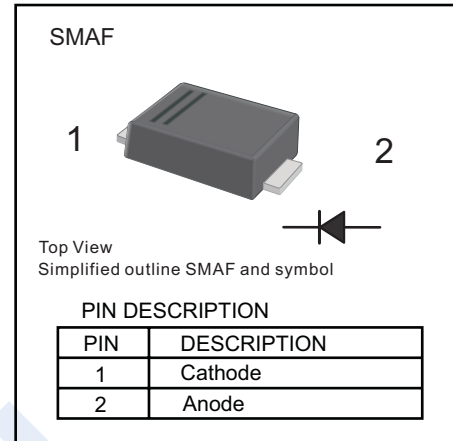


Superfast Recovery Rectifier

ES1AF ~ ES1JF

■ Features

- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | ES 1AF | ES 1BF | ES 1CF | ES 1DF | ES 1EF | ES 1GF | ES 1JF | Unit |
|---|-------------|--------|--------|--------|------------|--------|--------|--------|---------------------------|
| Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Surge Peak Reverse Voltage | V_{RSM} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | |
| Instantaneous Forward Voltage at 1A | V_F | 1 | | | 1.25 | | 1.68 | | |
| Averaged Forward Current $T_C=125^\circ\text{C}$ | $I_{F(AV)}$ | | | | 1 | | | | A |
| Peak forward surge current | I_{FSM} | | | | 30 | | | | |
| Maximum DC Reverse Current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$ | I_R | | | | 5 | | | | μA |
| Typical Junction Capacitance *1 | C_j | | | | 15 | | | | pF |
| Maximum Reverse Recovery Time *2 | t_{rr} | | | | 35 | | | | ns |
| Typical thermal resistance *3 | R_{thJA} | | | | 80 | | | | $^\circ\text{C}/\text{W}$ |
| Junction Temperature | T_j | | | | 150 | | | | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | | | -55 to 150 | | | | |

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

* 2 Measured with $I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{rr} = 0.25\text{A}$.

* 3. P.C.B mounted with 2" × 2" (35×5 cm) copper pad areas.

■ Marking

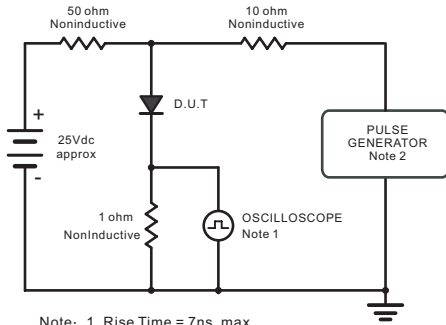
| NO. | ES1AF | ES1BF | ES1CF | ES1DF | ES1EF | ES1GF | ES1JF |
|---------|-------|-------|-------|-------|-------|-------|-------|
| Marking | ES1A | ES1B | ES1C | ES1D | ES1E | ES1G | ES1J |

Superfast Recovery Rectifier

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Typical Characteristics

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
Input Impedance = 1 megohm, 22pF.
2. Rises Time = 10ns, max.
Source Impedance = 50 ohms.

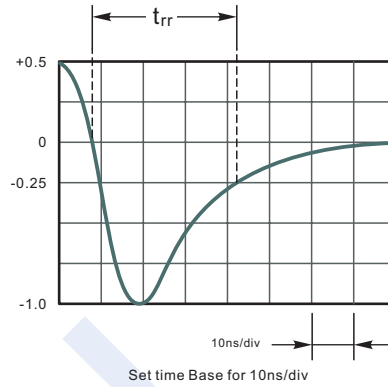


Fig.2 Maximum Average Forward Current Rating

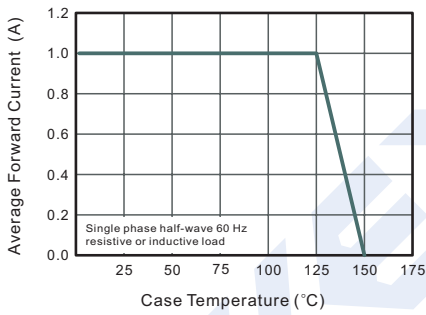


Fig.3 Typical Reverse Characteristics

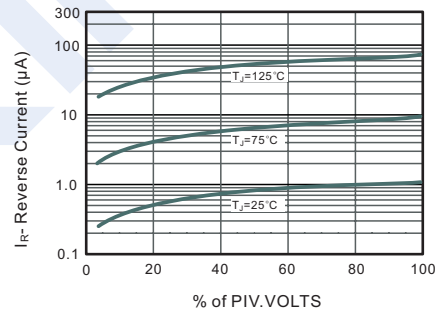


Fig.4 Typical Forward Characteristics

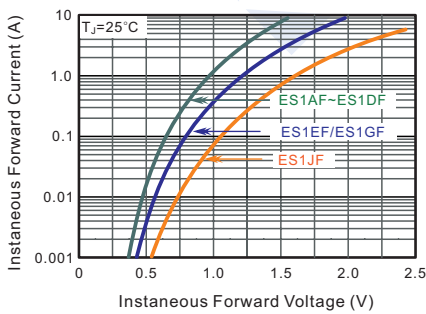


Fig.5 Typical Junction Capacitance

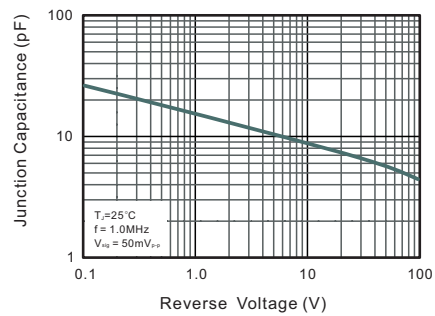
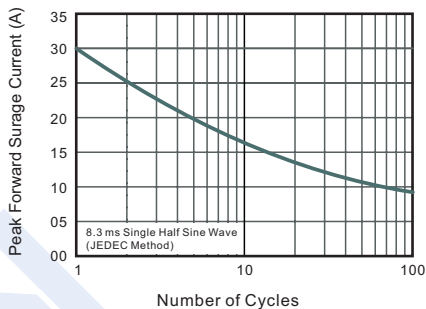


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



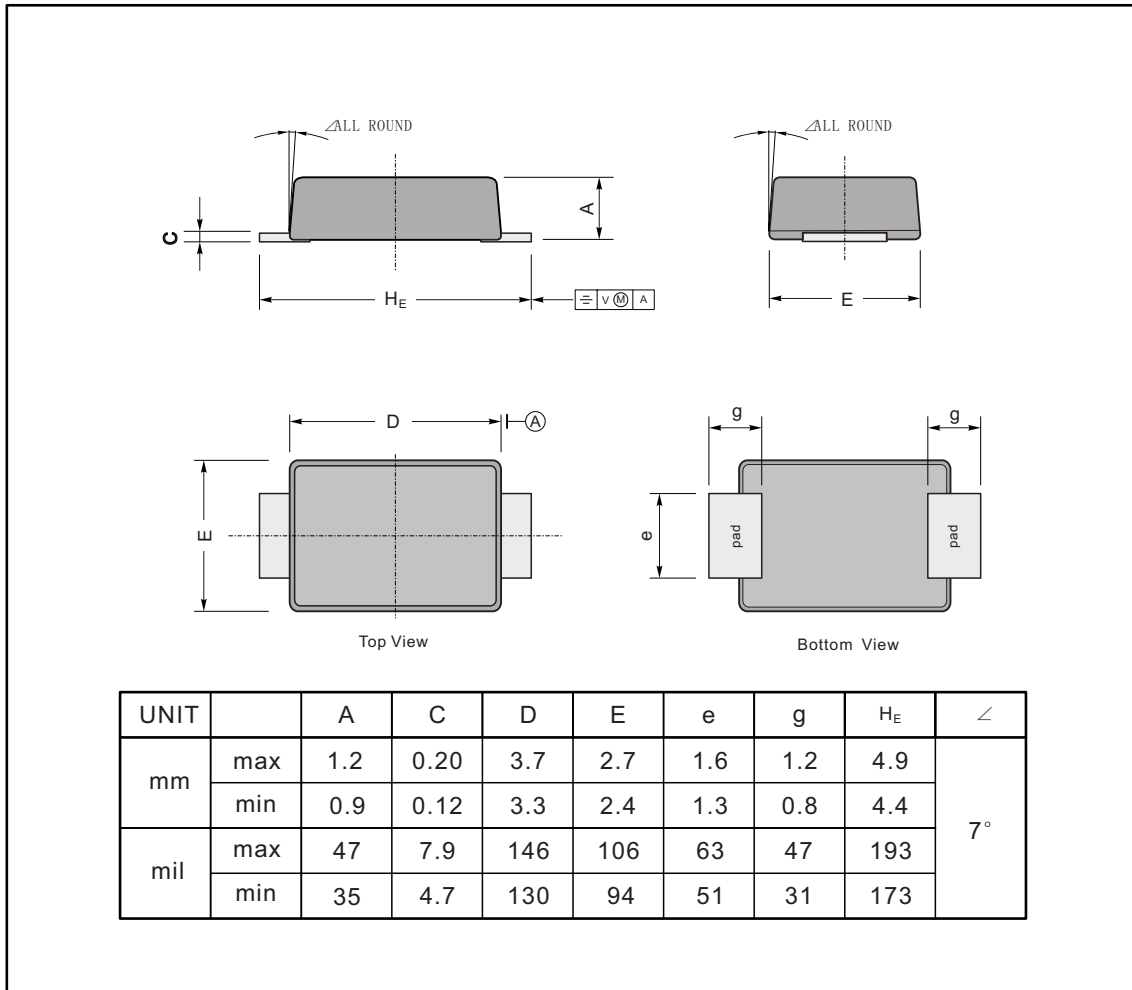
Superfast Recovery Rectifier

ES1AF ~ ES1JF

■ Package Outline Dimensions

Plastic surface mounted package; 2 leads

SMAF



■ The recommended mounting pad size

