

III. Fast / Ultra Fast / Super Fast Recovery Rectifier

5.0A Surface Mount Super Fast Recovery Rectifier

ES5AB~ES5JB

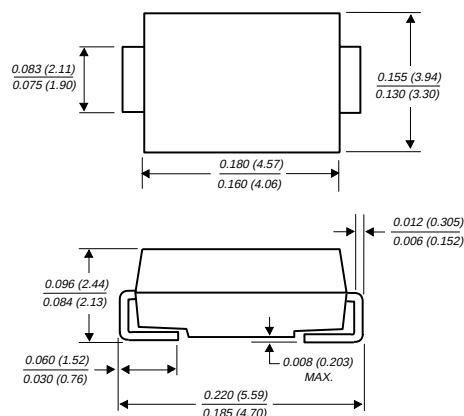
(Package: SMB (DO-214AA))

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.
- Super Fast recovery for high efficiency.
- High temperature soldering : 250°C/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

Characteristics	Symbol	ES5AB	ES5BB	ES5CB	ES5DB	ES5EB	ES5GB	ES5JB	Units
Maximum recurrent peak reverse voltage	V _{RRM}	50	100	150	200	300	400	600	Volts
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	420	Volts
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	600	Volts
Maximum average forward rectified current See Fig. 1 @T _L =75°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	0.95				1.30		1.70	Volts
Maximum DC reverse current @Ta =25°C at rated DC blocking voltage @Ta =100°C	I _R	10 300							µA
Maximum reverse recovery time (Note 1)	T _{rr}	35							ns
Typical junction capacitance (Note 2)	C _j	58							PF
Typical thermal resistance	R _{th} -JA	47							°C/W
Operating temperature range	T _j	-65 to +150							°C
Storage temperature range	T _{stg}	-65 to +150							°C

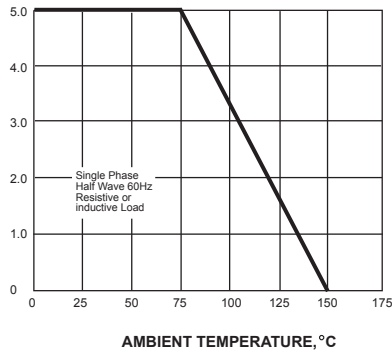
Notes:

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 ES5AB~ES5JB

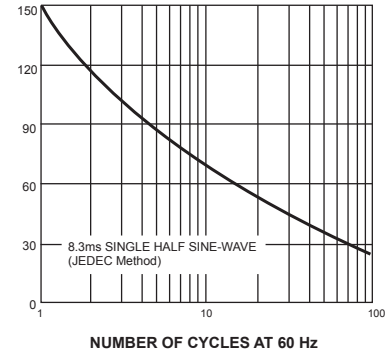
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



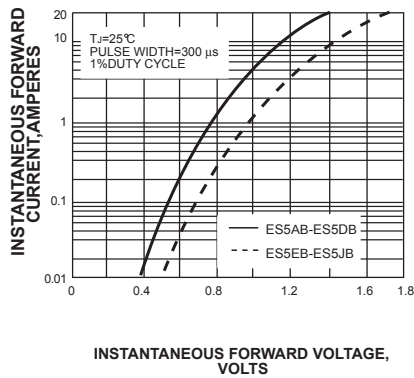
PEAK FORWARD SURGE CURRENT,
AMPERES

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



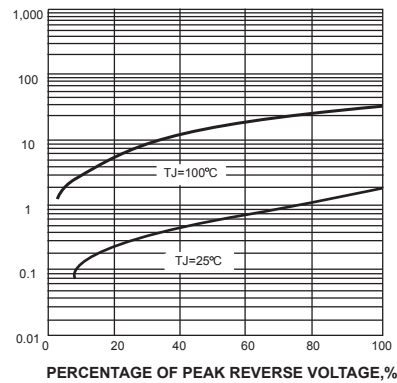
INSTANTANEOUS FORWARD
CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



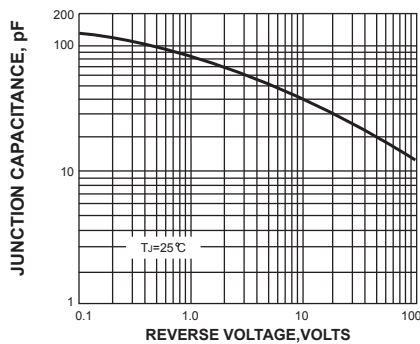
INSTANTANEOUS REVERSE CURRENT,
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

