

ES3AF~ES3JF

Rev.A May.-2025

描述 / Descriptions

超快恢复二极管，反向电压：50V~600V，正向电流：3A，薄型 SMAF 封装。

Surface Mount Superfast Recovery Rectifier, Reverse Voltage: 50 to 600V, Forward Current: 3A, SMAF thin package.

特征 / Features

玻璃钝化芯片，超快反向恢复时间，无铅符合欧盟 RoHS 指令 2011/65/EU，适用于表面贴装，无卤产品。

Glass Passivated Chip Junction, Superfast reverse recovery time, Lead free in comply with EU RoHS 2011/65/EU directives, For surface mounted applications, HF Product.

用途 / Applications

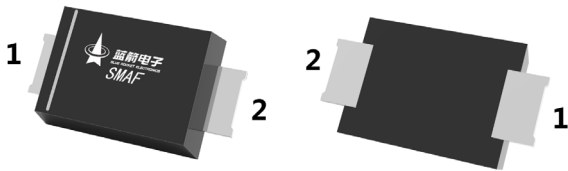
一般用途。

General purpose.

内部等效电路 / Equivalent Circuit

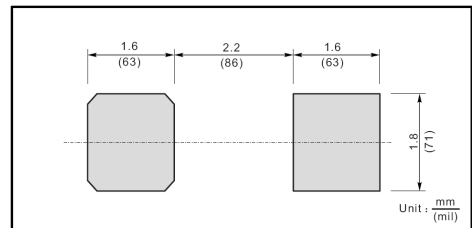


引脚排列 / Pinning



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
		ES3AF	ES3BF	ES3CF	ES3DF	ES3EF	ES3GF	ES3JF	
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 @ Fig.1	I _{F(AV)}	3							A
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I _{FSM}	80							A
Peak Forward Surge Current,1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I _{FSM}	160							A
I ² t Rating for fusing (3ms≤t≤8.3ms)	I ² t	26.5							A ² S
Typical Junction Capacitance ⁽¹⁾	C _j	89				52		41	pF
Typical Thermal Resistance ⁽²⁾	R _{θJA}	100							℃/W
	R _{θJC}	20							℃/W
	R _{θJL}	30							℃/W
Operating and Storage Temperature Range	T _j , T _{stg}	-55~+150							℃

Note:

- 1) Measured at 1 MHz and applied reverse voltage of 4 V D.C
 2) 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 Parameter	符号 Symbol	测试条件 Test Conditions	数值 Rating							单位 Unit
			ES3AF	ES3BF	ES3CF	ES3DF	ES3EF	ES3GF	ES3JF	
Maximum Forward Voltage	V _F	I _F =3A	1				1.25		1.68	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	I _R	T _a =25℃	5							μA
		T _a =125℃	100							μA
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

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

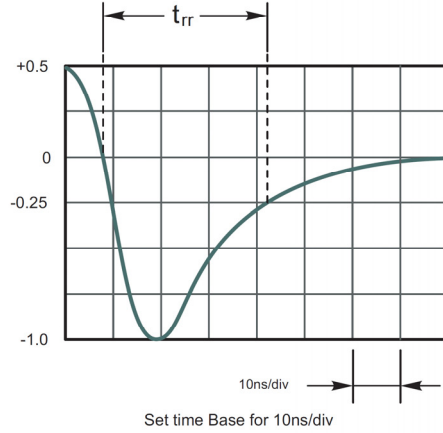
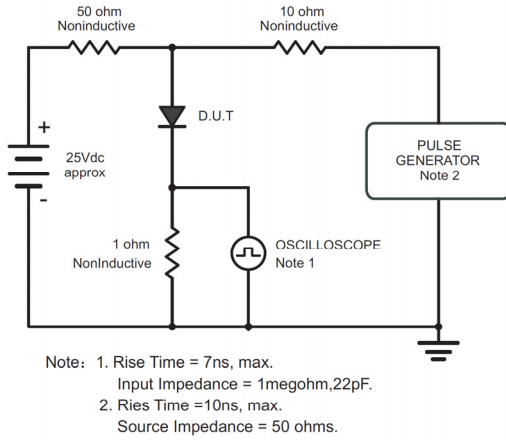


Fig.1 Forward Current Derating Curve

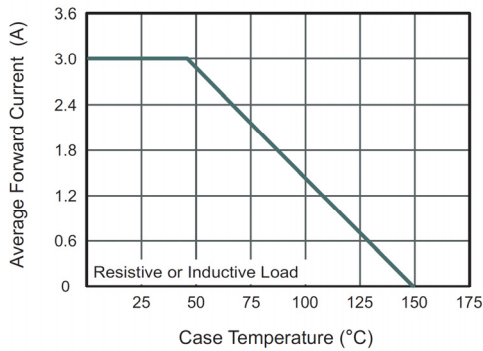


Fig.3 Typical Forward Characteristics

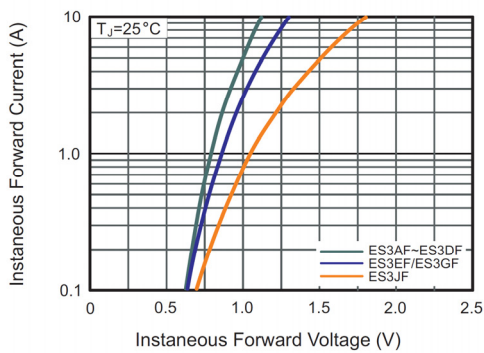


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

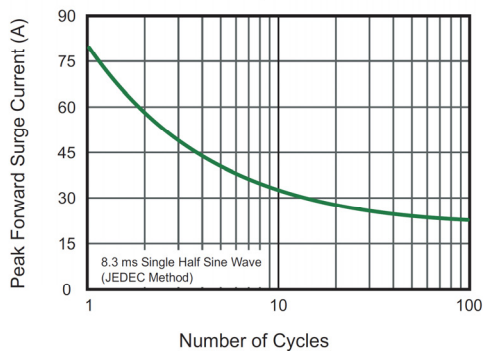


Fig.2 Typical Reverse Characteristics

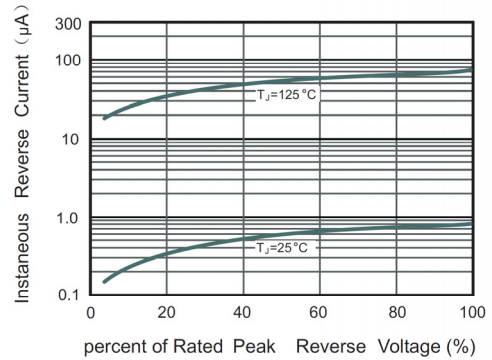
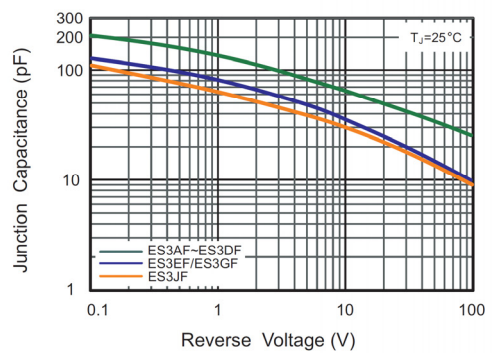
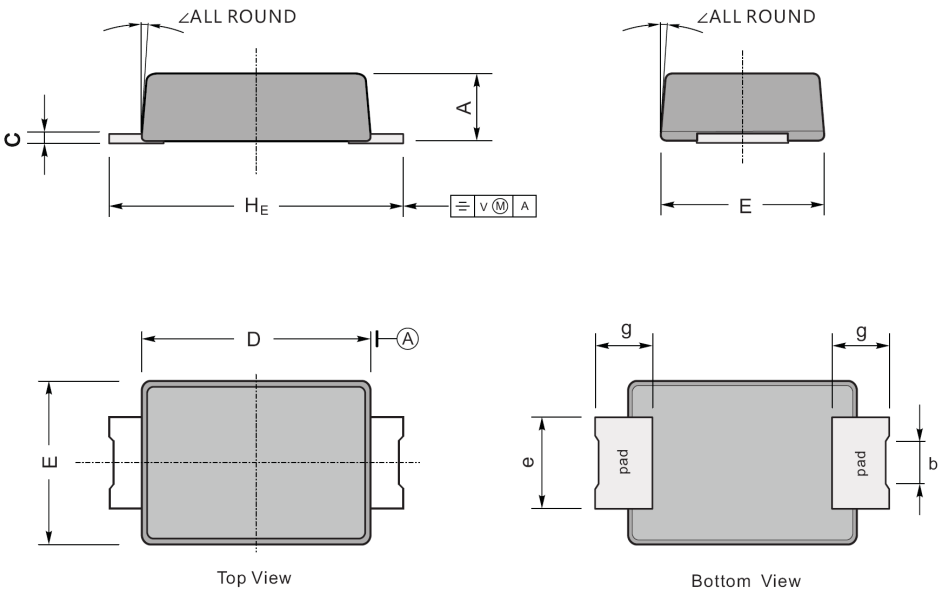


Fig.4 Typical Junction Capacitance

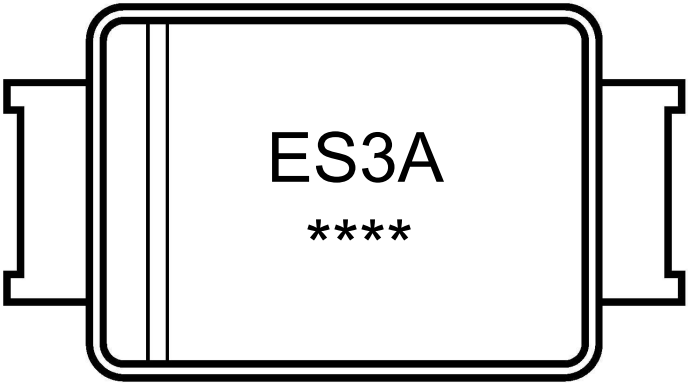


外形尺寸图 / Package Dimensions



UNIT		A	C	D	E	e	g	H _E	b	$\angle$
mm	max	1.2	0.20	3.7	2.7	1.6	1.2	4.9	1.05	7°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	0.65	
mil	max	47	7.9	146	106	63	47	193	41	
	min	35	4.7	130	94	51	31	173	26	

印章说明 / Marking Instructions



说明：

ES3A： 为型号代码

****： 为生产批号代码，随生产批号变化

Note:

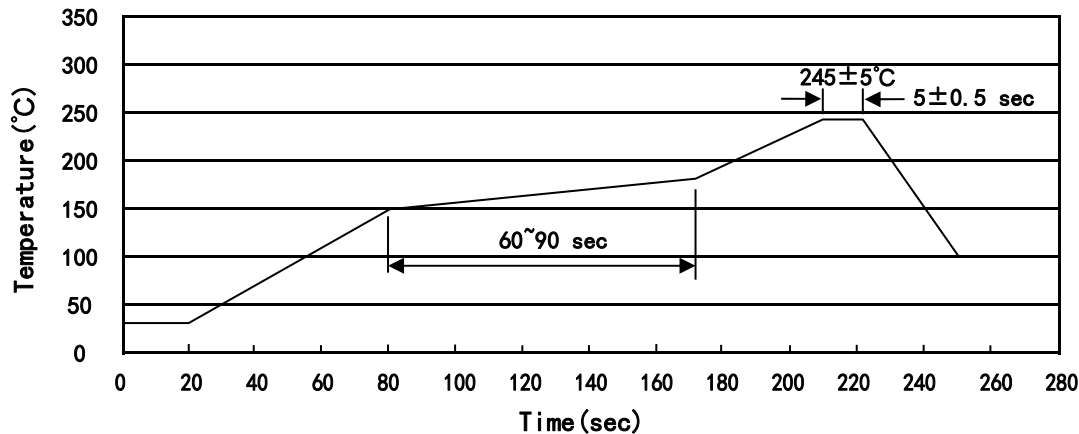
ES3A： Product Type Code

****： Lot No. Code, code change with Lot No

Marking

Type number	Marking code
ES3AF	ES3A
ES3BF	ES3B
ES3CF	ES3C
ES3DF	ES3D
ES3EF	ES3E
ES3GF	ES3G
ES3JF	ES3J

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 150~180°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:150~180°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 ³)		
	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	3,000	5	15,000	6	90,000	7" ×12	185×180×105	390×385×205

使用说明 / Notices