



# US3ABF THRU US3MBF

## SURFACE MOUNT ULTRA FAST RECTIFIER

Reverse Voltage - 50 to 1000 Volts Forward Current - 3.0 Amperes

### FEATURES

The plastic package carries Underwriters Laboratory  
Flammability Classification 94V-0  
For surface mounted applications  
Ultra fast switching for high efficiency  
Low reverse leakage  
Built-in strain relief, ideal for automated placement  
High forward surge current capability  
High temperature soldering guaranteed  
260°C/10 seconds at terminals  
Glass passivated chip junction

### MECHANICAL DATA

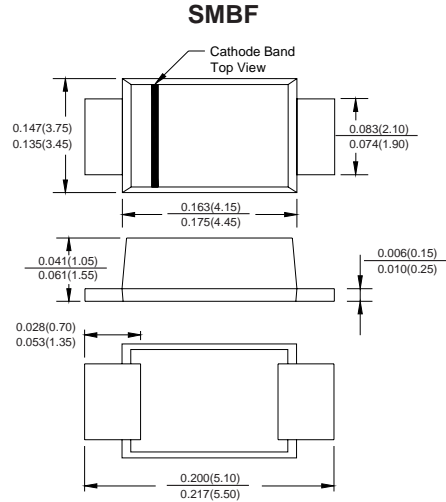
**Case:** JEDEC SMBF molded plastic body over passivated chip

**Terminals:** Solder plated, solderable per MIL-STD-750,  
Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.002 ounce, 0.056 grams



Dimensions in inches and (millimeters)

### 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 current derate by 20%.

	SYMBOLS	US3ABF	US3BBF	US3DBF	US3GBF	US3JBF	US3KBF	US3MBF	UNITS
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	VOLTS
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	VOLTS
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	VOLTS
Maximum average forward rectified current at $T_L=100^\circ\text{C}$	$I_{(AV)}$	3.0							Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100.0							Amps
Maximum instantaneous forward voltage at 3.0A	$V_F$	1.0		1.4		1.7		Volts	
Maximum DC reverse current at rated DC blocking voltage	$I_R$			5.0				$\mu\text{A}$	
				200.0					
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	50			75			ns	
Typical junction capacitance (NOTE 2)	$C_J$	58.0							pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	75.0							$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							$^\circ\text{C}$

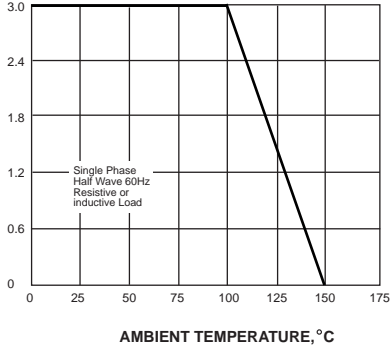
**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad area



# RATINGS AND CHARACTERISTIC CURVES US3ABF THRU US3MBF

AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

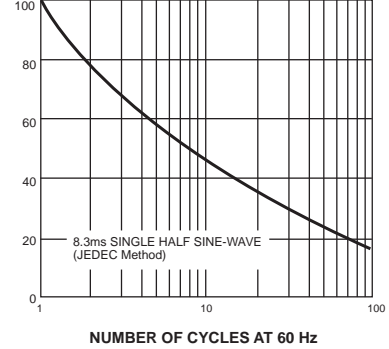
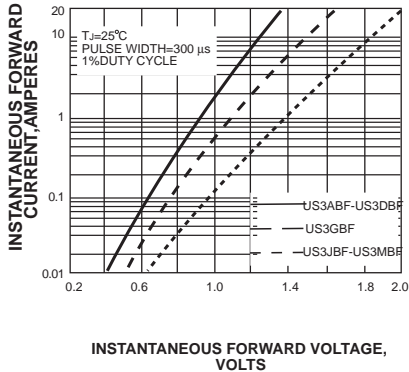


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

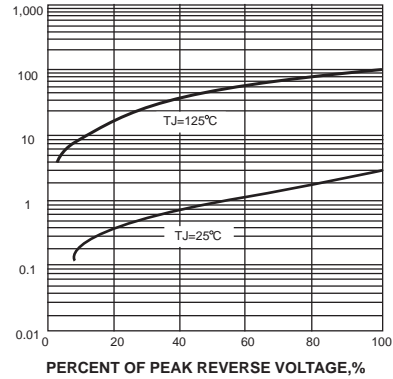
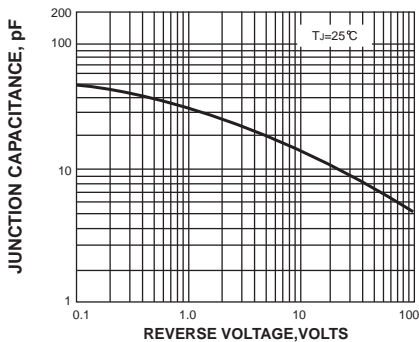
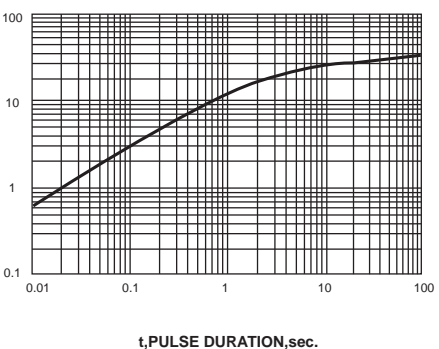


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



t,PULSE DURATION,sec.