# ES1AF THRU ES1KF

Surface Mount Super Fast Recovery Rectifier

## Essential information; basic information

**Features**

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time

**Typical Applications**

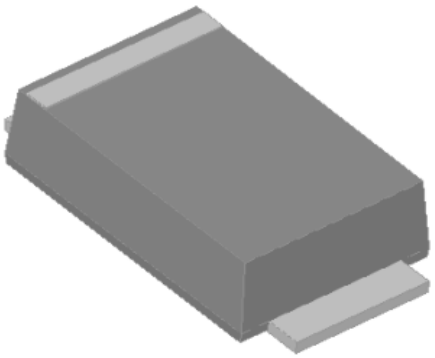
For use in high frequency of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

**Mechanical Data**

- Package: SMAF-L

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant

- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity: Cathode line denotes the cathode end





## Maximum Ratings (Ta=25℃ Unless otherwise specified）

| PARAMETER | SYMBOL | UNIT | ES1AF | ES1BF | ES1DF | ES1GF | ES1HF | ES1JF | ES1KF |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Repetitive peak reverse voltage | VRRM | V | 50 | 100 | 200 | 400 | 500 | 600 | 800 |
| Maximum RMS Voltage | VRMS | V | 35 | 70 | 140 | 280 | 350 | 420 | 560 |
| Maximum DC Blocking Voltage | VDC | V | 50 | 100 | 200 | 400 | 500 | 600 | 800 |
| AverageRectifiedOutputCurrent@60Hz sine wave, resistance load, TL (Fig.1) | IO | A | 1.0 | | | | | | |
| ForwardSurgeCurrent(Non-repetitive) @60Hz Half-sine wave,1 cycle,Tj=25℃ | IFSM | A | 25 | | | | | | |
| Storage temperature | Tstg | ℃ | -55 ~ +150 | | | | | | |
| Junction temperature | Tj | ℃ | -55 ~ +150 | | | | | | |
| Maximum instantaneous forward voltage drop per diode | VF（IFM=1.0A） | V | 1.0 | | | 1.3 | 1.7 | | 1.85 |
| Maximum reverse recovery time | Trr ns | IF=0.5A, IR=1.0A, Irr=0.25A | 35 | | | | | | |
| Maximum DC reverse current at rated DC blocking voltage per diode | IR（Tj =25℃） | μ A | 5 | | | | | | |
| | IR（Tj =125℃） | | 100 | | | | | | |



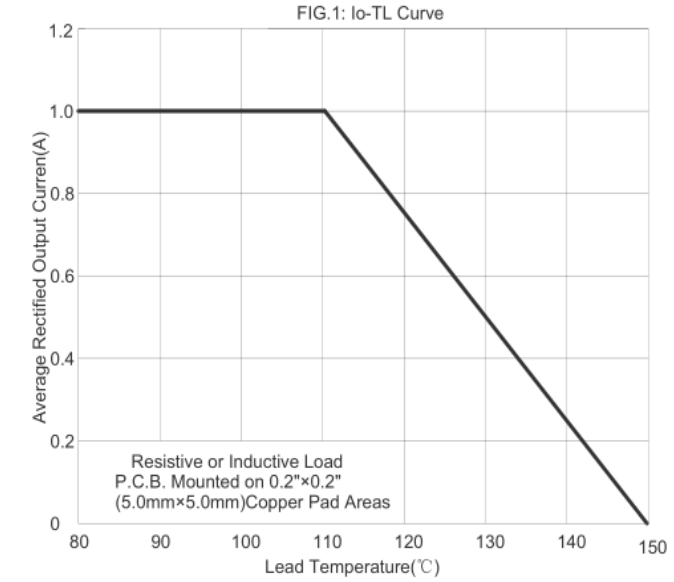
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## Thermal Characteristics （Ta=25℃ Unless otherwise specified）

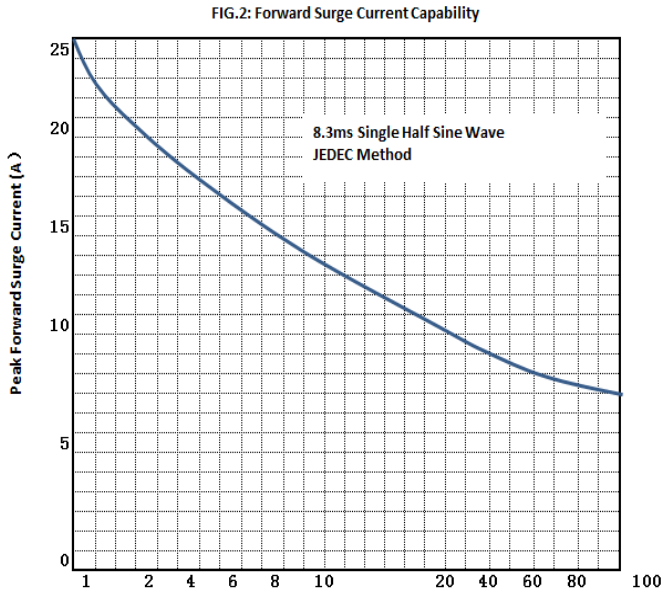
| PARAMETER | SYMBOL | UNIT | ES1AF | ES1BF | ES1DF | ES1GF | ES1HF | ES1JF | ES1KF |
|---|---|---|---|---|---|---|---|---|---|
| Typical Thermal resistance | RθJ-A(1) | ℃/W | 60 | | | | | | |
| | RθJ-L(1) | | 20 | | | | | | |
| | RθJ-C(1) | | 18 | | | | | | |

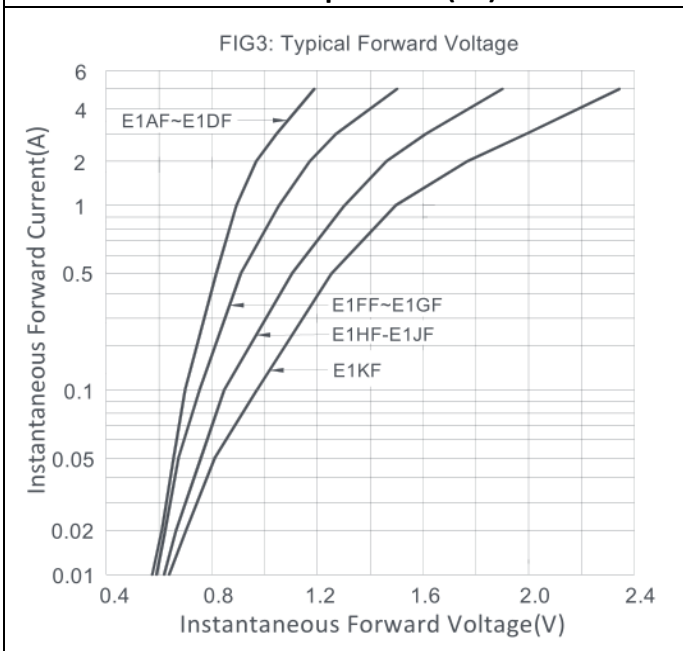
Note:(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## Characteristics (Typical)

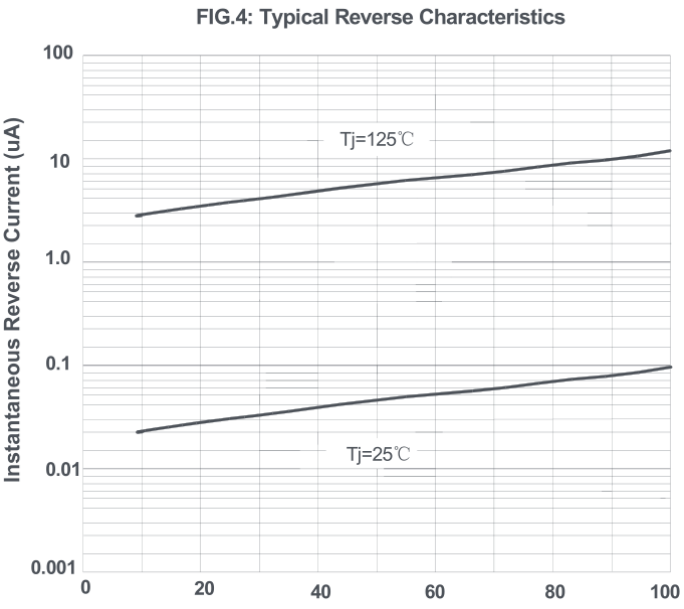



Lead Temperature (℃)




Instantaneous Forward Voltage(V)




Percent of Rated Peak Reverse Voltage (%)

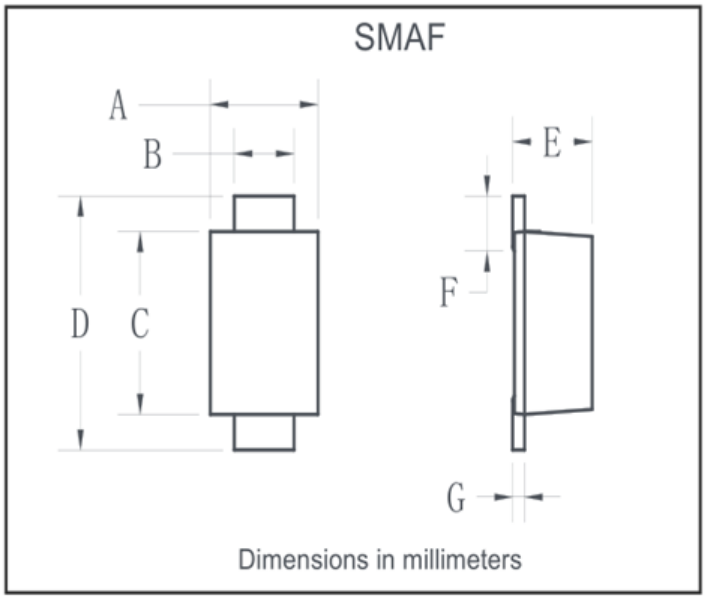


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## Ordering Information (Example)

| type specification | manner of packin | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|
| ES1AF-ES1KF （SMAF-L） | T/B | 3000 | 18000 | 180000 | 7” reel |
| | | 3000 | 21000 | 210000 | 7” reel |
| | | 3000 | 24000 | 240000 | 7” reel |
| | | 5000 | 10000 | 100000 | 11” reel |
| | | 10000 | 20000 | 200000 | 13” reel |

## Outline Dimensions




| SMAF | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.30 | 2.80 |
| B | 1.25 | 1.45 |
| C | 3.40 | 3.60 |
| D | 4.20 | 4.80 |
| E | 0.95 | 1.25 |
| F | 0.40 | 1.00 |
| G | 0.10 | 0.20 |

## Disclaimer

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