

III. Fast / Ultra Fast / Super Fast Recovery Rectifier

3.0A Surface Mount Super Fast Recovery Rectifier

ES3A~ES3J

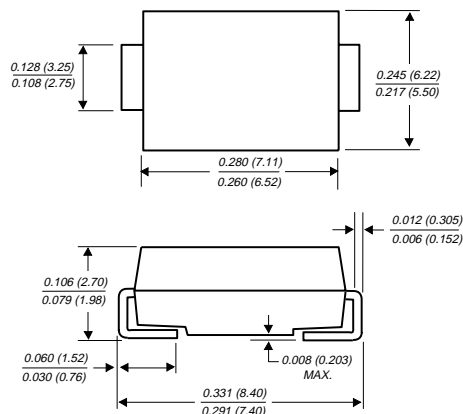
(Package: SMC (DO-214AB))

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 /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 @ $T_L=110$ | 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 @ $T_a=25$ at rated DC blocking voltage @ $T_a=100$ | I_R | 10 | | | | 250 | | | μA |
| 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 | | | /W |
| Operating temperature range | T_j | -55 to +150 | | | | | | | |
| Storage temperature range | T_{stg} | -55 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. Units mounted on P.C.B. with 0.6"x0.6" (16x16mm) copper pad areas.

Ratings and Characteristic Curves of ES3A~ES3J

AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE

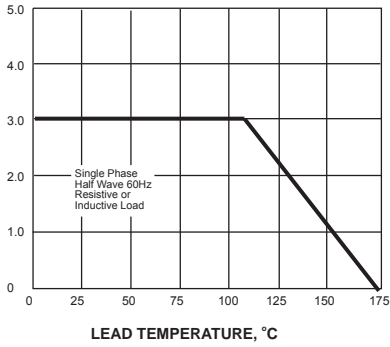


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

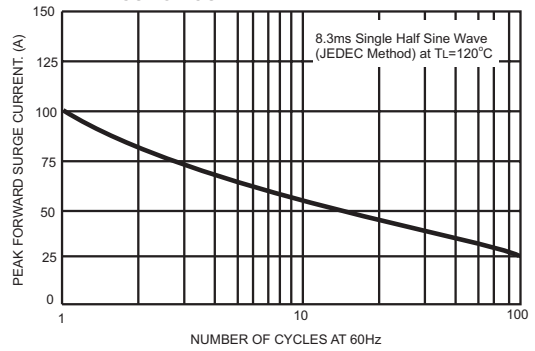


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

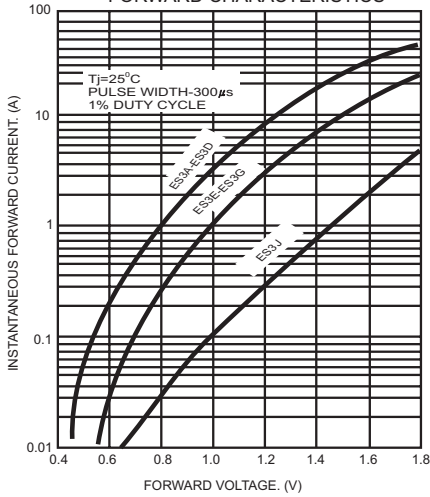


FIG.4- TYPICAL REVERSE CHARACTERISTICS

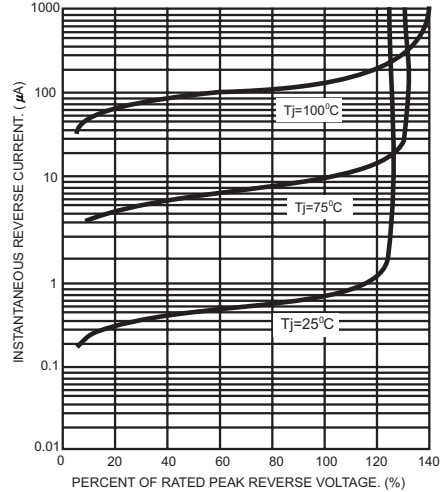


FIG.5- TYPICAL JUNCTION CAPACITANCE

