

# US1AF~US1MF

Rev.E Nov.-2017

## 描述 / Descriptions

超快恢复二极管，反向电压：50V~1000V，正向电流：1.0A，薄型 SMAF 封装。  
Surface Mount Ultrafast Recovery Rectifier, Reverse Voltage: 50 to 1000V, Forward Current: 1.0A, SMAF thin package.

## 特征 / Features

玻璃钝化芯片，效率高，无铅符合 2011/65/EU 欧盟 RoHS 指令，适用于表面贴装。无卤产品。  
Glass Passivated Chip Junction, High efficiency, Lead free in comply with EU RoHS 2011/65/EU directives, For surface mounted applications. Halogen free product.

## 用途 / Applications

一般用途。  
General purpose.

## 内部等效电路 / Equivalent Circuit

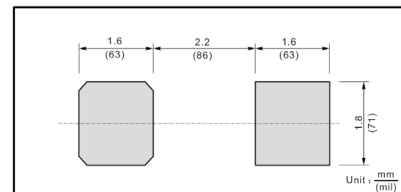


## 引脚排列 / Pinning



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

The recommended mounting pad size



## 印章代码 / Marking

见印章说明。 See Marking Instructions.

**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter   | 参数符号<br>Symbol  | 数值<br>Rating |       |       |       |       |       |       | 单位<br>Unit |
|---|-----------------|--------------|-------|-------|-------|-------|-------|-------|------------|
|   |                 | US1AF        | US1BF | US1DF | US1GF | US1JF | US1KF | US1MF |            |
| Maximum Repetitive Peak Reverse Voltage   | $V_{RRM}$       | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | V          |
| Maximum RMS voltage   | $V_{RMS}$       | 35           | 70    | 140   | 280   | 420   | 560   | 700   | V          |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | V          |
| Maximum Average Forward Rectified Current at Ta = 65°C  | $I_{F(AV)}$     | 1.0          |       |       |       |       |       |       | A          |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) | $I_{FSM}$       | 30           |       |       |       |       |       |       | A          |
| Typical Thermal Resistance  | $R_{\theta JA}$ | 115          |       |       |       |       |       |       | °C/W       |
| Operating and Storage Temperature Range   | $T_j, T_{stg}$  | -55~+150     |       |       |       |       |       |       | °C         |

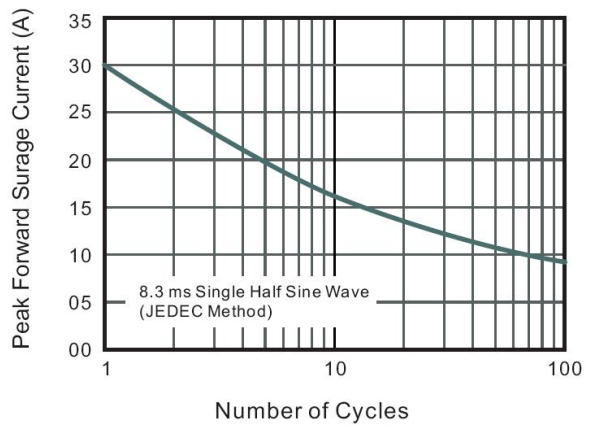
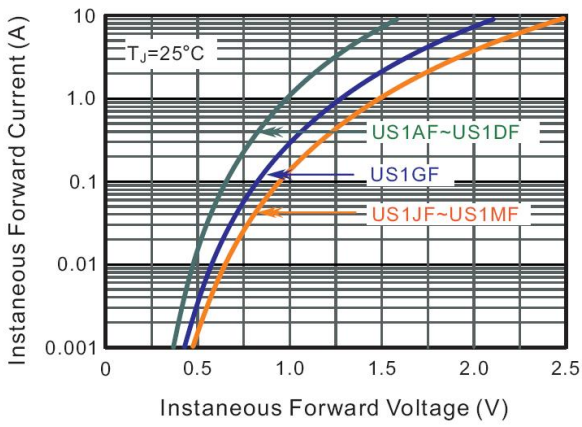
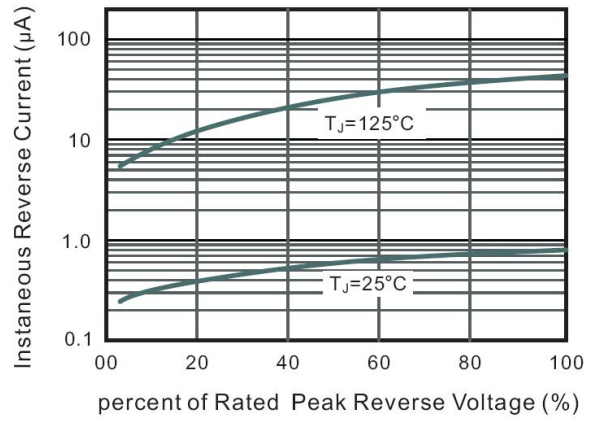
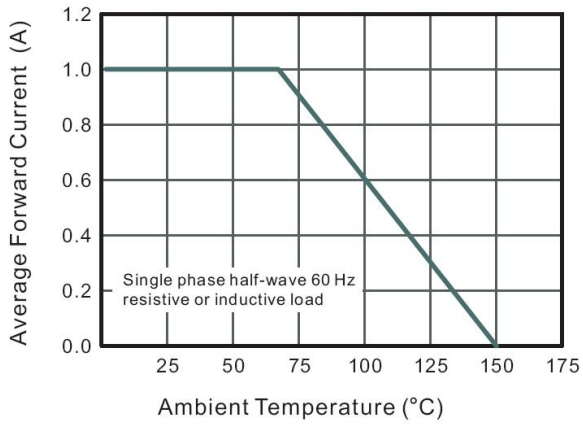
Note:

1) P.C.B. mounted with 0.2 X 0.2" (5 X 5 mm) copper pad areas .

**电性能参数 / Electrical Characteristics(Ta=25°C)**

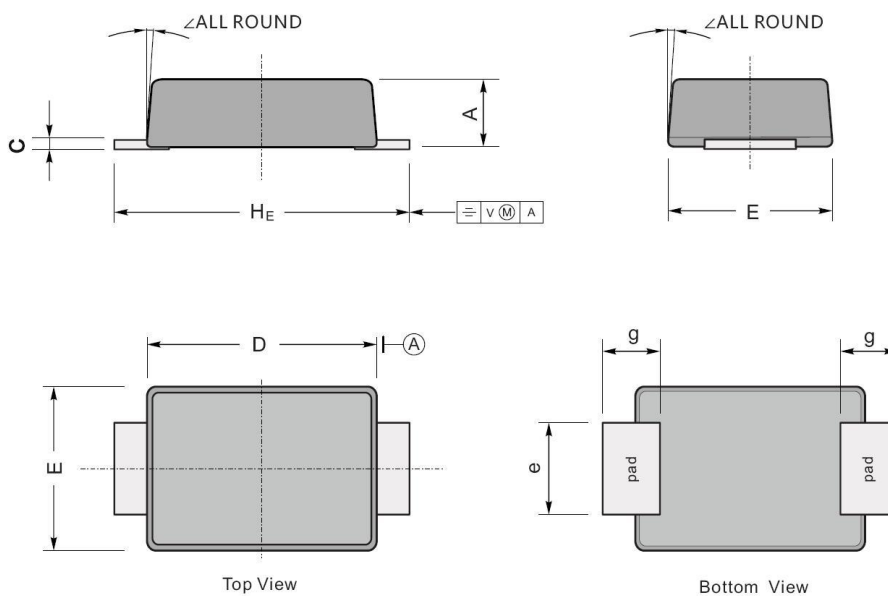
| 参数<br>Parameter   | 参数符号<br>Symbol | 测试条件<br>Test condition                     | 数值<br>Rating |       |       |       |       |       |       | 单位<br>Unit |
|---|----------------|--|--------------|-------|-------|-------|-------|-------|-------|------------|
|   |                |  | US1AF        | US1BF | US1DF | US1GF | US1JF | US1KF | US1MF |            |
| Maximum Instantaneous Forward Voltage                     | $V_F$          | $I_F=1.0A$                                 | 1.0          |       |       | 1.3   | 1.65  |       | V     |            |
| Maximum DC Reverse Current at Maximum DC Blocking Voltage | $I_R$          | $T_a=25^\circ C$                           | 5.0          |       |       |       |       |       |       | uA         |
|   |                | $T_a=125^\circ C$                          | 100          |       |       |       |       |       |       |            |
| Maximum Reverse Recovery Time                             | $T_{rr}$       | $I_F=0.5A$<br>$I_R=1.0A$<br>$I_{rr}=0.25A$ | 50           |       |       |       | 75    |       | ns    |            |

电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

SMAF

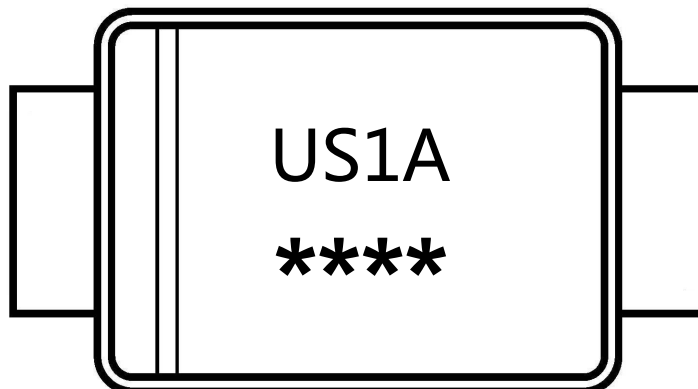


| UNIT |     | A   | C    | D   | E   | e   | g   | $H_E$ | $\angle$ |
|------|-----|-----|------|-----|-----|-----|-----|-------|----------|
| mm   | max | 1.2 | 0.20 | 3.7 | 2.7 | 1.6 | 1.2 | 4.9   | 7°       |
|      | min | 0.9 | 0.12 | 3.3 | 2.4 | 1.3 | 0.8 | 4.4   |          |
| mil  | max | 47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

## Marking

| Type number | Marking code |
|-------------|--------------|
| US1AF       | US1A         |
| US1BF       | US1B         |
| US1DF       | US1D         |
| US1GF       | US1G         |
| US1JF       | US1J         |
| US1KF       | US1K         |
| US1MF       | US1M         |

印章说明 / Marking Instructions



说明：

US1A： 为型号代码

\*\*\*\*： 为生产批号追溯码，第1个\*为年月代码，后面3个\*为当月小批号代码

Note:

US1A： Product Type Code

\*\*\*\*： Lot No. Code ,The 1st \* means:YM Code ,The last 3 \* means:little Lot No  
Code

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| SMAF                 | 3000               | 5                       | 15000                  | 5                            | 75000                  | 7" ×11                                  | 185X180X105 | 390X385X205 |

**使用说明 / Notices**