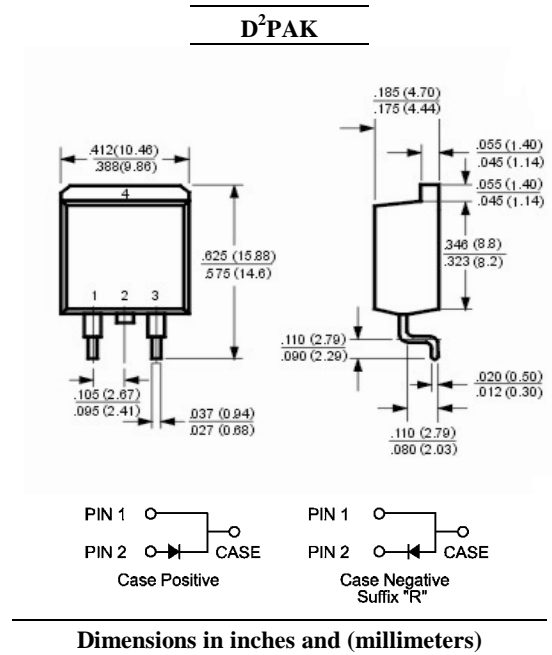
Epoxy: UL 94V-O rate flame retardant

Terminals: Leads solderable per MIL-STD-202 method 208 guaranteed

Polarity: As marked

Mounting position: Any

Weight: 0.06ounce, 1.70gram



### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

	Symbols	MBRS1035	MBRS1045	MBRS1050	MBRS1060	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	Volts
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	Volts
Maximum DC Blocking Voltage	$V_{DC}$	20	30	40	50	Volts
Maximum Average Forward Rectified Current See Fig. 1	$I_{(AV)}$	10.0				Amp
Peak repetitive forward current (sq. wave, 20 KHz) at $T_C = 135^\circ\text{C}$	$I_{FRM}$	20				Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150				Amp
Peak repetitive reverse current at $t_p = 2.0\mu\text{s}$ , 1KHz	$I_{RRM}$	1.0		0.5		Amp
Maximum Forward Voltage (Note 1)	$V_F$					Volts
at $I_F = 10\text{A}$ , $T_C = 25^\circ\text{C}$		-		0.80		
at $I_F = 10\text{A}$ , $T_C = 125^\circ\text{C}$		0.57		0.70		
at $I_F = 20\text{A}$ , $T_C = 25^\circ\text{C}$		0.84		0.95		
at $I_F = 20\text{A}$ , $T_C = 125^\circ\text{C}$		0.72		0.85		
Maximum Reverse Current at $T_C = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_C = 125^\circ\text{C}$	$I_R$		0.1			mAmp
			15			
Voltage rate of change (rated $V_R$ )	$dv/dt$		10,000			V/ $\mu\text{s}$
Typical Thermal Resistance	$R_{\theta JC}$		2.0			$^\circ\text{C}/\text{W}$
Operating Temperature Range	$T_J$		-55 to +150			$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$		-55 to +175			$^\circ\text{C}$

### NOTES:

1- Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

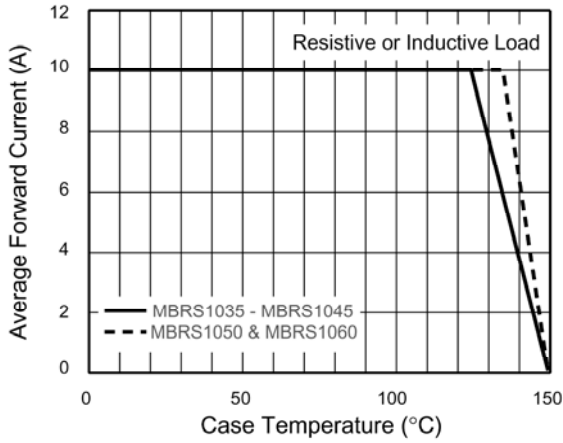
# MBRS1035 THRU MBRS1060

## SCHOTTKY BARRIER RECTIFIER

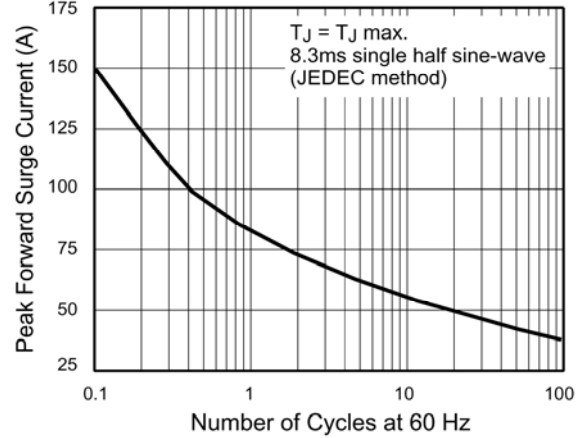


### RATINGS AND CHARACTERISTIC CURVES

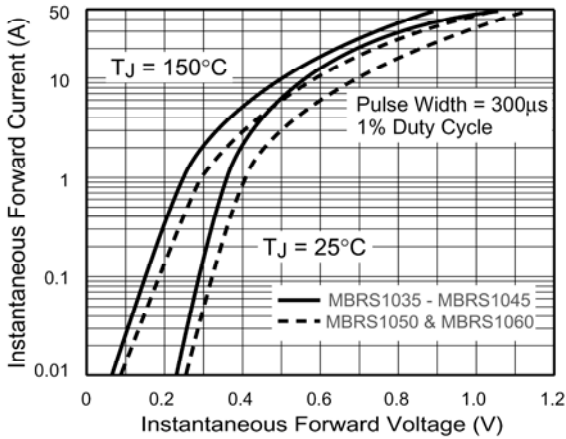
**Fig. 1 - Forward Current Derating Curve**



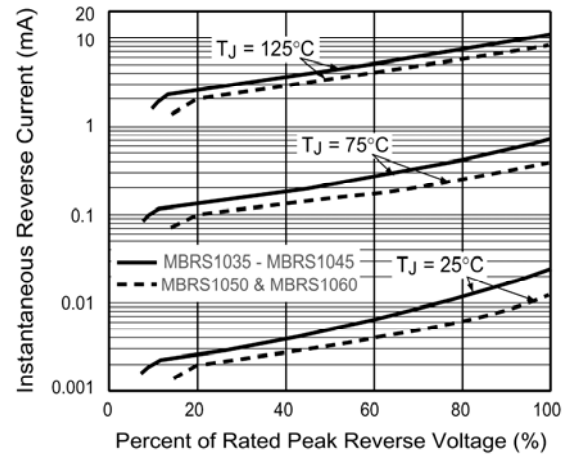
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



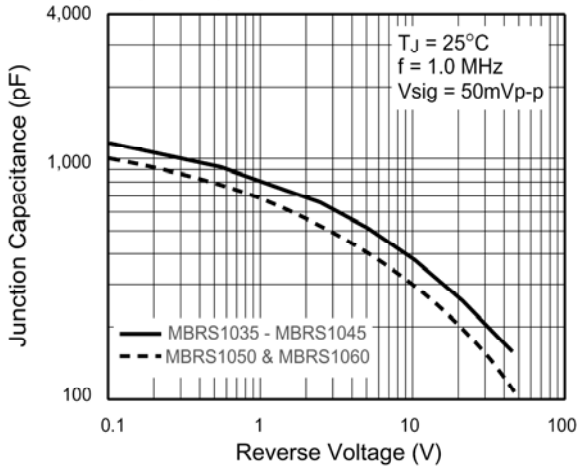
**Fig. 3 - Typical Instantaneous Forward Characteristics**



**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



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

