

ES1A - ES1J

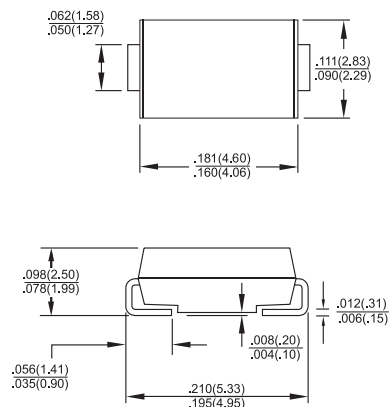
1.0 AMP. Surface Mount Super Fast Rectifiers

SMA/DO-214AC



Features

- ✦ Glass passivated junction chip
- ✦ For surface mounted application
- ✦ Low profile package
- ✦ Built-in strain relief,
- ✦ Ideal for automated placement
- ✦ Easy pick and place
- ✦ Super fast recovery time for high efficiency
- ✦ Glass passivated chip junction
- ✦ High temperature soldering:
260°C/10 seconds at terminals
- ✦ Plastic material used carries Underwriters
Laboratory Classification 94V-0



Mechanical Data

- ✦ Cases: Molded plastic
- ✦ Terminals: Pure tin plated, lead free.
- ✦ Polarity: Indicated by cathode band
- ✦ Packing: 12mm tape per EIA STD RS-481
- ✦ Weight: 0.064 gram

Dimensions in inches and (millimeters)

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 | Symbol | ES 1A | ES 1B | ES 1C | ES 1D | ES 1F | ES 1G | ES 1H | ES 1J | 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 Current See Fig. 1 | $I_{(AV)}$ | 1.0 | | | | | | | | A |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | I_{FSM} | 30 | | | | | | | | A |
| Maximum Instantaneous Forward Voltage @ 1.0A | V_F | 0.95 | | | 1.3 | | 1.7 | | | V |
| Maximum DC Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$ | I_R | 5.0 | | | | 100 | | | | uA uA |
| Maximum Reverse Recovery Time (Note 1) | T_{rr} | 35 | | | | | | | | nS |
| Typical Junction Capacitance (Note 2) | C_j | 10 | | | 8 | | | | | pF |
| Maximum Thermal Resistance (Note 3) | $R_{\theta JA}$ $R_{\theta JL}$ | 85 | | | | 35 | | | | °C/W |
| Operating Temperature Range | T_J | -55 to +150 | | | | | | | | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | | | | | | | | °C |

- Notes:
1. Reverse Recovery Test Conditions: $I_F=0.5A$, $I_R=1.0A$, $I_{RR}=0.25A$
 2. Measured at 1 MHz and Applied $V_R=4.0$ Volts
 3. P.C.B. Mounted on 0.2 x 0.2" (5.0 x 5.0mm) Copper Pad Area.

RATINGS AND CHARACTERISTIC CURVES (ES1A THRU ES1J)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

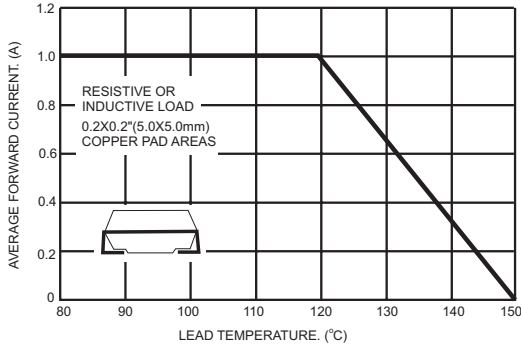


FIG.2- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

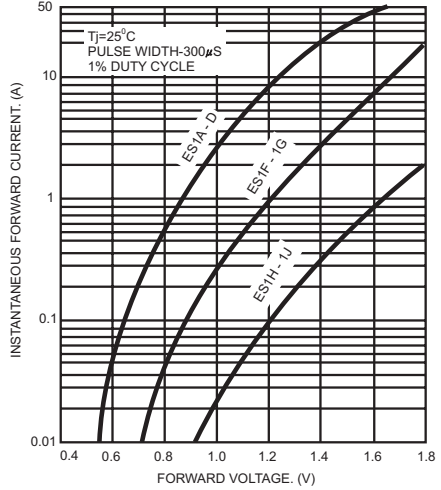


FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

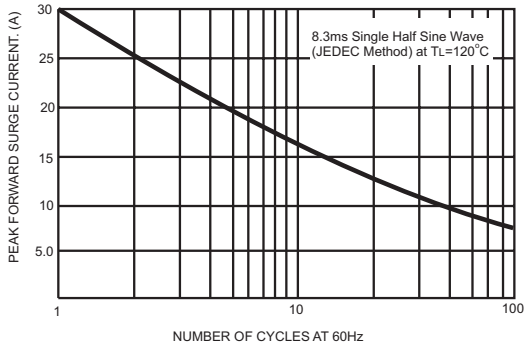


FIG.5- TYPICAL REVERSE CHARACTERISTICS

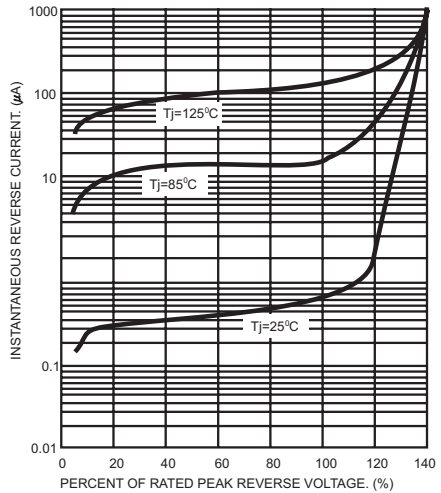


FIG.4- TYPICAL JUNCTION CAPACITANCE

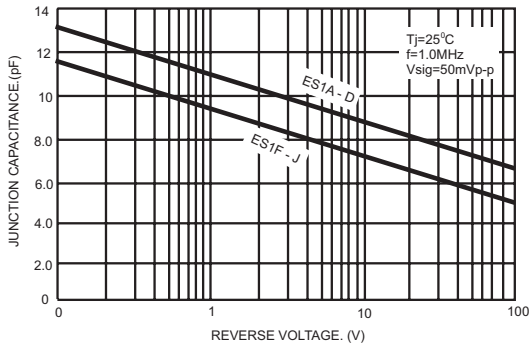


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

