

### ES1A THRU ES1J

VOLTAGE RANGE

50 to 600 Volts

CURRENT

1.0 Ampere

### FEATURES

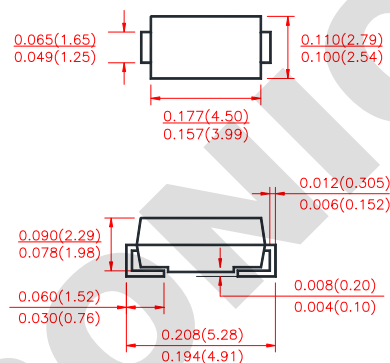
- Plastic package has underwrites laboratory flammability Classification 94V-0
- Glass passivated chip junction
- Built-in strain relief
- Super Fast switching speed for high efficiency
- High temperature soldering guaranteed 250°C/10 seconds

### MECHANICAL DATA

Case: Transfer molded plastic

- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end

### DO-214AC(SMA)



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified.
- Single phase, half wave, 60Hz, resistive or inductive load.
- For capacitive load derate current by 20%.

|                                                                                                                     |                        | SYMBOLS           | ES1A          | ES1B | ES1C | ES1D | ES1E | ES1G | ES1J | UNIT  |
|---------------------------------------------------------------------------------------------------------------------|------------------------|-------------------|---------------|------|------|------|------|------|------|-------|
| Maximum Repetitive Peak Reverse Voltage                                                                             |                        | V <sub>RRM</sub>  | 50            | 100  | 150  | 200  | 300  | 400  | 600  | Volts |
| Maximum RMS Voltage                                                                                                 |                        | V <sub>RMS</sub>  | 35            | 70   | 105  | 140  | 210  | 280  | 420  | Volts |
| Maximum DC Blocking Voltage                                                                                         |                        | V <sub>DC</sub>   | 50            | 100  | 150  | 200  | 300  | 400  | 600  | Volts |
| Maximum Average Forward Rectified Current<br>At T <sub>A</sub> =55°C(NOTE 1)                                        |                        | I <sub>(AV)</sub> | 1.0           |      |      |      |      |      |      | Amps  |
| Peak Forward Surge Current<br>8.3ms single half sine wave superimposed on<br>rated load (JEDEC Method)              |                        | I <sub>FSM</sub>  | 30            |      |      |      |      |      |      | Amps  |
| Maximum Instantaneous Forward Voltage at 1.0A                                                                       |                        | V <sub>F</sub>    | 0.95          |      |      |      | 1.25 |      | 1.7  | Volts |
| Maximum DC Reverse Current<br>at rated DC blocking voltage at                                                       | T <sub>A</sub> = 25°C  | I <sub>R</sub>    | 5.0           |      |      |      |      |      |      | μA    |
|                                                                                                                     | T <sub>A</sub> = 125°C |                   | 100           |      |      |      |      |      |      |       |
| Maximum Reverse Recovery Time<br>Test conditions I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A |                        | t <sub>rr</sub>   | 35            |      |      |      |      |      |      | nS    |
| Typical Junction Capacitance<br>(Measured at 1.0MHz and applied reverse voltage of 4.0V)                            |                        | C <sub>J</sub>    | 10            |      |      |      | 8    |      |      | pF    |
| Typical Thermal Resistance (NOTE 1)                                                                                 |                        | R <sub>θJA</sub>  | 88            |      |      |      |      |      |      | °C/W  |
|                                                                                                                     |                        | R <sub>θJL</sub>  | 28            |      |      |      |      |      |      |       |
| Operating Junction Temperature                                                                                      |                        | T <sub>J</sub>    | (-55 to +150) |      |      |      |      |      |      | °C    |
| Storage Temperature Range                                                                                           |                        | T <sub>STG</sub>  | (-55 to +150) |      |      |      |      |      |      | °C    |

Notes:

- Thermal resistance from Junction to ambient and from junction to lead mounted on PCB. with 0.2×0.2" (5.0 × 5.0mm) copper pad areas.

## RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

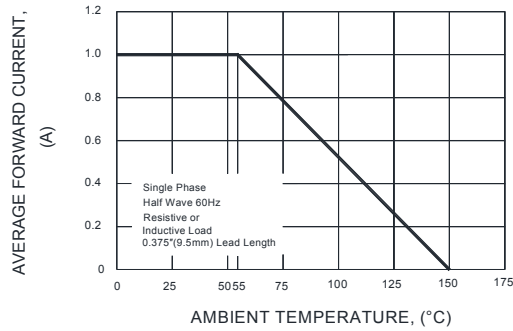


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

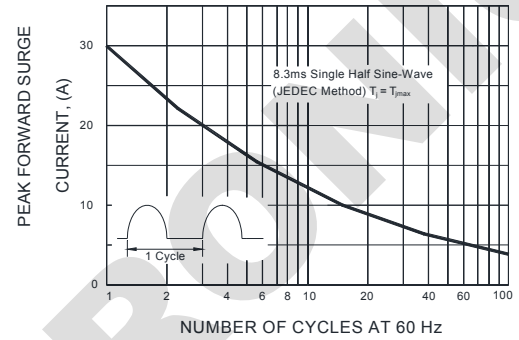


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

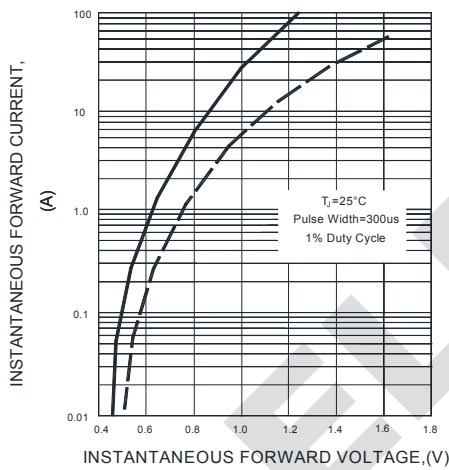


FIG.4-TYPICAL REVERSE CHARACTERISTICS

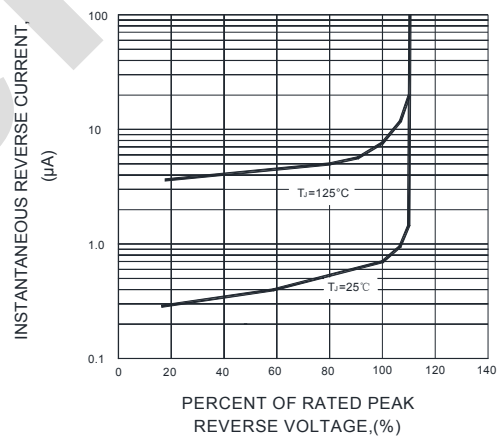


FIG.5-TYPICAL JUNCTION CAPACITANCE

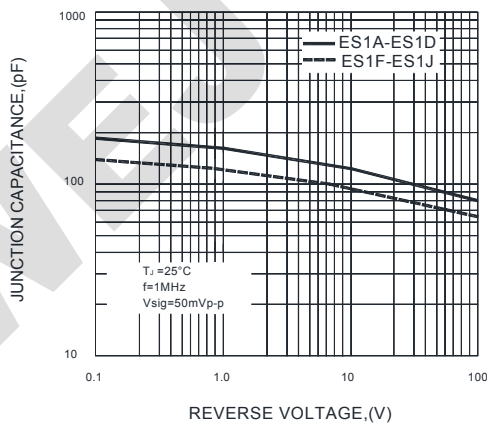
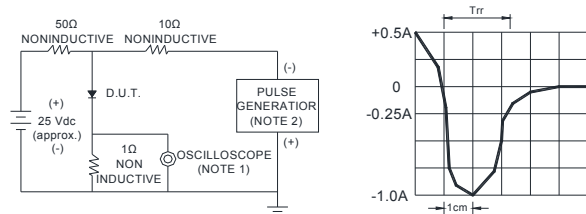


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES : 1.Rise Time=7ns max. Input Impedance=1 magohm. 22pF  
2.Rise time=10ns max. Source Impedance=50 ohms

SET TIME BASE FOR 50/100ns/cm