

## SOT-23 ESD 静电保护二极管

### ■Features 特点

Un-directional ESD Protection 单向静电保护

Low capacitance 低电容

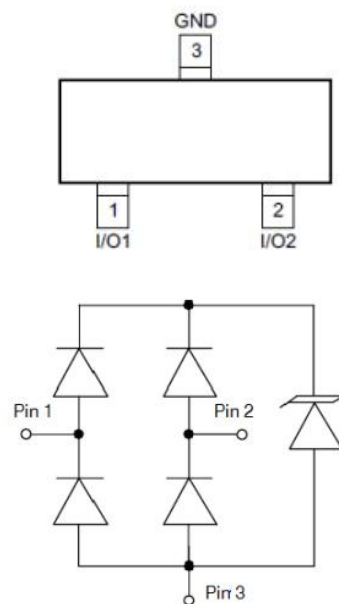
### ■Applications 应用

USB IEEE Interfaces 接口

Notebooks 笔记本电脑

Communication System 通信系统

HDMI 高清多媒体



### ■Internal Schematic Diagram 内部结构

### ■Absolute Maximum Ratings 最大额定值

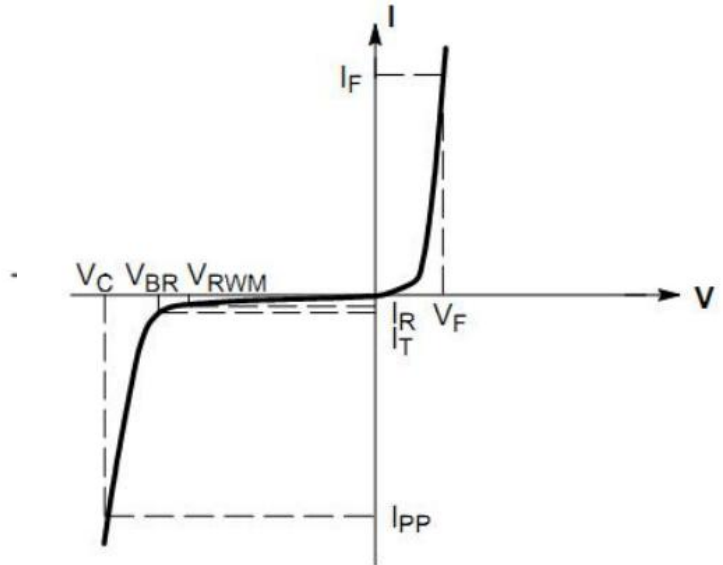
| Characteristic 特性参数                               | Symbol 符号 | Rat 额定值  | Unit 单位 |
|---------------------------------------------------|-----------|----------|---------|
| ESD (IEC61000-4-2 contact discharge)<br>@25°C接触放电 | $V_{ESD}$ | $\pm 15$ | KV      |
| ESD (IEC61000-4-2 air discharge) @25°C<br>空气放电    | $V_{ESD}$ | $\pm 20$ | KV      |
| Peak Pulse Current @25°C峰值脉冲电流                    | $I_{PP}$  | 4        | A       |
| Peak Pulse Power @25°C峰值脉冲功率                      | $P_{PK}$  | 80       | W       |
| Lead Temperature 管脚温度                             | $T_L$     | 260      | °C      |
| Lead Solder Time 管脚焊接时间                           | $T_L$     | 10       | S       |
| Operating Temperature 工作温度                        | $T_{op}$  | -40~85   | °C      |
| Junction Temperature 结温                           | $T_J$     | -55~125  | °C      |
| Storage Temperature 储存温度                          | $T_{stg}$ | -55~125  | °C      |

## ■ Electrical Characteristics 电特性

( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^{\circ}\text{C}$ )

| Characteristic Parameters<br>特性参数   | Symbol<br>符号       | Min<br>最小值         | Typ<br>典型值 | Max<br>最大值 | Unit<br>单位    | Condition<br>条件                                         |
|-------------------------------------|--------------------|--------------------|------------|------------|---------------|---------------------------------------------------------|
| Reverse Stand-off Voltage<br>反向工作电压 | $V_{\text{RWM}}$   |                    |            | 5          | V             |                                                         |
| Reverse Breakdown Voltage<br>反向击穿电压 | $V_{\text{R(BR)}}$ | 6                  |            |            | V             | $I_{\text{T}}=1\text{mA}$                               |
| Reverse Leakage Current<br>反向漏电流    | $I_{\text{R}}$     |                    |            | 1          | $\mu\text{A}$ | $V_{\text{RWM}}=5\text{V}$                              |
| Clamping Voltage<br>钳位电压            | $V_{\text{C}}$     |                    |            | 13         | V             | $I_{\text{PP}}=1\text{A}, t_{\text{p}}=8/20\mu\text{s}$ |
| Clamping Voltage<br>钳位电压            | $V_{\text{C}}$     |                    |            | 20         | V             | $I_{\text{PP}}=4\text{A}, t_{\text{p}}=8/20\mu\text{s}$ |
| Junction Capacitance<br>结电容         | $C_{\text{J}}$     | I/O-GND<br>I/O-I/O | 0.5<br>0.3 | 0.8<br>0.5 | pF            | $V_{\text{R}}=0\text{V}, f=1\text{MHz}$                 |

|                    |                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------|
| $V_{\text{RWM}}$   | Reverse Working Voltage<br>反向工作电压                                                                |
| $V_{\text{R(BR)}}$ | Reverse Breakdown Voltage<br>反向击穿电压@ $I_{\text{T}}=1\text{mA}$                                   |
| $I_{\text{T}}$     | Test Current<br>测试电流                                                                             |
| $I_{\text{R}}$     | Reverse Leakage Current<br>反向漏电流@ $V_{\text{RWM}}$                                               |
| $V_{\text{C}}$     | Clamping Voltage<br>钳位电压                                                                         |
| $I_{\text{PP}}$    | Reverse Peak Pulse Current<br>浪涌电流                                                               |
| $C_{\text{J}}$     | Junction Capacitance 结电容<br>$V_{\text{IO}}=0\text{V}, V_{\text{P-P}}=30\text{mV}, f=1\text{MHz}$ |



## ■ Typical Characteristic Curve 典型特性曲线

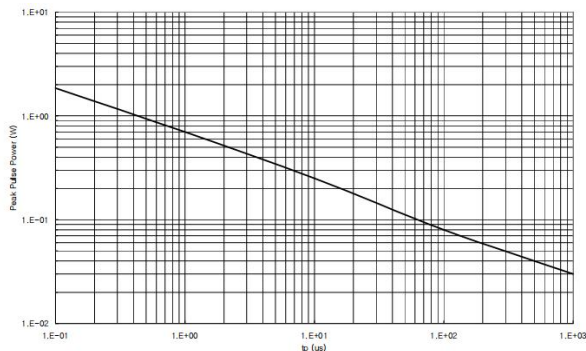


Figure 1. Peak Pulse Power Derating

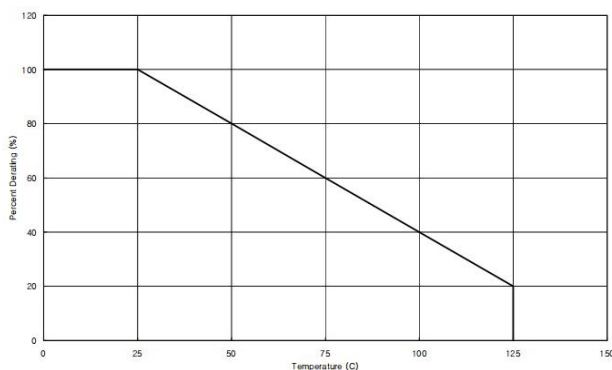


Figure 2. Peak Pulse Power Derating vs Temperature

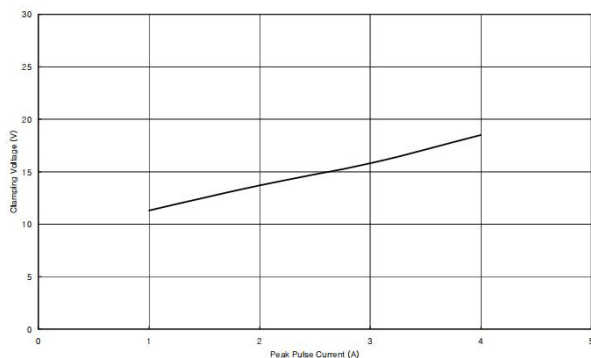


Figure 3. Peak Pulse Current vs Clamping Voltage

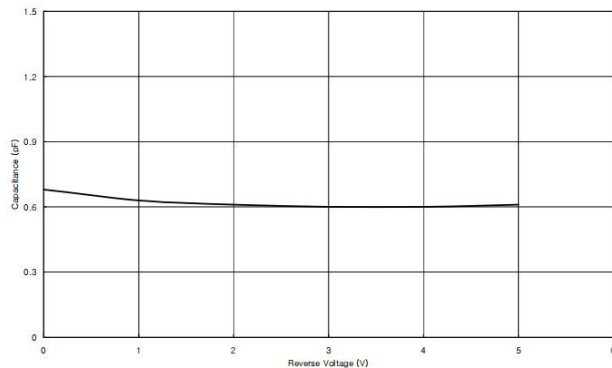
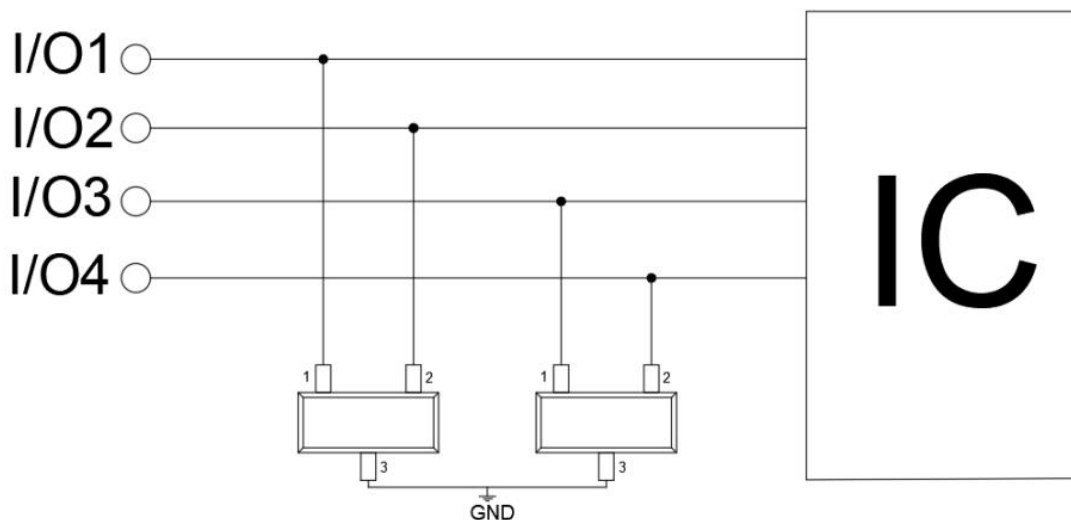
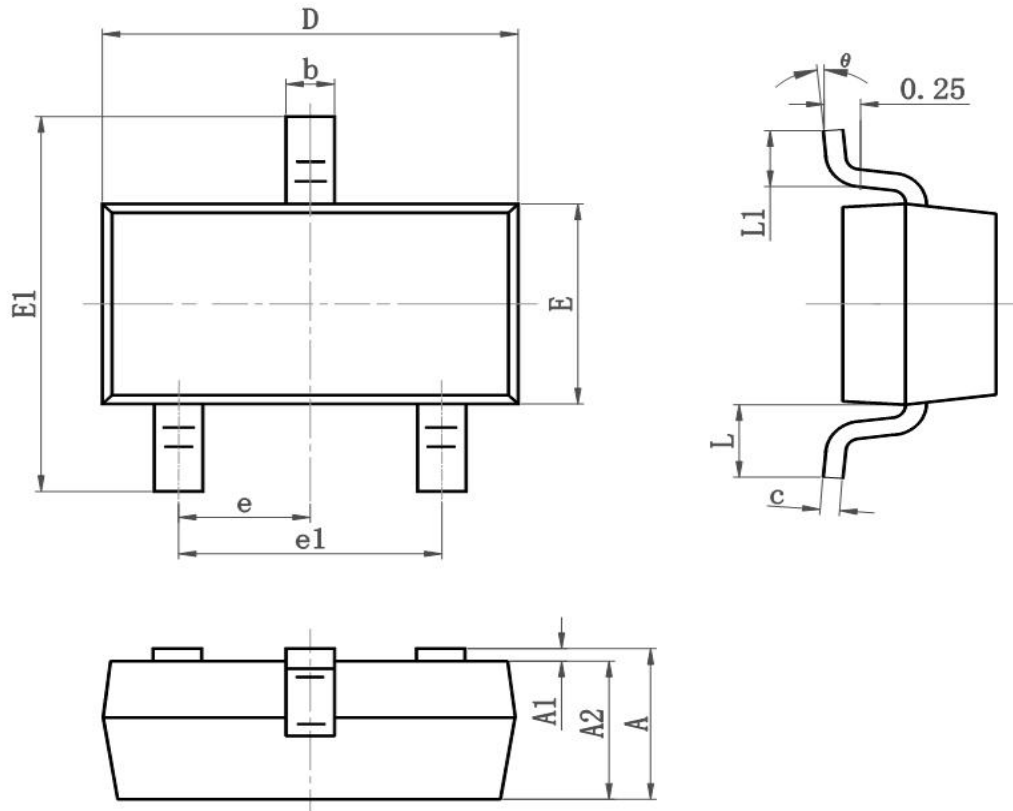


Figure 4. Reverse Voltage vs Capacitance

## ■ Typical Application 典型应用



■ Dimension 外形封装尺寸



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.050                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.900                     | 1.00  | 0.035                | 0.039 |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.500                     | 0.600 | 0.020                | 0.024 |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |