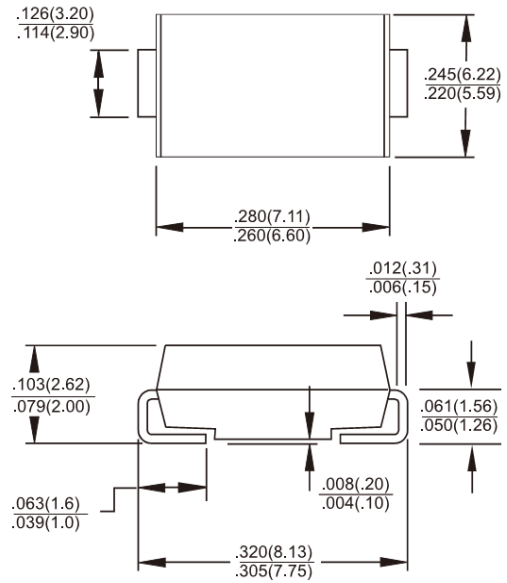


SMC/DO-214AB

Features

- ◇ Glass passivated junction chip
- ◇ For surface mounted application
- ◇ Low profile package
- ◇ Built-in strain relief, Ideal for automated placement
- ◇ Easy pick and place
- ◇ Esuper fast recovery time for high efficiency
- ◇ High temperature soldering guaranteed:
260 °C/10 seconds at terminals
- ◇ Plastic material used carries Underwriters
Laboratory Classification 94V-0
- ◇ Green compound with suffix "G" on packing
code & prefix "G" on datecode
- ◇ High reliability grade (AEC Q101 specified)


Dimensions in inches and (millimeters)
Marking Diagram


- ES3X = Specific Device Code
- G = Green Compound
- Y = Year
- M = Work Month

Mechanical Data

- ◇ Cases: Molded plastic
- ◇ Epoxy: UL 94V-0 rate flame retardant
- ◇ Terminals: Pure tin plated, lead free, solderable per
MIL-STD-202, Method 208 guaranteed
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.21 grams
- ◇ Packing: 16mm tape per EIA STD RS-481

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number | Symbo l | ES 3A | ES 3B | ES 3C | ES 3D | ES 3F | ES 3G | ES 3H | ES 3J | Units |
|---|------------------------------------|---------------|----------|----------|----------|----------|----------|----------|----------|-------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| Maximum RMS Voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 350 | 420 | V |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 500 | 600 | V |
| Maximum Average Forward Rectified see fig. 1 | $I_{F(AV)}$ | 3 | | | | | | | | A |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (IEDEC method) | I_{FSM} | 100 | | | | | | | | A |
| Maximum Instantaneous Forward Voltage (Note 1) @ 3 A | V_F | 0.95 | | | | 1.3 | | 1.7 | | V |
| Maximum DC Reverse Current @ $T_A=25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A=100\text{ }^\circ\text{C}$ | I_R | 10 | | | | 500 | | | | uA |
| Typical Junction Capacitance (Note 2) | C_j | 45 | | | | 30 | | | | pF |
| Typical Reverse Recovery Time (Note 3) | T_{rr} | 35 | | | | | | | | nS |
| Typical Thermal Resistance | $R_{\theta JA}$ $R_{\theta JL}$ | 47 | | | | 12 | | | | °C/W |
| Operating Temperature Range | T_J | - 55 to + 150 | | | | | | | | °C |
| Storage Temperature Range | T_{STG} | - 55 to + 150 | | | | | | | | °C |

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

Note 3: Reverse Recovery Test Conditions: $I_F=0.5A$, $I_R=1.0A$, $I_{RR}=0.25A$

RATINGS AND CHARACTERISTIC CURVES (ES3A THRU ES3J)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

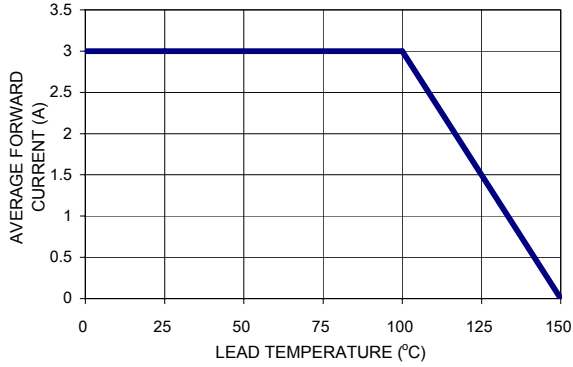


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

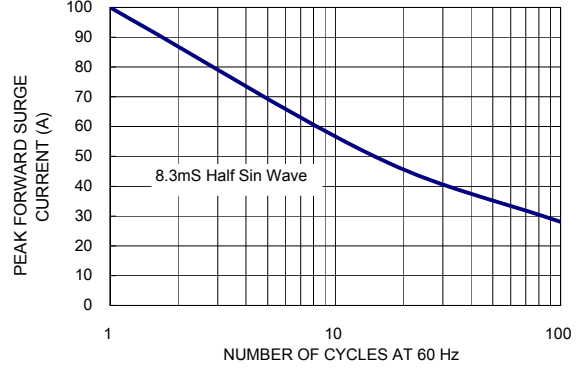


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

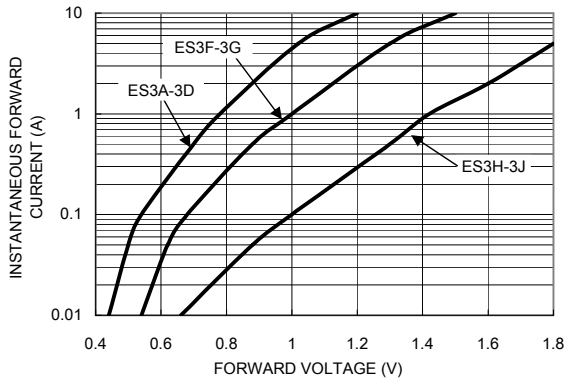


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

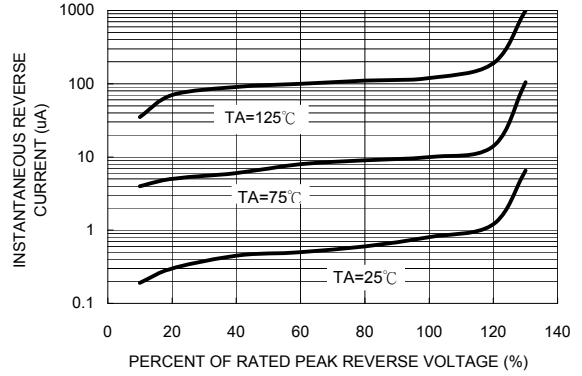


FIG. 5 TYPICAL JUNCTION CAPACITANCE

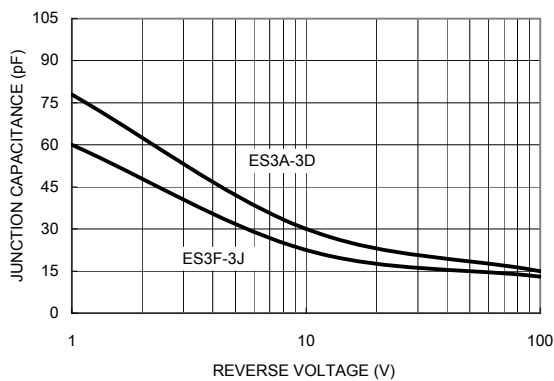


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

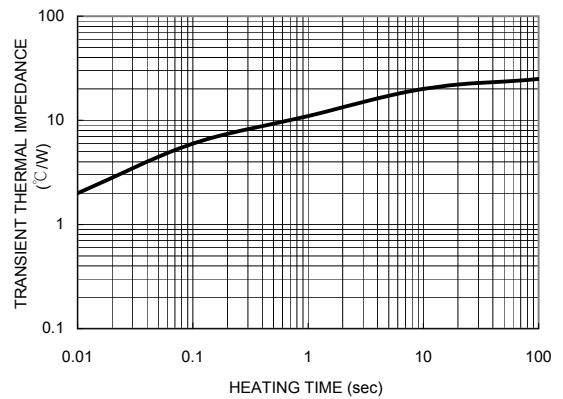


FIG. 7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

