

# ES3AF THRU ES3JF-HAF

## Surface Mount Superfast Recovery Rectifier

Reverse Voltage - 50 to 600 V

Forward Current - 3 A

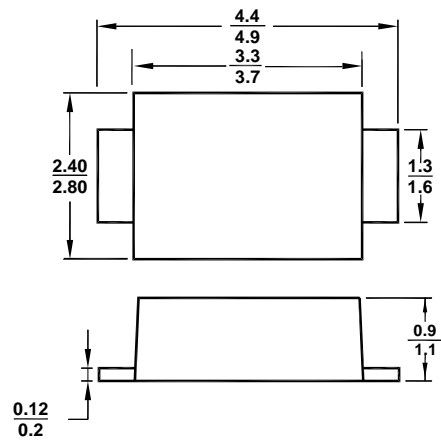
### Features

- Glass Passivated Chip Junction
- For surface mounted applications
- Low profile package
- Superfast reverse recovery time
- Halogen and Antimony Free(HAF), RoHS compliant

### Mechanical Data

- **Case:** SMAF
- **Terminals:** Solderable per MIL-STD-750, Method 2026

### SMAF



All Dimensions in mm

### 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%.

| Parameter  | Symbols         | ES3AF         | ES3BF | ES3CF | ES3DF | ES3EF | ES3GF | ES3JF | Units              |
|--|-----------------|---------------|-------|-------|-------|-------|-------|-------|--------------------|
|  | Marking         | ES3A          | ES3B  | ES3C  | ES3D  | ES3E  | ES3G  | ES3J  | -                  |
| 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 $T_L = 100^\circ\text{C}$  | $I_{F(AV)}$     | 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 3 A   | $V_F$           | 1             |       |       | 1.25  |       | 1.68  |       | V                  |
| Maximum Reverse Current at $T_A = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage at $T_A = 125^\circ\text{C}$ | $I_R$           | 5<br>100      |       |       |       |       |       |       | $\mu\text{A}$      |
| Typical Junction Capacitance   | $C_J$           | 45            |       |       |       |       |       |       | pF                 |
| Maximum Reverse Recovery Time at $I_F = 0.5 \text{ A}$ , $I_R = 1 \text{ A}$ , $t_{rr} = 0.25 \text{ A}$         | $t_{rr}$        | 35            |       |       |       |       |       |       | ns                 |
| Typical Thermal Resistance <sup>1)</sup>   | $R_{\theta JA}$ | 60            |       |       |       |       |       |       | $^\circ\text{C/W}$ |
| Operating Junction and Storage Temperature Range   | $T_j, T_{stg}$  | - 55 to + 150 |       |       |       |       |       |       | $^\circ\text{C}$   |

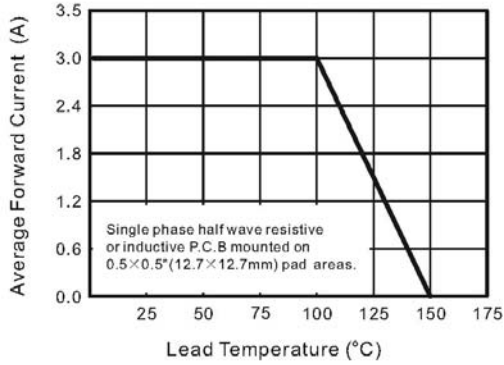
<sup>1)</sup> P.C.B. mounted with 0.5 X 0.5" (12.7 X 12.7 mm) copper pad areas.

**TOP DYNAMIC**

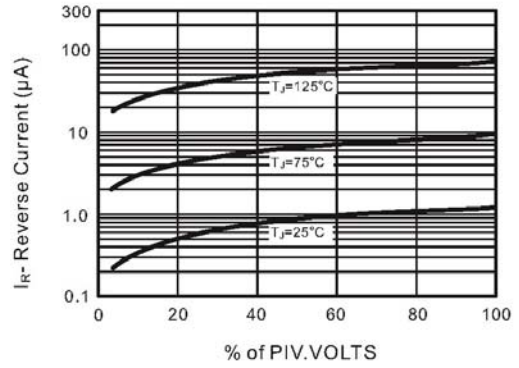


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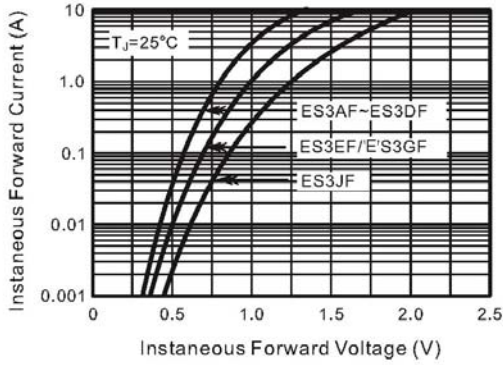
Maximum Average Forward Current Rating



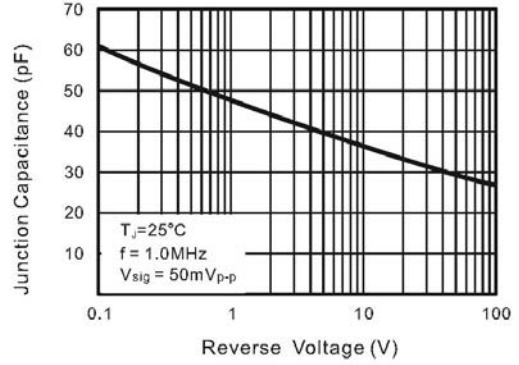
Typical Reverse Characteristics



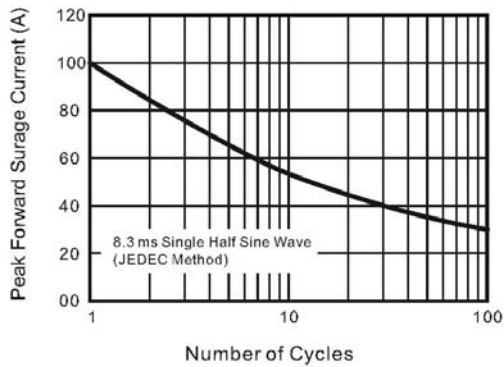
Typical Forward Characteristics



Typical Junction Capacitance



Maximum Non-Repetitive Peak Forward Surge Current



**TOP DYNAMIC**

