

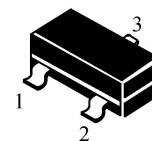
**SOT-23 Bipolar Transistor 双极型三极管**

**SOT-23**

■ **Features 特点**

**NPN General Purpose 通用**

- 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              | $V_{CBO}$                   | 40                         | V                         |
| Collector-Emitter Voltage 集电极发射极电压          | $V_{CEO}$                   | 32                         | V                         |
| Emitter-Base Voltage 发射极基极电压                | $V_{EBO}$                   | 5                          | V                         |
| Collector Current 集电极电流                     | $I_C$                       | 500                        | mA                        |
| Power dissipation 耗散功率                      | $P_C(T_a=25^\circ\text{C})$ | 200                        | mW                        |
| Thermal Resistance Junction-Ambient 热阻      | $R_{\theta JA}$             | 625                        | $^\circ\text{C}/\text{W}$ |
| 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**

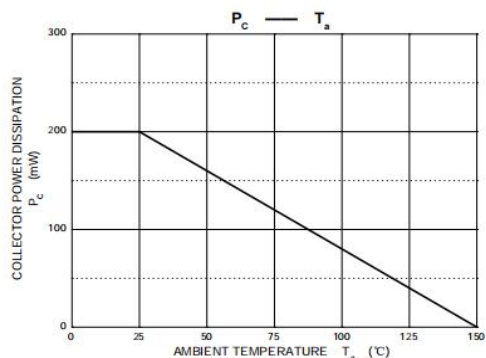
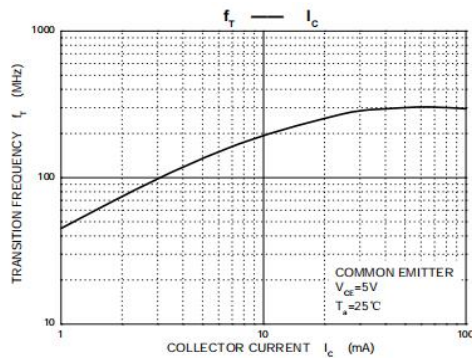
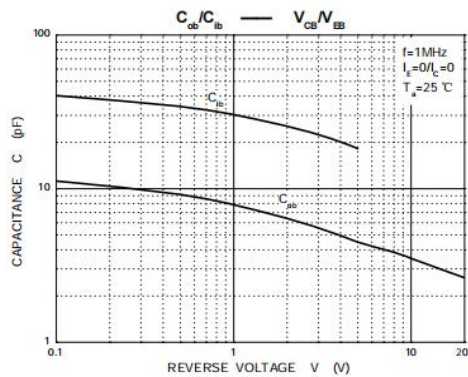
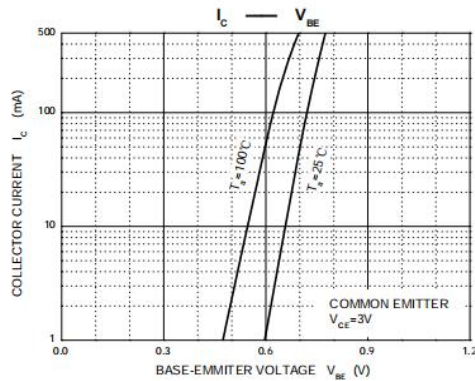
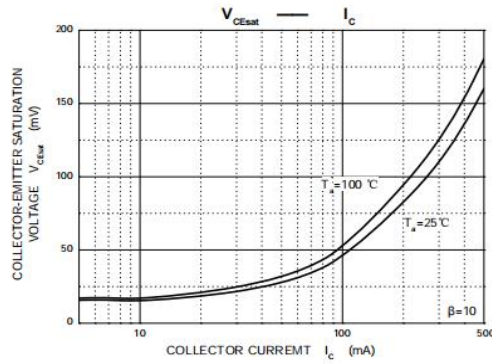
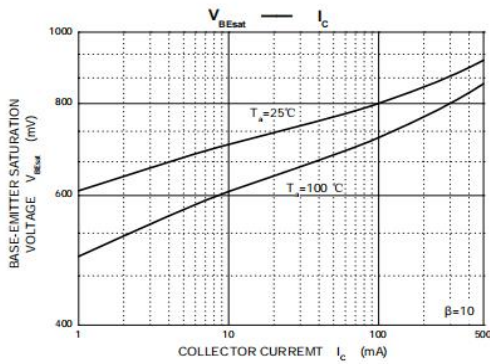
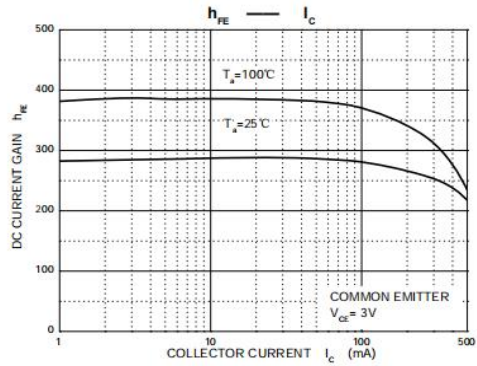
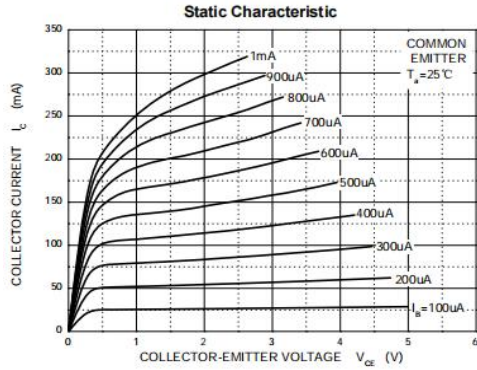
|          |        |         |         |
|----------|--------|---------|---------|
| $H_{FE}$ | 82-180 | 120-270 | 180-390 |
| Mark     | CP     | CQ      | CR      |

■ Electrical Characteristics 电特性

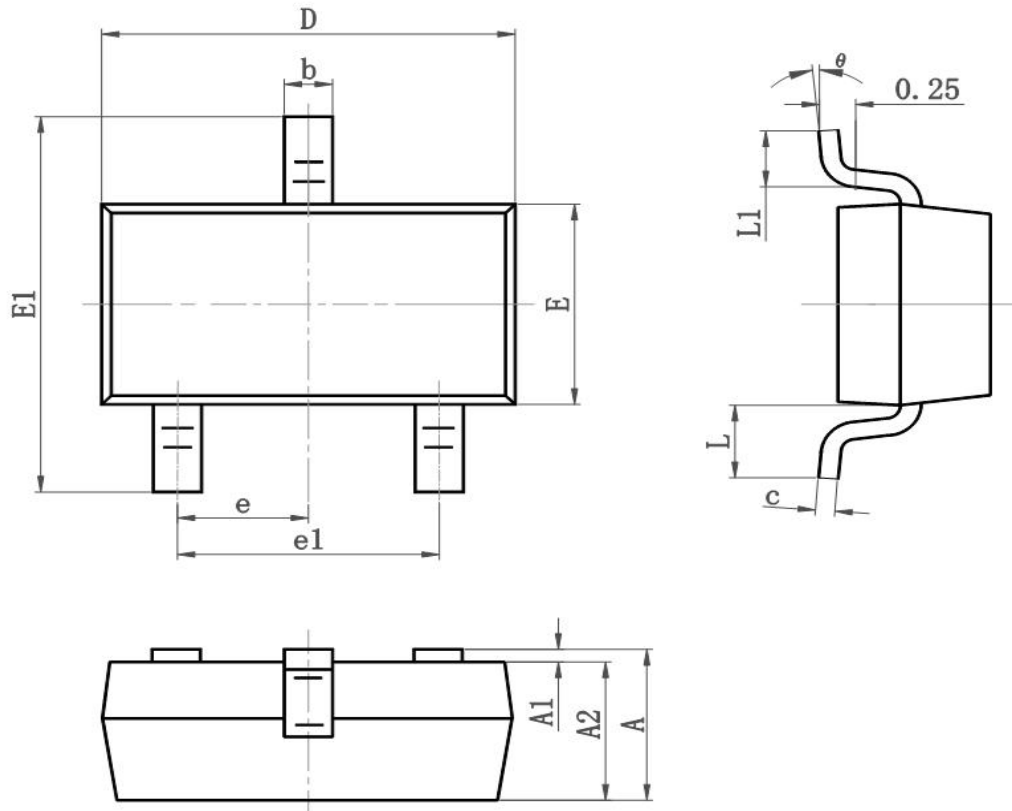
( $T_A=25^\circ\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^\circ\text{C}$ )

| 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<br>( $I_C=100\mu\text{A}$ , $I_E=0$ )              | $BV_{CBO}$    | 40         | —           | —          | V             |
| Collector-Emitter Breakdown Voltage<br>集电极发射极击穿电压<br>( $I_C=1\text{mA}$ , $I_B=0$ )              | $BV_{CEO}$    | 32         | —           | —          | V             |
| Emitter-Base Breakdown Voltage<br>发射极基极击穿电压<br>( $I_E=100\mu\text{A}$ , $I_C=0$ )                | $BV_{EBO}$    | 5          | —           | —          | V             |
| Collector-Base Leakage Current<br>集电极基极漏电流<br>( $V_{CB}=20\text{V}$ , $I_E=0$ )                  | $I_{CBO}$     | —          | —           | 1          | $\mu\text{A}$ |
| Emitter-Base Leakage Current<br>发射极基极漏电流<br>( $V_{EB}=4\text{V}$ , $I_C=0$ )                     | $I_{EBO}$     | —          | —           | 1          | $\mu\text{A}$ |
| DC Current Gain<br>直流电流增益<br>( $V_{CE}=3\text{V}$ , $I_C=100\text{mA}$ )                         | $H_{FE}$      | 82         | —           | 390        |               |
| Collector-Emitter Saturation Voltage<br>集电极发射极饱和压降<br>( $I_C=500\text{mA}$ , $I_B=50\text{mA}$ ) | $V_{CE(sat)}$ | —          | —           | 0.4        | V             |
| Base-Emitter Saturation Voltage<br>基极发射极饱和压降<br>( $I_C=500\text{mA}$ , $I_B=50\text{mA}$ )       | $V_{BE(sat)}$ | —          | —           | 1          | V             |
| Transition Frequency<br>特征频率<br>( $V_{CE}=5\text{V}$ , $I_C=20\text{mA}$ )                       | $f_T$         | —          | 250         | —          | MHz           |
| Output Capacitance<br>输出电容<br>( $V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )                | $C_{ob}$      | —          | 6           | —          | pF            |

■ Typical Characteristic Curve 典型特性曲线



■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     |
| $\theta$ | $0^\circ$                 | $8^\circ$ | $0^\circ$            | $8^\circ$ |