

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

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

#### ES3A~ES3J

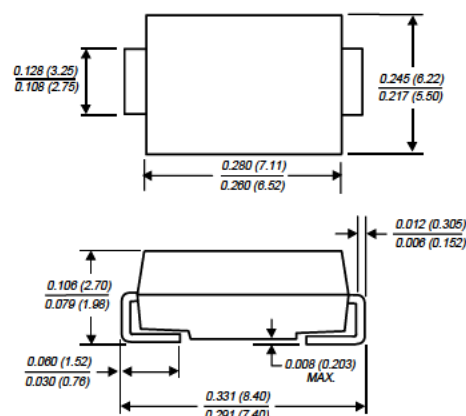
(Package: SMC (DO-214AB))

#### 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 : 260°C/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°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	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	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 @ $T_L=110^\circ\text{C}$	$I_o$	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	$V_F$	0.95			1.30		1.70		Volts
Maximum DC reverse current @ $T_a=25^\circ\text{C}$ at rated DC blocking voltage @ $T_a=100^\circ\text{C}$	$I_R$	10 250							$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$T_{rr}$	35							ns
Typical junction capacitance (Note 2)	$C_j$	45			30				PF
Typical thermal resistance (Note 3)	$R_{th-JA}$ $R_{th-JL}$	47 12							$^\circ\text{C/W}$
Operating temperature range	$T_j$	-55 to +150							$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 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  $V_R=4.0\text{V}$ .
3. Units mounted on P.C.B. with 0.6"x0.6" (16x16mm) copper pad areas.

<http://patron-components.com/>

# Ratings and Characteristic Curves of ES3A~ES3J

AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE

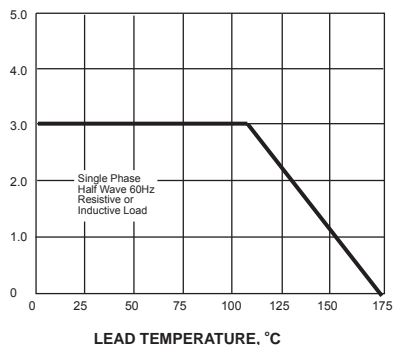


FIG.2 MAXIMUM NON REPETITIVE PEAK FORWARD SURGE CURRENT

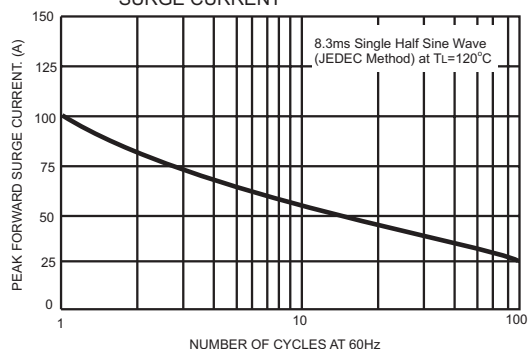


FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

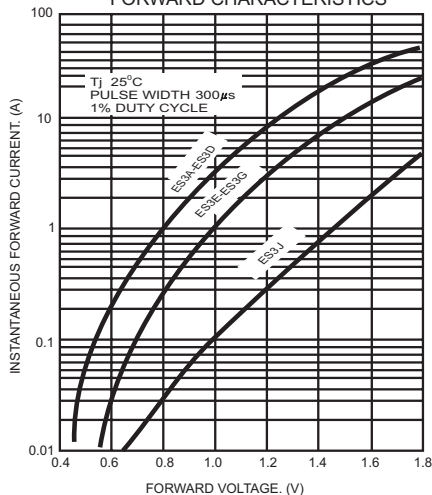


FIG.4 TYPICAL REVERSE CHARACTERISTICS

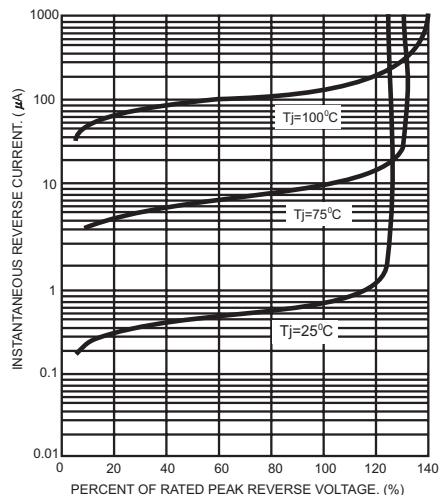


FIG.5 TYPICAL JUNCTION CAPACITANCE

