



SE3A THRU SE3M

SURFACE MOUNT HIGH EFFICIENCY RECTIFIER

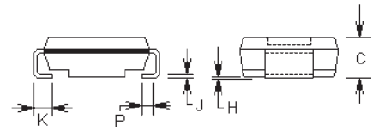
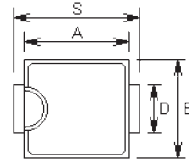
Reverse Voltage - 50 to 1000 Volts

Forward Current - 3.0 Amperes

Features

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Ultrafast recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability classification 94V-0
- High temperature soldering: 260°C/10 seconds at terminals

SMC



Mechanical Data

- **Case:** SMC molded plastic
- **Terminals:** Solder plated solderable per MIL-STD-750, method 2026
- **Polarity:** Indicated by cathode band
- **Weight:** 0.007 ounce, 0.25 gram

| DIM | DIMENSIONS | | | | Note |
|-----|------------|--------|----------|-------|------|
| | inches | | mm | | |
| | Min. | Max. | Min. | Max. | |
| A | 0.260 | 0.280 | 6.60 | 7.11 | |
| B | 0.220 | 0.240 | 5.59 | 6.10 | |
| C | 0.075 | 0.095 | 1.90 | 2.41 | |
| D | 0.115 | 0.121 | 2.92 | 3.07 | |
| H | 0.0020 | 0.0080 | 0.051 | 0.152 | |
| J | 0.006 | 0.012 | 0.15 | 0.30 | |
| K | 0.030 | 0.050 | 0.76 | 1.27 | |
| P | 0.020 REF | | 0.51 REF | | |
| S | 0.305 | 0.320 | 7.75 | 8.13 | |

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Resistive or inductive load.

For capacitive load, derate current by 20%.

| | Symbols | SE3A | SE3B | SE3D | SE3E | SE3G | SE3J | SE3K | SE3M | Units |
|---|-----------------|---------------|------|------|------|-------|------|------|------|--------------------|
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | Volts |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 210 | 280 | 420 | 560 | 700 | Volts |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 300 | 400 | 600 | 800 | 1000 | Volts |
| Maximum average forward rectified current at $T_J=75^\circ\text{C}$ | $I_{(AV)}$ | 3.0 | | | | | | | | Amps |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (MIL-STD-750D 4066 method) $T_A=55^\circ\text{C}$ | I_{FSM} | 100.0 | | | | | | | | Amps |
| Maximum instantaneous forward voltage at 3.0A | V_F | 1.0 | | 1.3 | | 1.5 | | 1.7 | | Volts |
| Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$ | I_R | 10.0 500.0 | | | | | | | | μA |
| Maximum reverse recovery time (Note 1) $T_J=25^\circ\text{C}$ | T_{rr} | 50.0 | | | | 100.0 | | | | nS |
| Typical junction capacitance (Note 2) | C_J | 75.0 | | | | 50.0 | | | | μF |
| Maximum thermal resistance (Note 3) | $R_{\theta JL}$ | 15 | | | | | | | | $^\circ\text{C/W}$ |
| Operating and storage temperature range | T_J, T_{STG} | -50 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 1.0MHz and applied reverse voltage of 4.0 volts
- (3) 8.0mm² (0.013mm thick) land areas

RATINGS AND CHARACTERISTIC CURVES

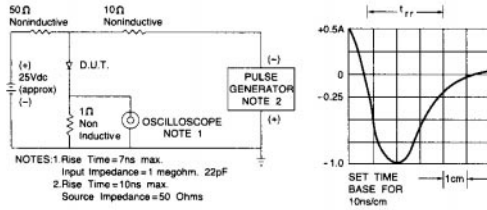


FIG. 1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

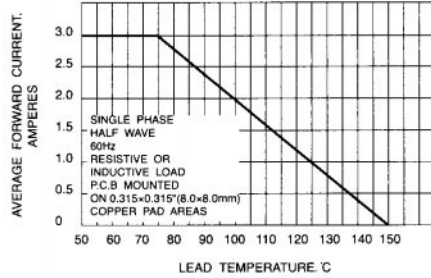


FIG. 2 - MAXIMUM AVERAGE FORWARD CURRENT RATING

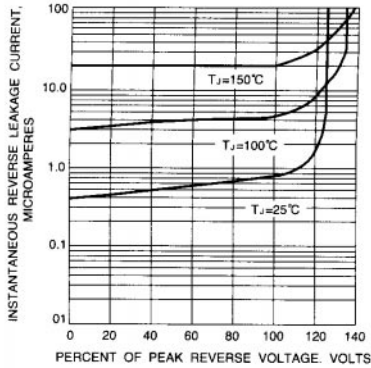


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

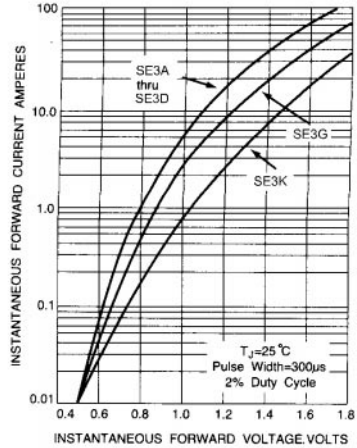


FIG. 4 - TYPICAL FORWARD CHARACTERISTICS

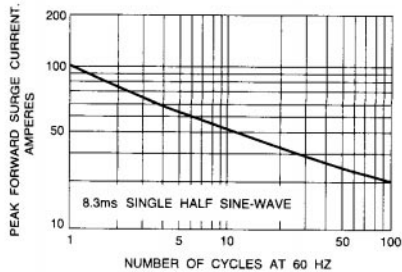


FIG. 5 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

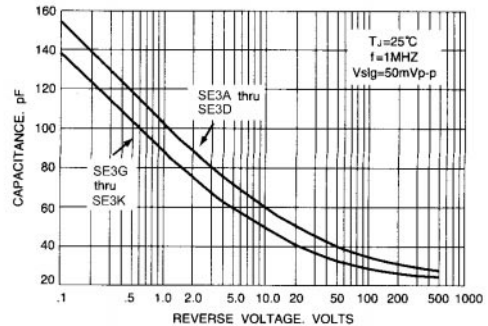


FIG. 6 - TYPICAL JUNCTION CAPACITANCE