



# 安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO., LTD.

FS13001

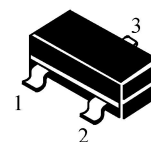
## SOT-23 Bipolar Transistor 双极型三极管

### ■ Features 特点

### NPN High Voltage Switching 高压开关

## SOT-23

- 1. BASE
- 2. EMITTER
- 3. COLLECTOR



### ■ Absolute Maximum Ratings 最大额定值

| Characteristic 特性参数                         | Symbol 符号                   | Rat 额定值                    | Unit 单位                   |
|---|-----------------------------|----------------------------|---------------------------|
| Collector-Base Voltage 集电极基极电压              | $V_{CBO}$                   | 600                        | V                         |
| Collector-Emitter Voltage 集电极发射极电压          | $V_{CEO}$                   | 400                        | V                         |
| Emitter-Base Voltage 发射极基极电压                | $V_{EBO}$                   | 7                          | V                         |
| Collector Current 集电极电流                     | $I_C$                       | 200                        | mA                        |
| Power dissipation 耗散功率                      | $P_C(T_a=25^\circ\text{C})$ | 350                        | mW                        |
| Thermal Resistance Junction-Ambient 热阻      | $R_{\theta JA}$             | 357                        | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature<br>结温和储藏温度 | $T_J, T_{stg}$              | -55to+150 $^\circ\text{C}$ |                           |

### ■ Device Marking 产品打标

FS13001=8D

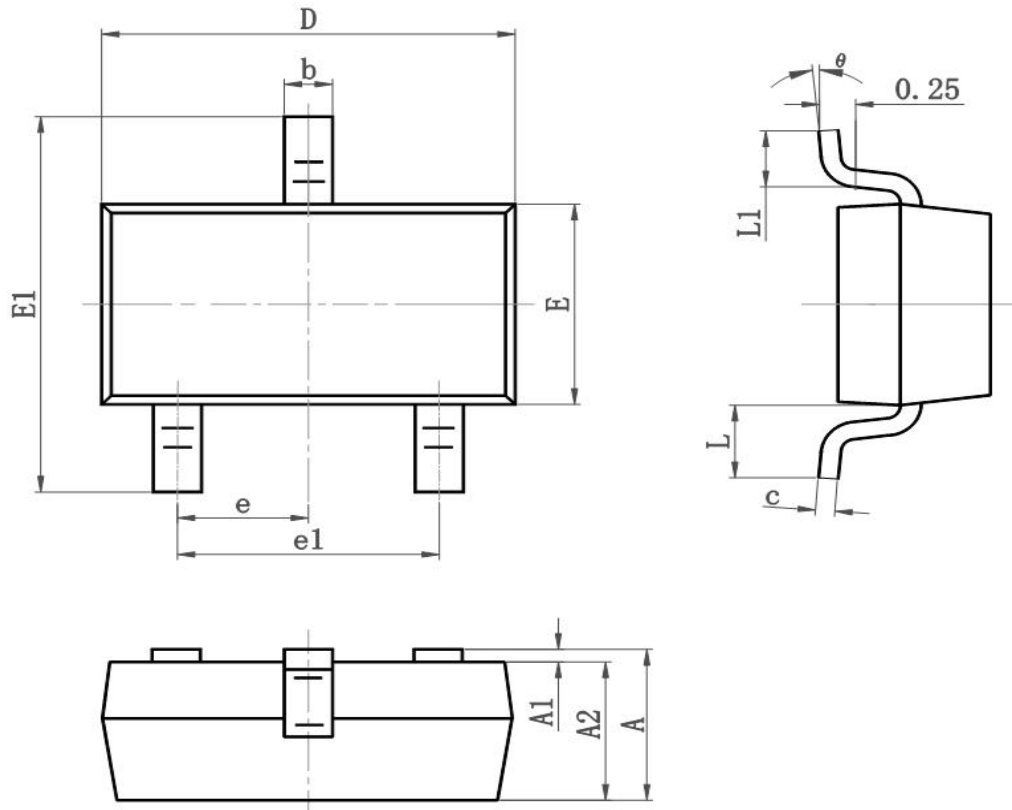


## ■ Electrical Characteristics 电特性

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

| Characteristic<br>特性参数   | Symbol<br>符号  | Min<br>最小值 | Type<br>典型值 | Max<br>最大值 | Unit<br>单位    |
|--|---------------|------------|-------------|------------|---------------|
| Collector-Base Breakdown Voltage<br>集电极基极击穿电压( $I_C=100\mu\text{A}$ , $I_E=0$ )                | $BV_{CBO}$    | 600        | —           | —          | V             |
| Collector-Emitter Breakdown Voltage<br>集电极发射极击穿电压( $I_C=1\text{mA}$ , $I_B=0$ )                | $BV_{CEO}$    | 400        | —           | —          | V             |
| Emitter-Base Breakdown Voltage<br>发射极基极击穿电压( $I_E=100\mu\text{A}$ , $I_C=0$ )                  | $BV_{EBO}$    | 7          | —           | —          | V             |
| Collector-Base Leakage Current<br>集电极基极漏电流( $V_{CB}=600\text{V}$ , $I_E=0$ )                   | $I_{CBO}$     | —          | —           | 100        | $\mu\text{A}$ |
| Collector-Emitter Leakage Current<br>集电极发射极漏电流( $V_{CE}=400\text{V}$ , $I_B=0$ )               | $I_{CEO}$     | —          | —           | 200        | $\mu\text{A}$ |
| Emitter-Base Leakage Current<br>发射极基极漏电流( $V_{EB}=7\text{V}$ , $I_C=0$ )                       | $I_{EBO}$     | —          | —           | 100        | $\mu\text{A}$ |
| DC Current Gain<br>直流电流增益( $V_{CE}=10\text{V}$ , $I_C=250\mu\text{A}$ )                        | $H_{FE(1)}$   | 5          | —           | —          |               |
| DC Current Gain<br>直流电流增益( $V_{CE}=20\text{V}$ , $I_C=20\text{mA}$ )                           | $H_{FE(2)}$   | 20         | —           | 30         |               |
| DC Current Gain<br>直流电流增益( $V_{CE}=10\text{V}$ , $I_C=250\text{mA}$ )                          | $H_{FE(3)}$   | 5          | —           | —          |               |
| Collector-Emitter Saturation Voltage<br>集电极发射极饱和压降( $I_C=50\text{mA}$ , $I_B=10\text{mA}$ )    | $V_{CE(sat)}$ | —          | —           | 0.5        | V             |
| Base-Emitter Saturation Voltage<br>基极发射极饱和压降( $I_C=50\text{mA}$ , $I_B=10\text{mA}$ )          | $V_{BE(sat)}$ | —          | —           | 1.2        | V             |
| Transition Frequency<br>特征频率( $V_{CE}=20\text{V}$ , $I_C=20\text{mA}$ )                        | $f_T$         | 8          | —           | —          | MHz           |
| Fall Time 下降时间<br>( $V_{CC}=45\text{V}$ , $I_C=50\text{mA}$ , $I_{B1}=-I_{B2}=5\text{mA}$ )    | $t_f$         | —          | —           | 300        | ns            |
| Storage Time 贮存时间<br>( $V_{CC}=45\text{V}$ , $I_C=50\text{mA}$ , $I_{B1}=-I_{B2}=5\text{mA}$ ) | $t_s$         | —          | —           | 1.5        | $\mu\text{s}$ |

## ■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        | 0.950TYP                  |       | 0.037TYP             |       |
| e1       | 1.800                     | 2.000 | 0.071                | 0.079 |
| L        | 0.550REF                  |       | 0.022REF             |       |
| L1       | 0.300                     | 0.500 | 0.012                | 0.020 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |