

# ES1K

Rev.A Aug.-2023

## 描述 / Descriptions

超快恢复二极管，反向电压：800V，正向电流：1.0A，SMA 封装。

Surface Mount Superfast Recovery Rectifier, Reverse Voltage:800V, Forward Current:1.0A, SMA 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。

Glass Passivated Chip Junction, Superfast reverse recovery time, Lead free in comply with EU R0HS 2011/65/EU directives, For surface mounted applications, HF product.

## 用途 / Applications

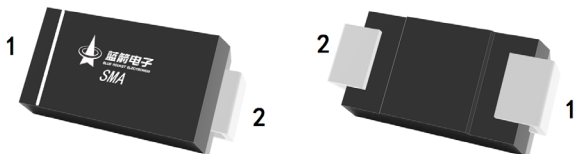
一般用途。

General purpose.

## 内部等效电路 / Equivalent Circuit

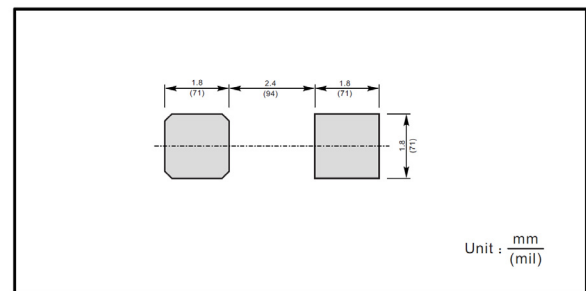


## 引脚排列 / Pinning



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
		ES1K	
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	800	V
Maximum RMS voltage	$V_{RMS}$	560	V
Maximum DC Blocking Voltage	$V_{DC}$	800	V
Maximum Average Forward Rectified Current at $T_c=125^\circ\text{C}$	$I_{F(AV)}$	1.0	A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	30	A
Typical Junction Capacitance at $V_R=4\text{V}$ , $f=1\text{MHz}$	$C_j$	15	pF
Typical Thermal Resistance <sup>1)</sup>	$R_{\theta JA}$	60	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55~+150	$^\circ\text{C}$

Note:

1) P.C.B. mounted with 1.0 X 1.0" (2.54 X 2.54 cm) 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
			ES1M	
Maximum Forward Voltage	$V_F$	$I_F=1.0\text{A}$	1.7	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	$t_{rr}$	$I_F=0.5\text{A}$ $I_R=1.0\text{A}$ $I_{rr}=0.25\text{A}$	35	ns

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

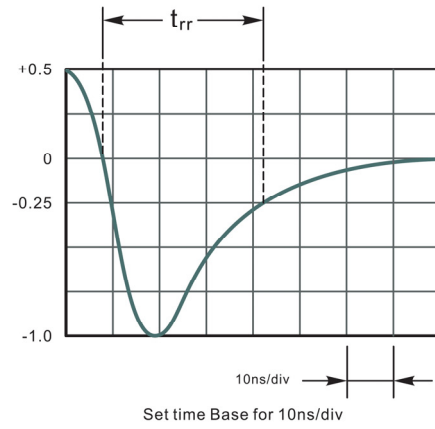
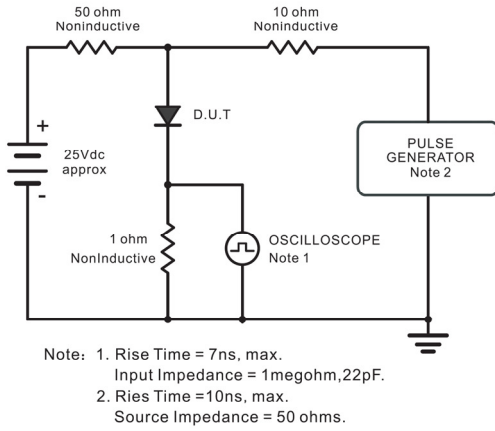


Fig.2 Maximum Average Forward Current Rating

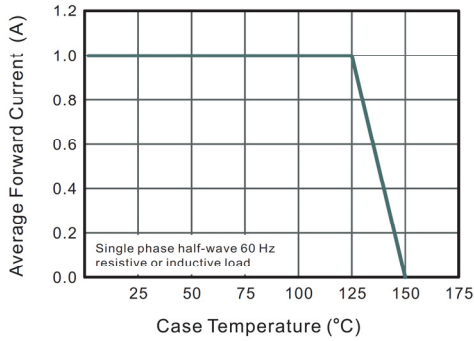


Fig.3 Typical Reverse Characteristics

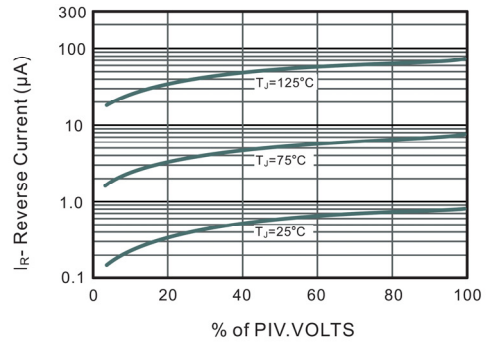


Fig.4 Typical Forward Characteristics

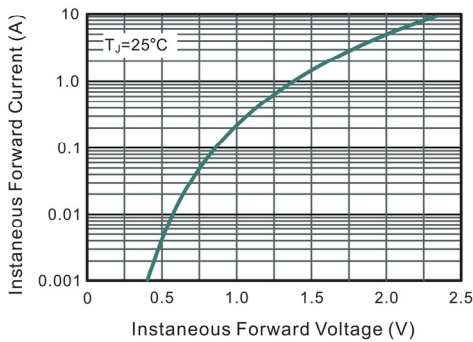


Fig.5 Typical Junction Capacitance

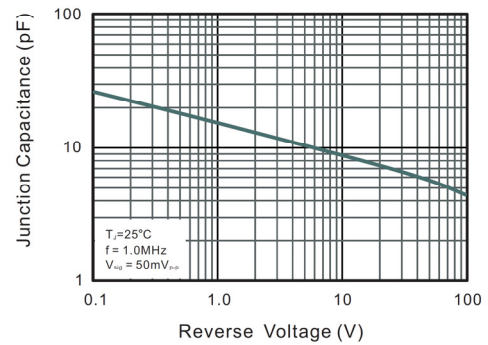
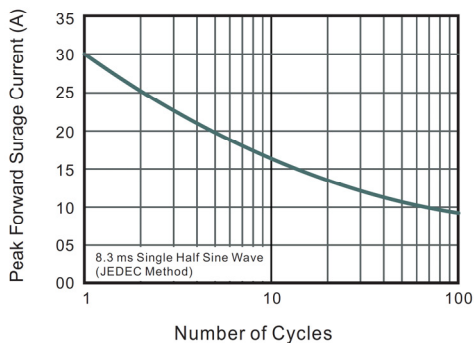
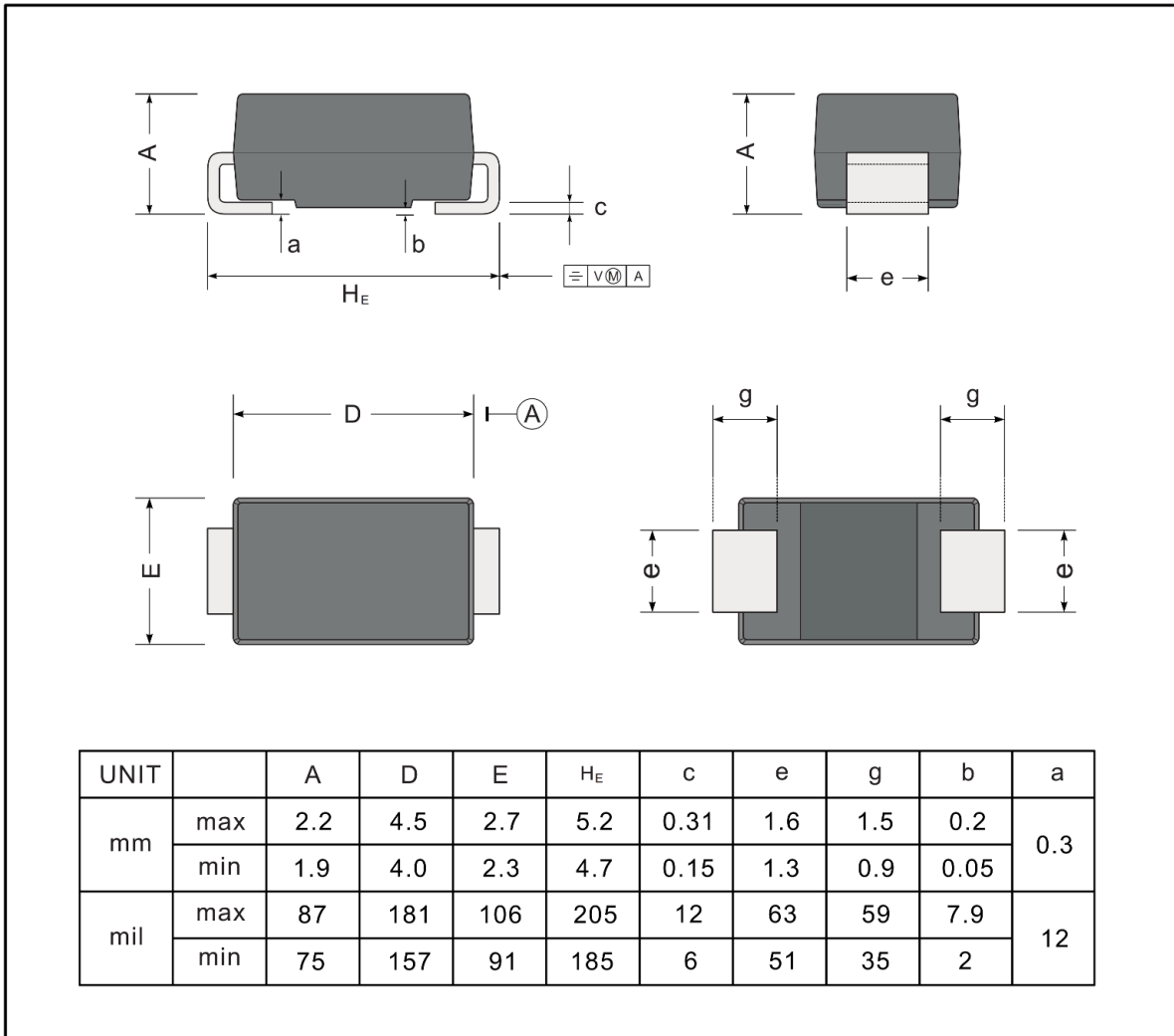


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



外形尺寸图 / Package Dimensions

SMA



印章说明 / Marking Instructions



说明：

ES1K： 为型号代码

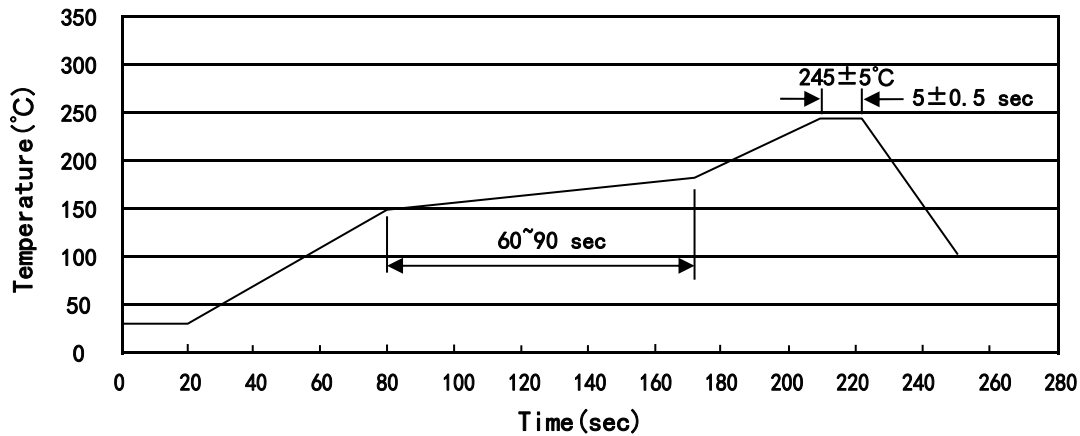
\*\*\*\*： 为生产批号代码，随生产批号变化

Note:

ES1K： Product Type Code

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

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 <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
SMA	5,000	2	10,000	7	70,000	13" × 12	336×336×40	380×335×366

使用说明 / Notices