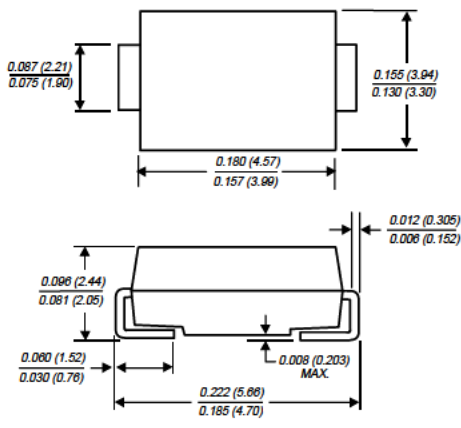


III. Fast / Ultra Fast / Super Fast Recovery Rectifier

5.0A Surface Mount Ultra Fast Recovery Rectifier

US5AB~US5MB

(Package: SMB (DO-214AA))

<p><u>FEATURES</u></p> <ul style="list-style-type: none"> • 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 : 250°C/10 seconds at terminals. <p><u>MECHANICAL DATA</u></p> <ul style="list-style-type: none"> • Case : Molded plastic • Terminals : Solder plated • Polarity : Indicated by cathode band • Weight : 0.090 grams 	 <p>Case: SMB Dimensions in inches and (millimetres)</p>
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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	US5AB	US5BB	US5DB	US5GB	US5JB	US5KB	US5MB	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 @ $T_L=110^\circ\text{C}$	I_o	5.0							Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load. (JEDEC Method)	I_{FSM}	150							Amps
Maximum instantaneous forward voltage @ 5.0 A	V_F	1.0		1.4	1.85			Volts	
Maximum DC reverse current @ $T_a=25^\circ\text{C}$ at rated DC blocking voltage @ $T_a=100^\circ\text{C}$	I_R	10.0				250			μA
Maximum reverse recovery time (Note 1)	T_{rr}	50				100			ns
Typical junction capacitance (Note 2)	C_j	98				82			PF
Typical thermal resistance	R_{th-JA}	47							$^\circ\text{C/W}$
Operating temperature range	T_J	-65 to +150							$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 to +150							$^\circ\text{C}$

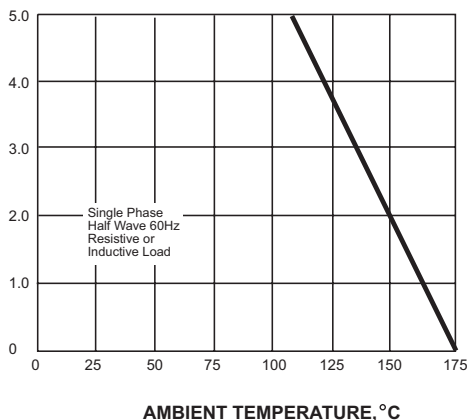
Notes:

1. Reverse recovery test conditions: $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$
2. Measured at 1.0 MHz and applied $V_R=4.0\text{V}$.

Ratings and Characteristic Curves of US5AB~US5MB

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

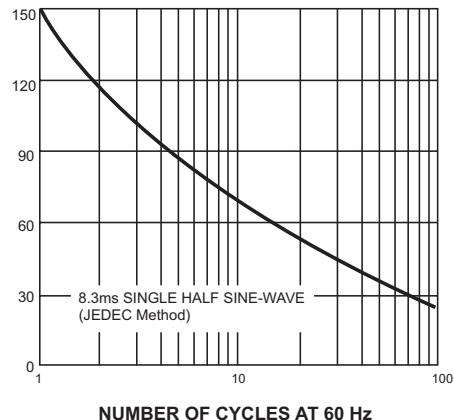
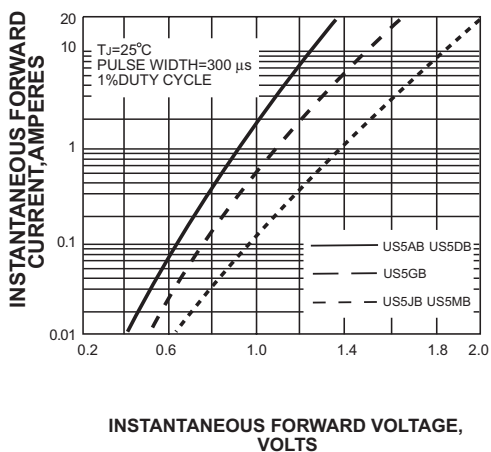


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

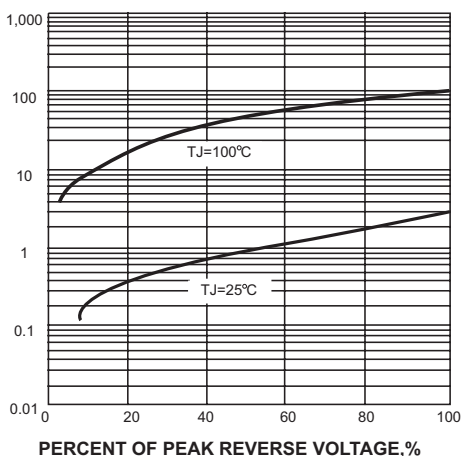
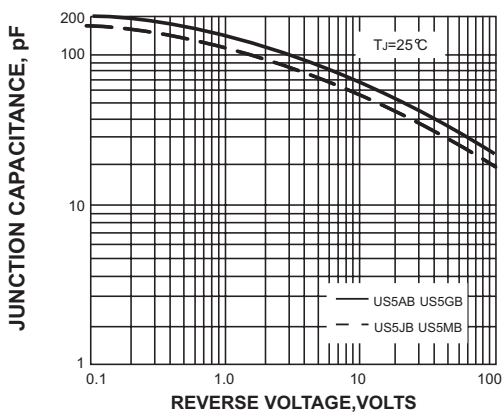


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

