

# US5AC~US5MC

Rev.B Feb.-2021

## 描述 / Descriptions

超快恢复二极管，反向电压：50V~1000V，正向电流：5.0A，SMC封装。

Surface Mount Ultrafast Recovery Rectifier, Reverse Voltage: 50 to 1000V, Forward Current: 5.0A, SMC package.

## 特征 / Features

玻璃钝化芯片，效率高，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, High efficiency, Lead free in comply with EU R0HS 2011/65/EU directives, For surface mounted applications, Halogen free product.

## 用途 / Applications

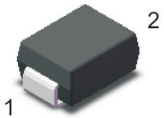
一般用途。

General purpose.

## 内部等效电路 / Equivalent Circuit

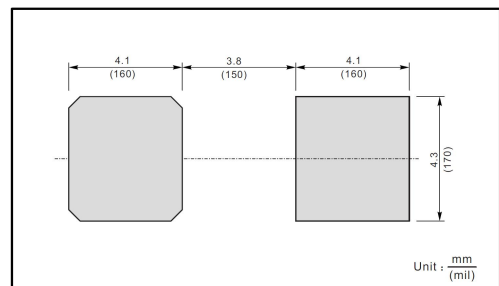


## 引脚排列 / Pinning



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	参数符号 Symbol	数值 Rating							单位 Unit
		US5AC	US5BC	US5DC	US5GC	US5JC	US5KC	US5MC	
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 $T_C=100^\circ C$	$I_{F(AV)}$	5.0							A
Typical Junction Capacitance at $V_R=4V, f=1MHz$	$C_j$	50							pF
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	120							A
Typical Thermal Resistance <sup>(1)</sup>	$R_{\theta JA}$	35							$^\circ C/W$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55~+150							$^\circ C$

Note:

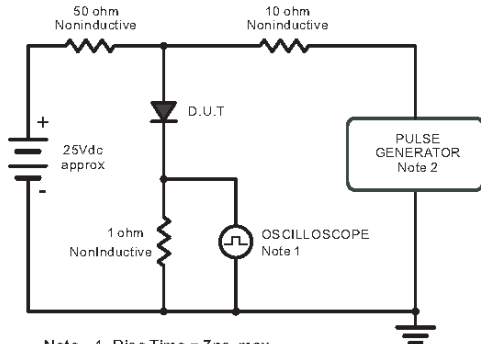
(1) P.C.B. mounted with 2.0 X 2.0" (5 X 5 cm) copper pad areass .

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

参数 Parameter	参数符号 Symbol	测试条件 Test condition	数值 Rating						单位 Unit
			US5AC	US5BC	US5DC	US5GC	US5JC	US5KC	
Maximum Instantaneous Forward Voltage	$V_F$	$I_F=5.0A$	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	$T_{rr}$	$I_F=0.5A$ $I_R=1.0A$ $I_{rr}=0.25A$	50			75		ns	

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



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

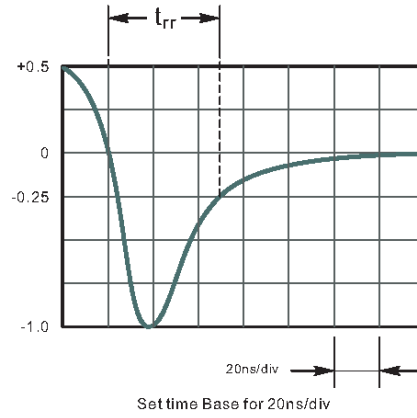


Fig.2 Maximum Average Forward Current Rating

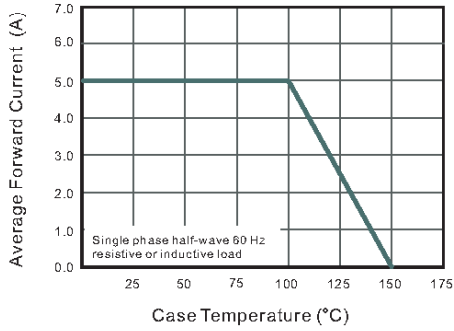


Fig.3 Typical Reverse Characteristics

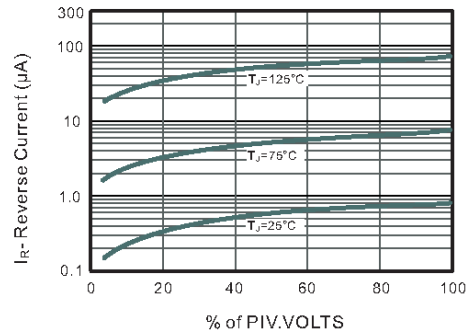


Fig.4 Typical Forward Characteristics

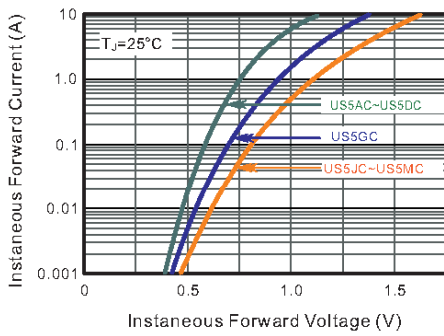


Fig.5 Typical Junction Capacitance

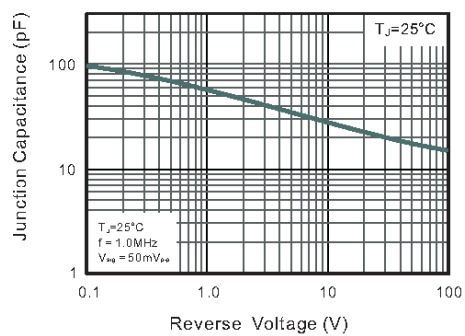
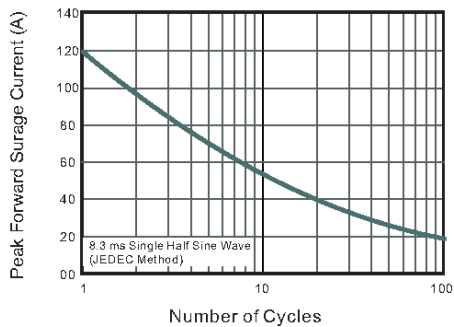
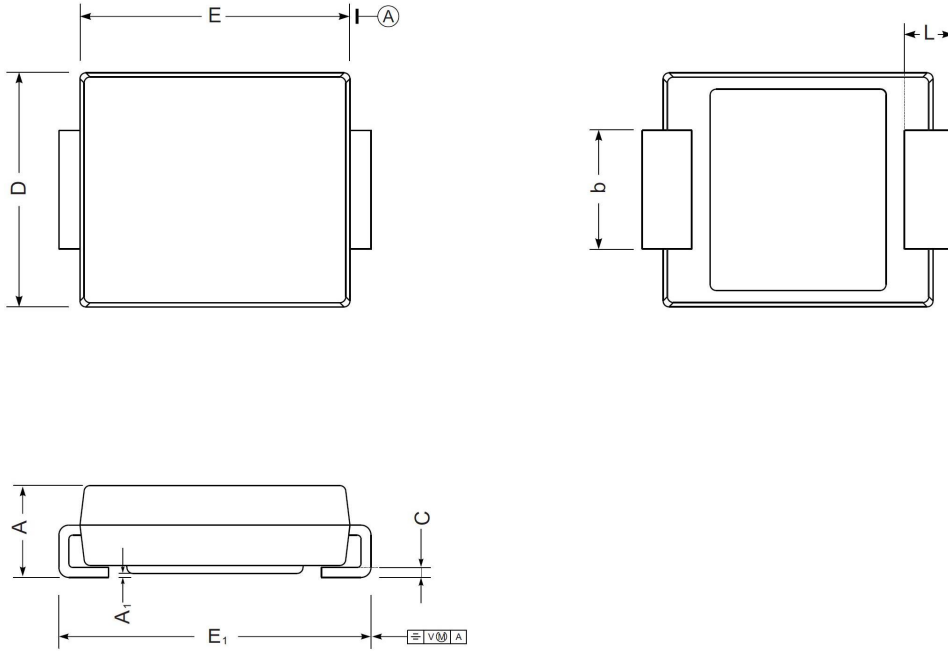


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



外形尺寸图 / Package Dimensions

SMC



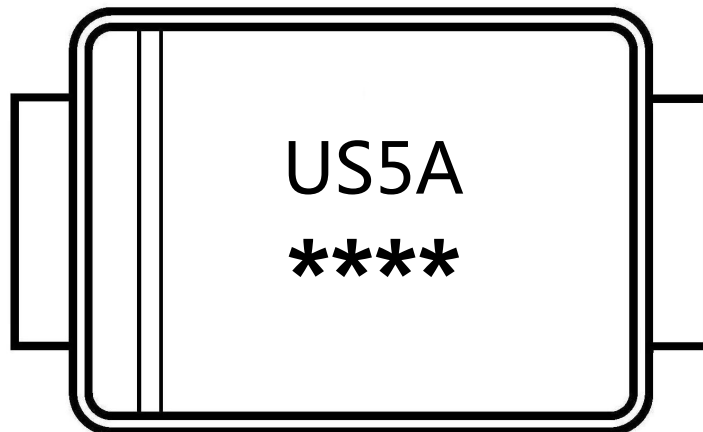
SMC mechanical data

UNIT		A	E	D	E <sub>1</sub>	A <sub>1</sub>	C	L	b
mm	max	2.62	7.0	6.2	8.0	0.21	0.31	1.6	3.25
	min	2.00	6.5	5.6	7.6	0.05	0.15	0.9	2.75
mil	max	103	276	244	315	8.3	12	63	128
	min	79	256	220	299	2.0	5.9	35	108

## Marking

Type number	Marking code
US5AC	US5A
US5BC	US5B
US5DC	US5D
US5GC	US5G
US5JC	US5J
US5KC	US5K
US5MC	US5M

印章说明 / Marking Instructions



说明：

US5A：为型号代码

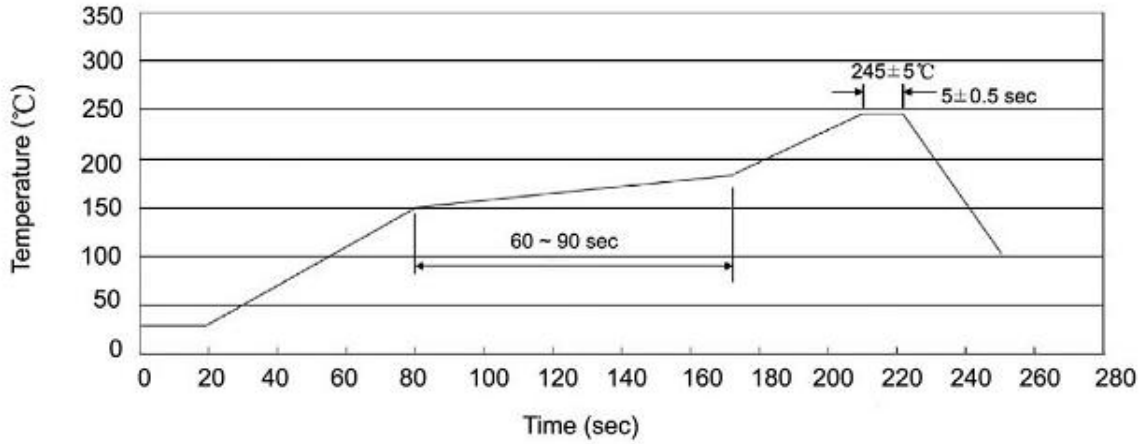
\*\*\*\*：为生产批号追溯码，第1个\*为年月代码，后面3个\*为当月小批号代码

Note:

US5A：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 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
SMC	3000	2	6000	6	36000	13" ×16	337X337X49	380X335X366

**使用说明 / Notices**

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