

# ES1AF~ES1JF

Rev.E Nov.-2017

## 描述 / Descriptions

超快恢复二极管，反向电压：50V~600V，正向电流：1.0A，薄型 SMAF 封装。  
Surface Mount Superfast Recovery Rectifier, Reverse Voltage: 50 to 600V, Forward Current: 1.0A, SMAF thin package.

## 特征 / Features

玻璃钝化芯片，反向恢复时间快，无铅符合欧盟 RoHS 指令 2011/65/EU，适用于表面贴装。无卤产品。  
Features: Glass Passivated Chip Junction, Fast reverse recovery time, Lead free in comply with EU R0HS 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

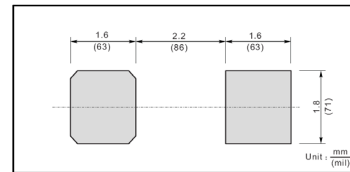


## 引脚排列 / Pinning



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 Parameter	符号 Symbol	数值 Rating							单位 Unit
		ES1AF	ES1BF	ES1CF	ES1DF	ES1EF	ES1GF	ES1JF	
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 $T_L=100^\circ\text{C}$	$I_{F(AV)}$	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 Junction Capacitance at $V_R=4V, f=1\text{MHZ}$	$C_j$	10							pF
Typical Thermal Resistance <sup>1)</sup>	$R_{\theta JA}$	115							$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55~+150							$^\circ\text{C}$

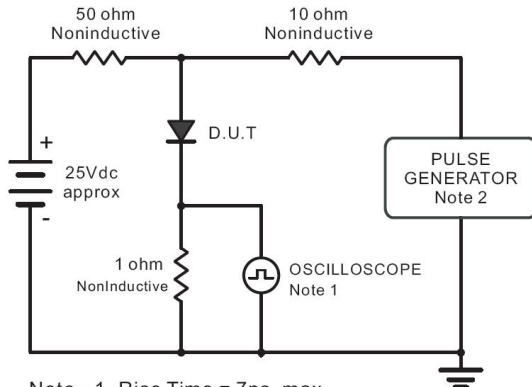
Note:

1) P.C.B. mounted with 0.2X0.2"(5X5 mm) copper pad areas.

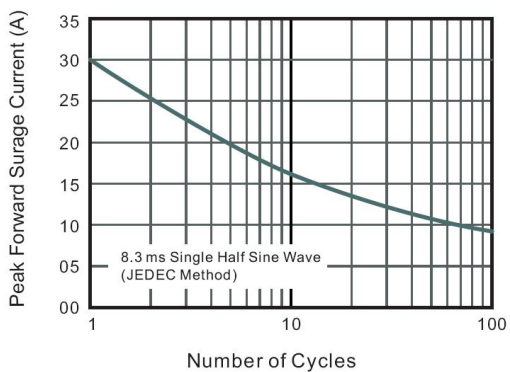
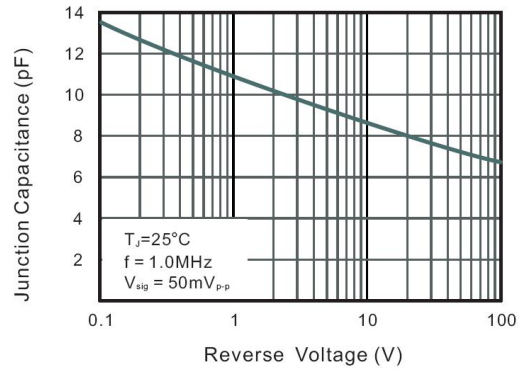
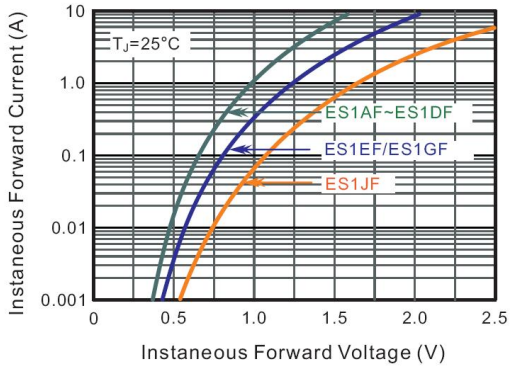
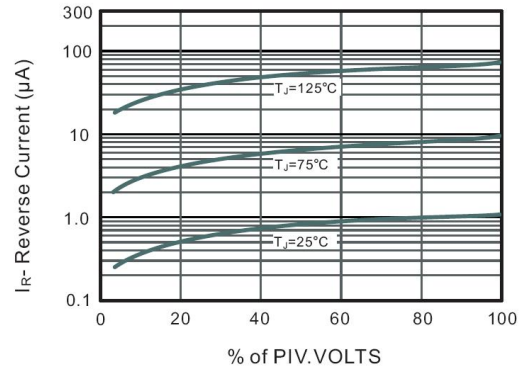
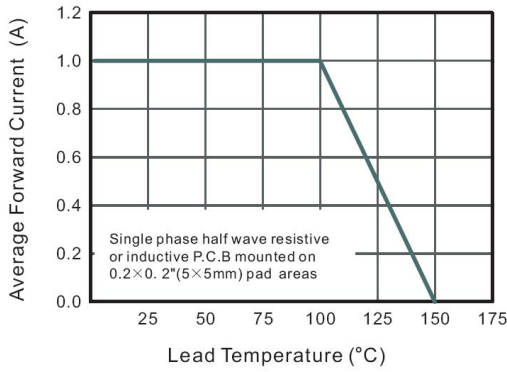
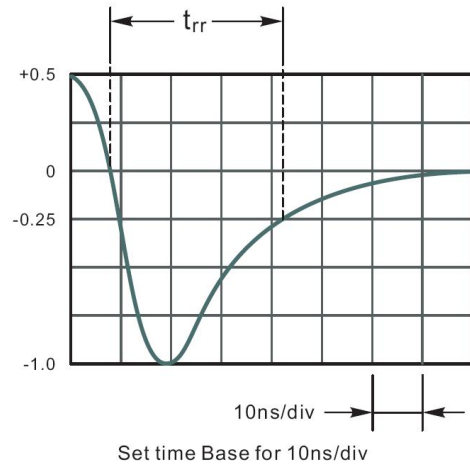
**电性能参数 / Electrical Characteristics(Ta=25°C)**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	数值 Rating						单位 Unit
			ES1AF	ES1BF	ES1CF	ES1DF	ES1EF	ES1GF	
Maximum Forward Voltage	$V_F$	$I_F=1.0A$	1.0			1.25		1.65	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	$I_R$	$T_a=25^\circ\text{C}$	5.0						$\mu\text{A}$
		$T_a=125^\circ\text{C}$	100						$\mu\text{A}$
Maximum Reverse Recovery Time	$t_{rr}$	$I_F=0.5A$ $I_R=1.0A$ $I_{rr}=0.25A$	35						ns

电参数曲线图 / Electrical Characteristic Curve

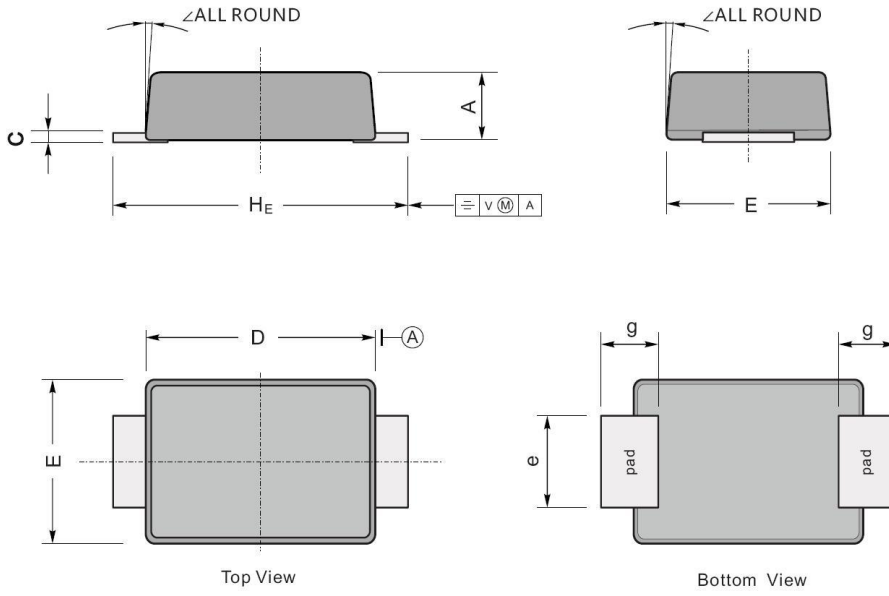


Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



外形尺寸图 / Package Dimensions

SMAF

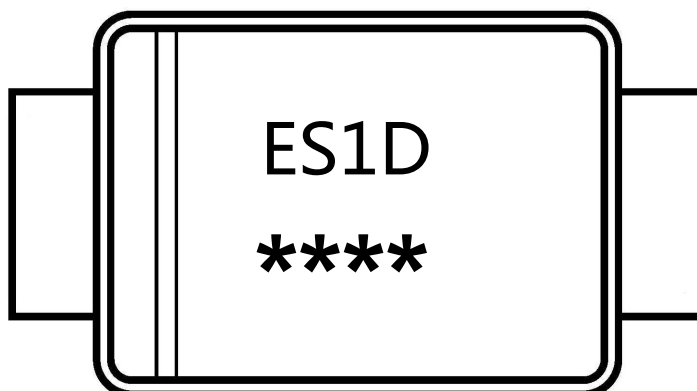


UNIT		A	C	D	E	e	g	$H_E$	$\angle$
mm	max	1.2	0.20	3.7	2.7	1.6	1.2	4.9	7°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	
mil	max	47	7.9	146	106	63	47	193	
	min	35	4.7	130	94	51	31	173	

## Marking

Type number	Marking code
ES1AF	ES1A
ES1BF	ES1B
ES1CF	ES1C
ES1DF	ES1D
ES1EF	ES1E
ES1GF	ES1G
ES1JF	ES1J

印章说明 / Marking Instructions



说明：

ES1D： 为型号代码

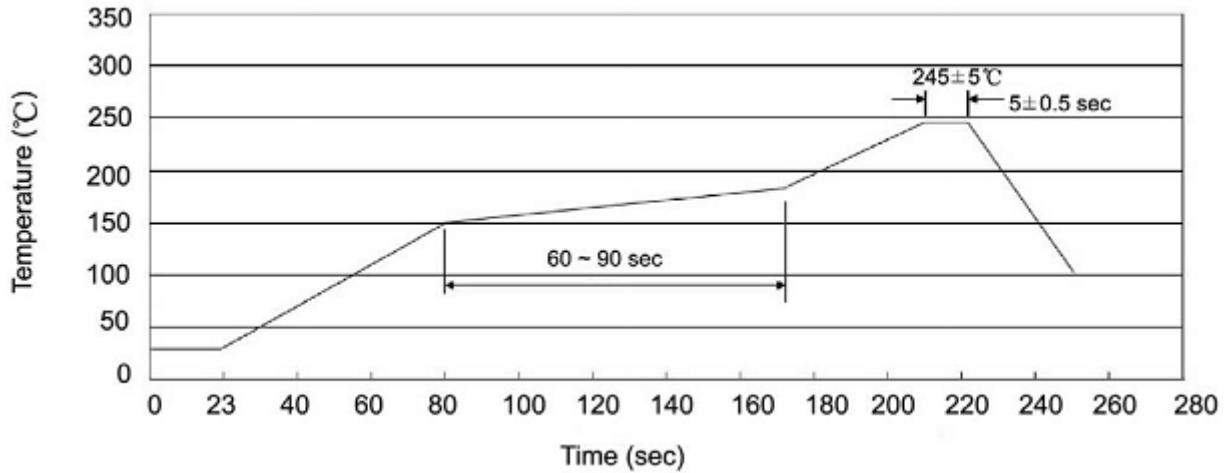
\*\*\*\*： 为生产批号追溯码，第1个\*为年月代码，后面3个\*为当月小批号代码

Note:

ES1D： 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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SMAF	3000	5	15000	5	75000	7" ×11	185X180X105	390X385X205

**使用说明 / Notices**