

## Surface Mount Super Fast Recovery Rectifier Diode

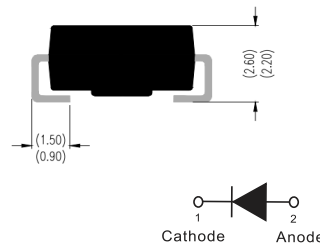
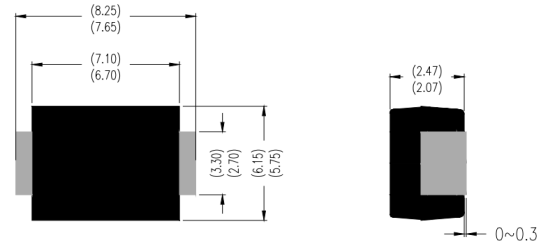
### Features

- Glass passivated junction chip
- Ideal for automated placement
- Super fast recovery time for high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

### Mechanical Data

- **Package:** DO-214AB (SMC)
- **Polarity:** Color band denotes the cathode end
- **Epoxy:** UL 94V-0 rate flame retardant
- **Mounting Position:** Any

DO-214AB (SMC)



Unit : mm

### Absolute Maximum Ratings and Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                                                                                                    | Symbol                                                   | ES8AC          | ES8BC | ES8CC | ES8DC | ES8EC | ES8GC | ES8JC | Unit             |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------|-------|-------|-------|-------|-------|-------|------------------|
| Maximum Repetitive Peak Reverse Voltage                                                                      | V <sub>RRM</sub>                                         | 50             | 100   | 150   | 200   | 300   | 400   | 600   | V                |
| Maximum RMS voltage                                                                                          | V <sub>RMS</sub>                                         | 35             | 70    | 105   | 140   | 210   | 280   | 420   | V                |
| Maximum DC Blocking Voltage                                                                                  | V <sub>DC</sub>                                          | 50             | 100   | 150   | 200   | 300   | 400   | 600   | V                |
| Maximum Average Forward Rectified Current @ Fig.1                                                            | I <sub>F(AV)</sub>                                       | 8              |       |       |       |       |       |       | A                |
| Peak Forward Surge Current,8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)             | I <sub>FSM</sub>                                         | 125            |       |       |       |       |       |       | A                |
| Peak Forward Surge Current,1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)             | I <sub>FSM</sub>                                         | 250            |       |       |       |       |       |       | A                |
| I <sup>2</sup> t Rating for fusing (3ms≤t≤8.3ms)                                                             | I <sup>2</sup> t                                         | 64.8           |       |       |       |       |       |       | A <sup>2</sup> S |
| Max Instantaneous Forward Voltage at 8 A                                                                     | V <sub>F</sub>                                           | 0.98           |       |       |       | 1.3   |       | 1.7   | V                |
| Maximum DC Reverse Current      T <sub>a</sub> = 25°C at Rated DC Reverse Voltage      T <sub>a</sub> =125°C | I <sub>R</sub>                                           | 10<br>350      |       |       |       |       |       |       | μA               |
| Typical Junction Capacitance <sup>(1)</sup>                                                                  | C <sub>j</sub>                                           | 189            |       |       |       | 123   |       | 80    | pF               |
| Maximum Reverse Recovery Time <sup>(2)</sup>                                                                 | t <sub>rr</sub>                                          | 35             |       |       |       |       |       |       | ns               |
| Typical Thermal Resistance <sup>(3)</sup>                                                                    | R <sub>θJA</sub><br>R <sub>θJC</sub><br>R <sub>θJL</sub> | 37<br>10<br>13 |       |       |       |       |       |       | °C/W             |
| Operating and Storage Temperature Range                                                                      | T <sub>j</sub> , T <sub>stg</sub>                        | -55 ~+150      |       |       |       |       |       |       | °C               |

(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) Measured with  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $t_{rr} = 0.25\text{ A}$ .

(3) P.C.B. mounted with 1.5" X 1.5" (3.81 X 3.81 cm) copper pad areas.

## Characteristics Curves

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

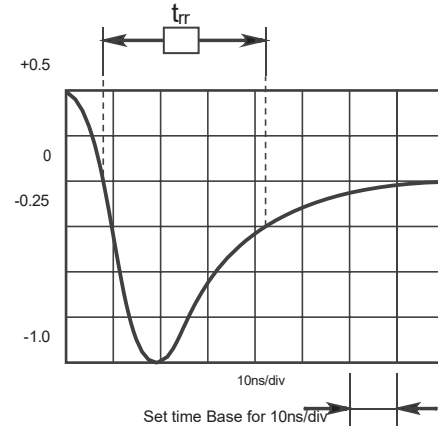
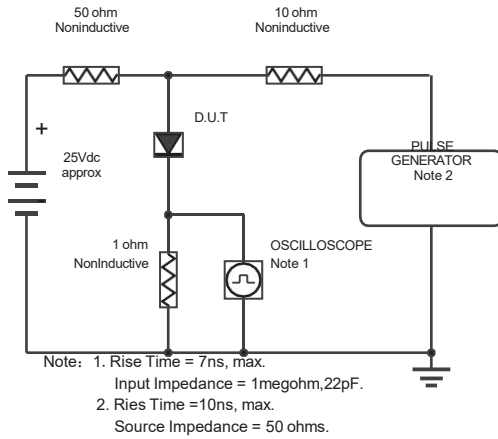


Fig.1 Forward Current Derating Curve

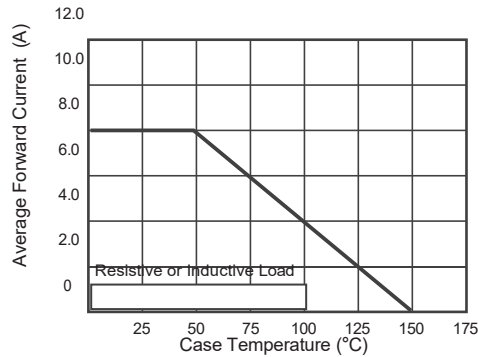


Fig.3 Typical Forward Characteristics

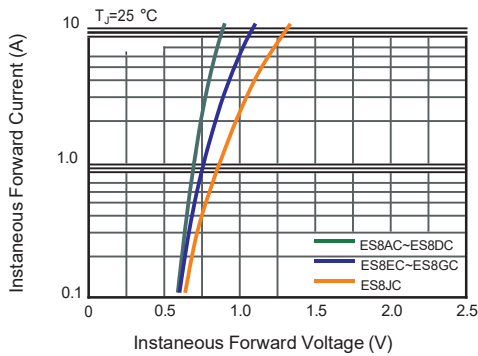


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

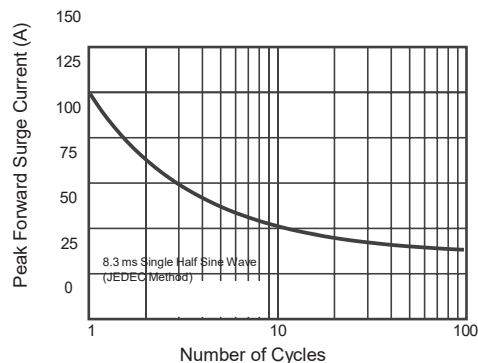


Fig.2 Typical Reverse Characteristics

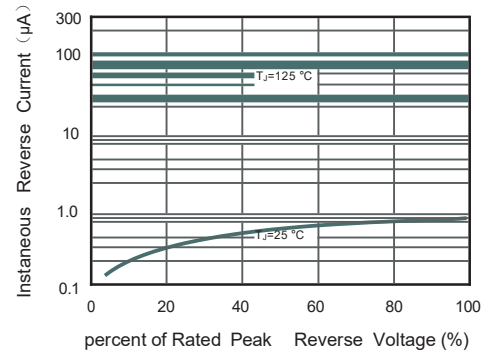


Fig.4 Typical Junction Capacitance

