

Surface Mount Superfast Recovery Rectifier

Reverse Voltage – 50 to 600 V Forward Current – 3 A

FEATURES

- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

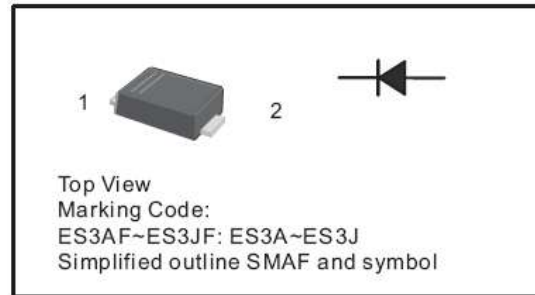
- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- pprox. Weight: 27mg 0.00086oz

Absolute Maximum Ratings and Characteristics

Ratings 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%.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



| Parameter | Symbols | ES3AF | ES3BF | ES3CF | ES3DF | ES3EF | ES3GF | ES3JF | Units |
|--|----------------|------------|-------|-------|-------|-------|-------|-------|------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V |
| Maximum DC Blocking Voltage | V_{DC} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | V |
| Maximum Average Forward Rectified Current at $T_L = 100^\circ\text{C}$ | $I_{F(AV)}$ | 3 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) | I_{FSM} | 100 | | | | | | | A |
| Maximum Forward Voltage at 3A | V_F | 1 | | | 1.25 | | 1.7 | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$ | I_R | 5 200 | | | | | | | μA |
| Typical Junction Capacitance at $V_R=4\text{V}$, $f=1\text{MHz}$ | C_j | 45 | | | | | | | pF |
| Maximum Reverse Recovery Time at $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$ | t_{rr} | 35 | | | | | | | ns |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | | | | | | | $^\circ\text{C}$ |

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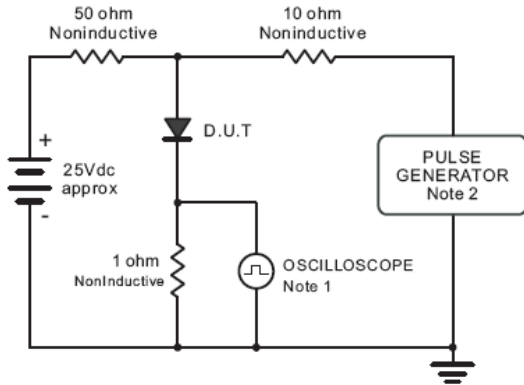
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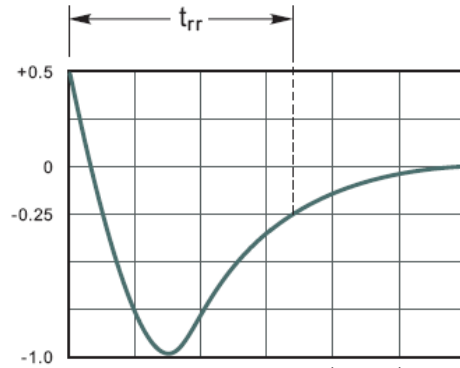


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Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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



Set time Base for 10ns/div

Fig.2 Maximum Average Forward Current Rating

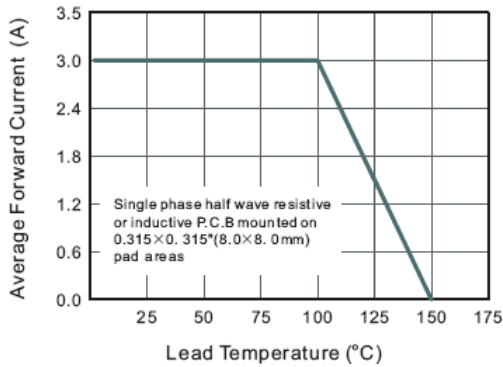


Fig.3 Typical Reverse Characteristics

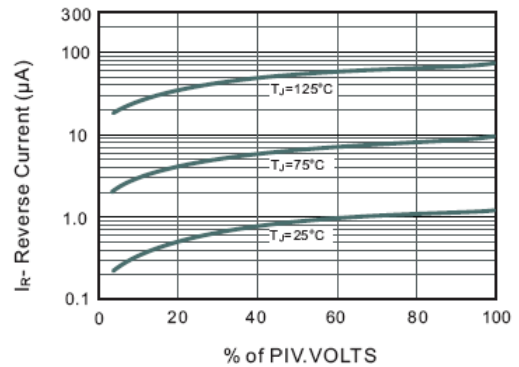


Fig.4 Typical Forward Characteristics

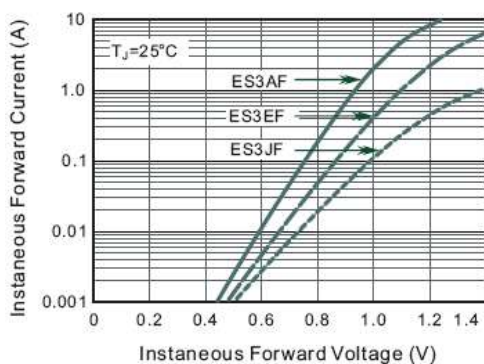
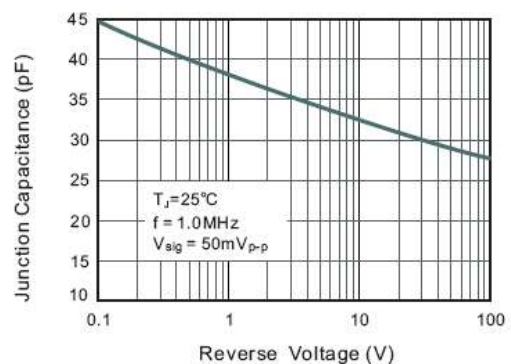


Fig.5 Typical Junction Capacitance



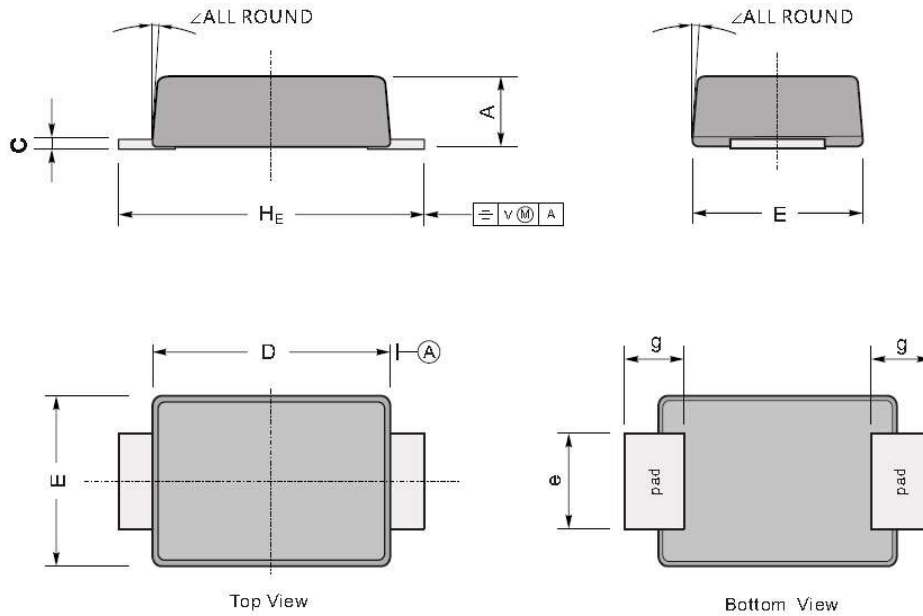
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PACKAGE OUTLINE

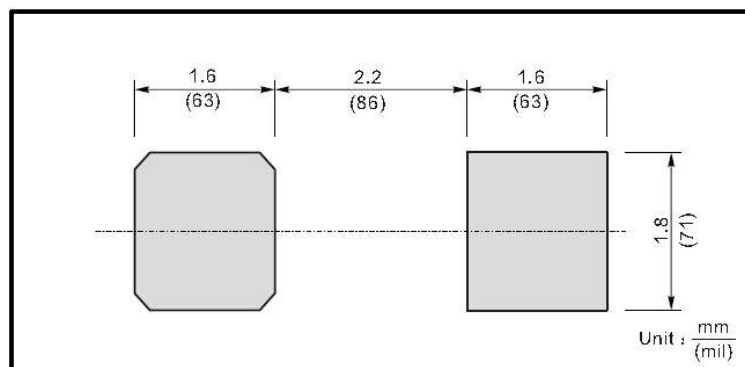
Plastic surface mounted package; 2 leads

SMAF



| UNIT | | A | C | D | E | e | g | H _E | ∠ |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| mm | max | 1.1 | 0.20 | 3.7 | 2.7 | 1.6 | 1.2 | 4.9 | 7° |
| | min | 0.9 | 0.12 | 3.3 | 2.4 | 1.3 | 0.8 | 4.4 | |
| mil | max | 43 | 7.9 | 146 | 106 | 63 | 47 | 193 | |
| | min | 35 | 4.7 | 130 | 94 | 51 | 31 | 173 | |

The recommended mounting pad size



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