

### III. Fast / Ultra Fast / Super Fast Recovery Rectifier

#### 3.0A Surface Mount Ultra Fast Recovery Rectifier

#### US3AB~US3MB

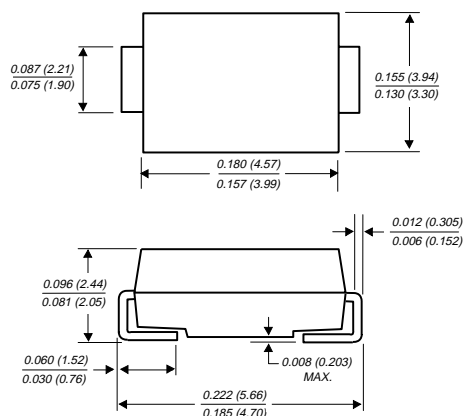
(Package: SMB (DO-214AA))

#### FEATURES

- For surface mounted applications.
- Glass passivated junction chip.
- Built-in strain relief, ideal for automated placement.
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0.
- Ultra Fast recovery for high efficiency.
- High temperature soldering : 260 /10 seconds at terminals.

#### MECHANICAL DATA

- Case : Molded plastic
- Terminals : Solder plated
- Polarity : Indicated by cathode band
- Weight : 0.090 grams



Case: SMB  
Dimensions in inches and (millimetres)

### Ratings & Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20%.

Characteristics	Symbol	US3AB	US3BB	US3DB	US3GB	US3JB	US3KB	US3MB	Units
Maximum recurrent 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 See Fig. 1 @ $T_L=110$	$I_o$	3.0							Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load. (JEDEC Method)	$I_{FSM}$	100							Amps
Maximum instantaneous forward voltage @ 3.0 A	$V_F$	1.0		1.3		1.7		Volts	
Maximum DC reverse current @ $T_a=25$ at rated DC blocking voltage @ $T_a=100$	$I_R$	10.0 250							$\mu A$
Maximum reverse recovery time (Note 1)	$T_{rr}$	50				75			ns
Typical junction capacitance (Note 2)	$C_j$	45							PF
Typical thermal resistance (Note 3)	$R_{th-JA}$	25							/W
Operating temperature range	$T_j$	-50 to +150							
Storage temperature range	$T_{stg}$	-50 to +150							

Notes:

1. Reverse recovery test conditions:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$
2. Measured at 1.0 MHz and applied  $V_R=4.0V$ .
3. Thermal resistance from junction to terminal mounted on 0.6"x0.6" (16x16mm) copper pad areas.

# Ratings and Characteristic Curves of US3AB~US3MB

Fig. 1 FORWARD CURRENT DERATING CURVE

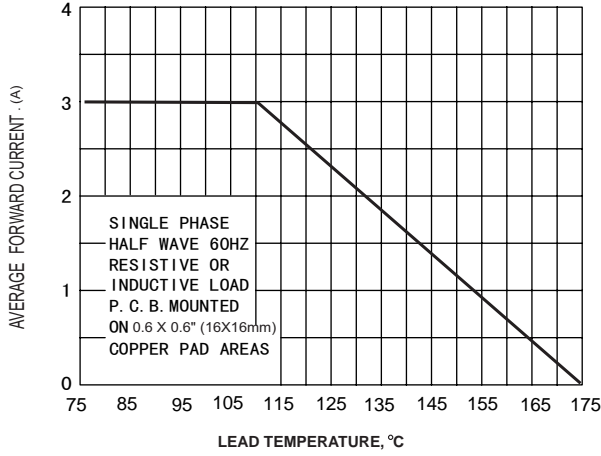


Fig. 2 MAXIMUM NON REPETITIVE PEAK FORWARD SURGE CURRENT

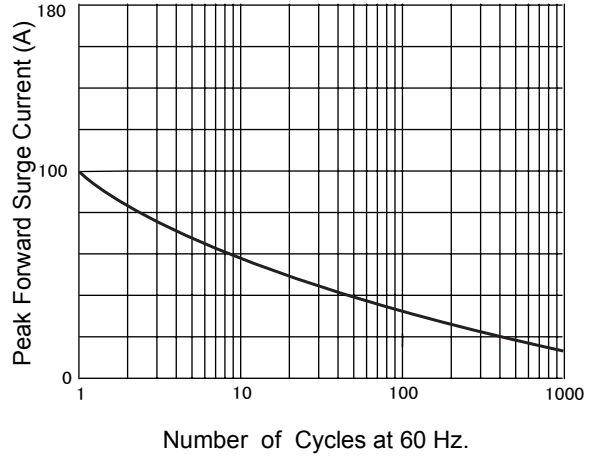


Fig. 3 TYPICAL FORWARD CHARACTERISTIC

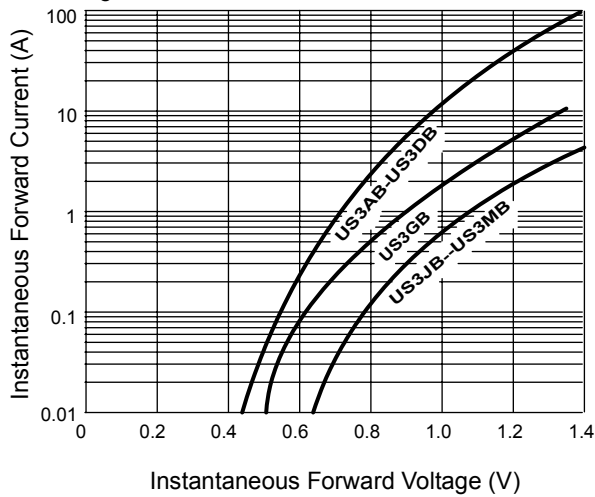


Fig. 4 TYPICAL REVERSE CHARACTERISTIC

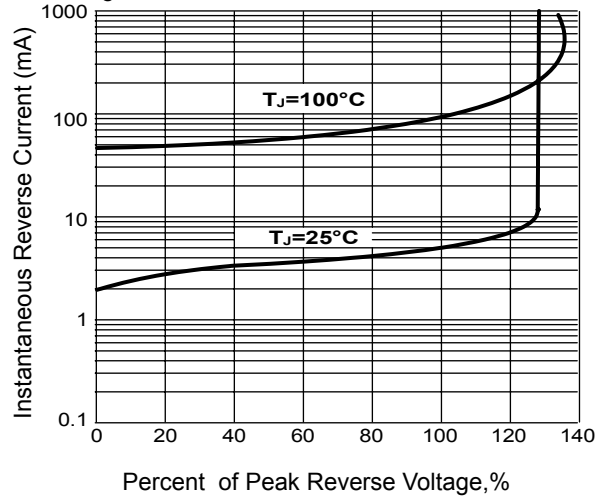


Fig. 5 TYPICAL JUNCTION CAPACITANCE

