III. Fast / Ultra Fast / Super Fast Recovery Rectifier

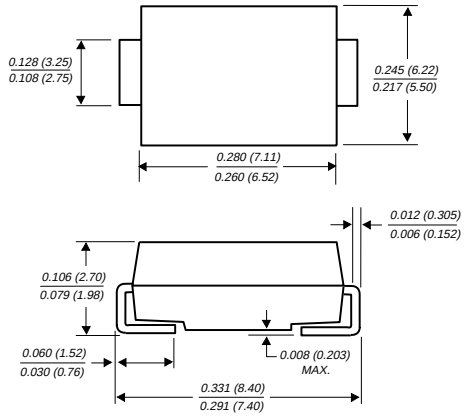
5.0A Surface Mount Super Fast Recovery Rectifier
ES5A~ES5J (Package: SMC (DO-214AB))

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℃/10 seconds at terminals.

MECHANICAL DATA

- Case : Molded plastic
- Terminals : Solder plated
- Polarity : Indicated by cathode band
- Weight : 0.220 grams



Case: SMC
Dimensions in inches and (millimetres)

Ratings & Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20%.

Characteristics	Symbol	ES5A	ES5B	ES5C	ES5D	ES5E	ES5G	ES5J	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 at T_L=75℃	Io	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℃ at rated DC blocking voltage @Ta =100℃	I_R	10 300							μA
Maximum reverse recovery time (Note 1)	Trr	35							ns
Typical junction capacitance (Note 2)	Cj	58							PF
Typical thermal resistance	Rth-JA	47							℃/W
Operating temperature range	Tj	-65 to +150							℃
Storage temperature range	Tstg	-65 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.

Ratings and Characteristic Curves of ES5A~ES5J

FIG. 1- FORWARD CURRENT DERATING CURVE

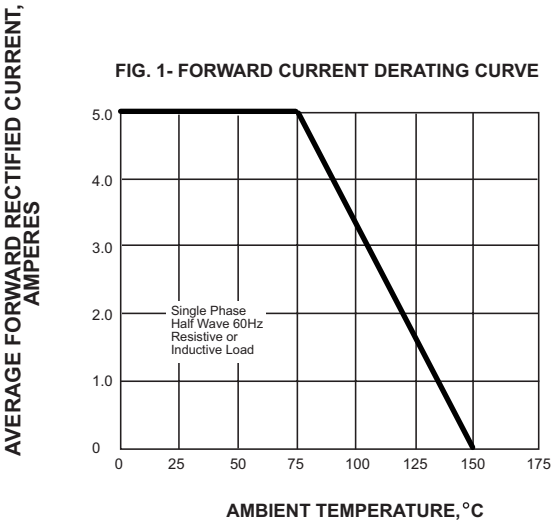


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

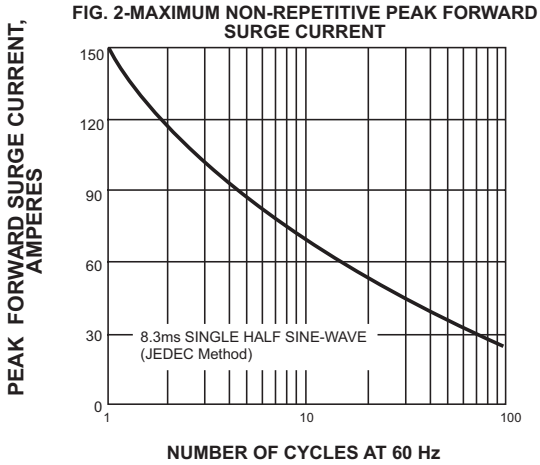


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

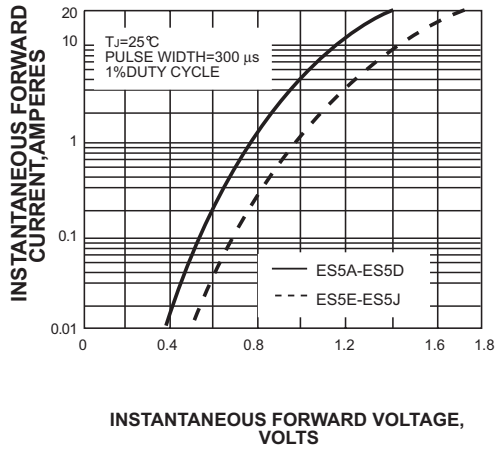


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

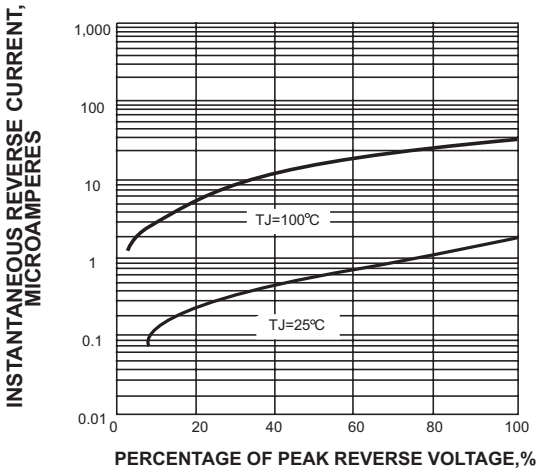


FIG. 5-TYPICAL JUNCTION CAPACITANCE

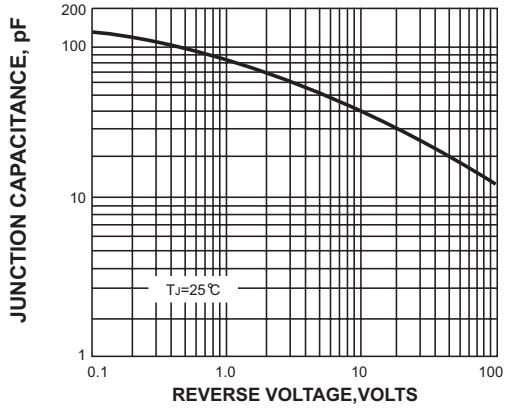


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE