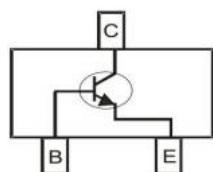


## SOT-23 Bipolar Transistor 双极型三极管

### ■Features 特点

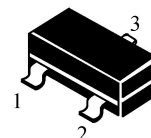
**NPN High Voltage 高压**

### ■Absolute Maximum Ratings 最大额定值



**SOT-23**

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



| 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              | $V_{CBO}$              | 300                   | V             |
| Collector-Emitter Voltage 集电极发射极电压          | $V_{CEO}$              | 300                   | V             |
| Emitter-Base Voltage 发射极基极电压                | $V_{EBO}$              | 5                     | V             |
| Collector Current 集电极电流                     | $I_C$                  | 300                   | mA            |
| Collector Peak Current 集电极脉冲电流              | $I_{CM}$               | 500                   | mA            |
| Power dissipation 耗散功率                      | $P_C(T_a=25^{\circ}C)$ | 350                   | mW            |
| Thermal Resistance Junction-Ambient 热阻      | $R_{\theta JA}$        | 357                   | $^{\circ}C/W$ |
| Junction and Storage Temperature<br>结温和储藏温度 | $T_J, T_{stg}$         | -55to+150 $^{\circ}C$ |               |

### ■Device Marking 产品打标

MMBTA42-6AF=1D

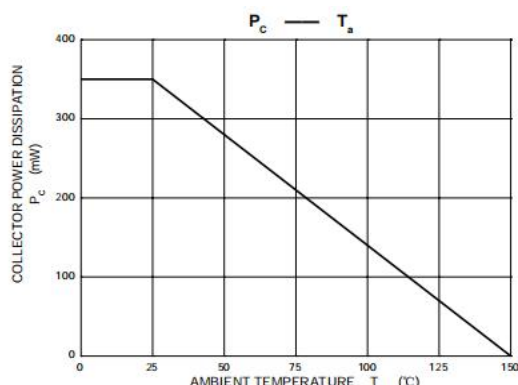
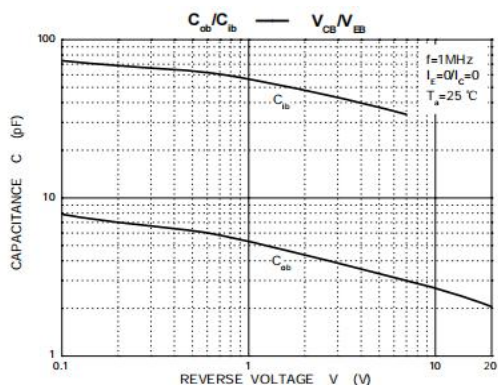
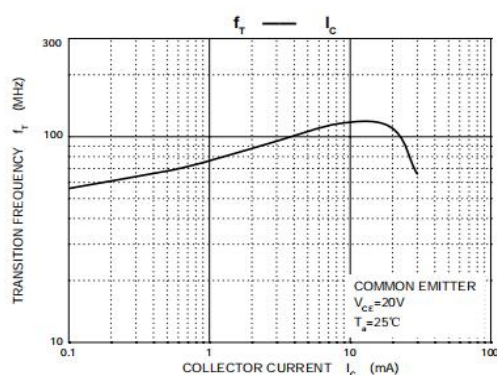
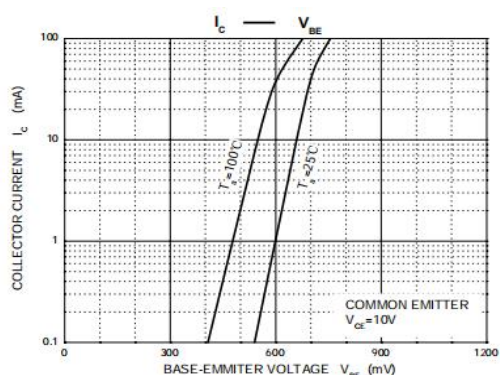
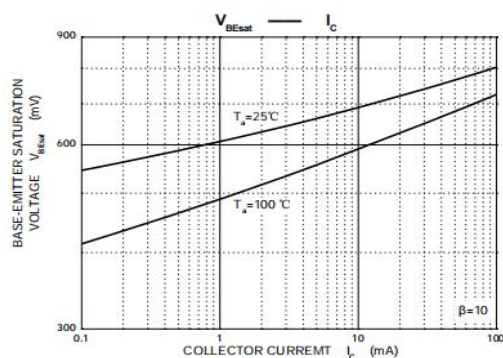
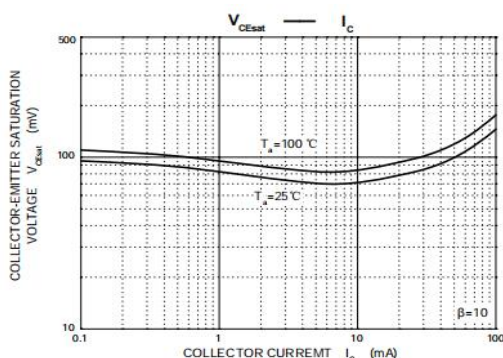
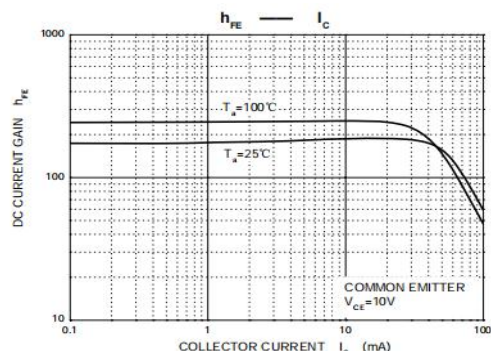
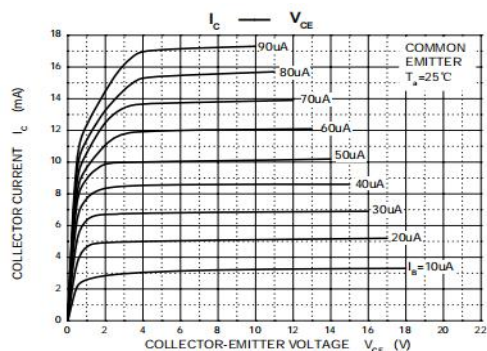


#### ■Electrical Characteristics 电特性

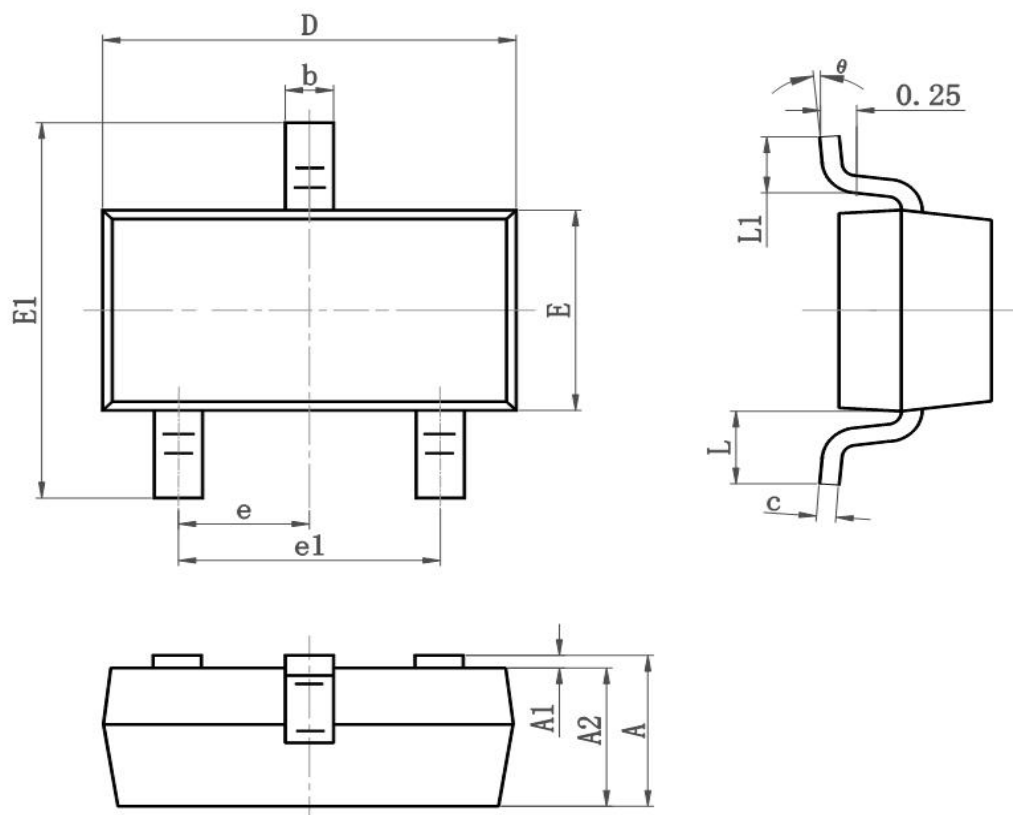
( $T_A=25^{\circ}\text{C}$  unless otherwise noted 如无特殊说明, 温度为  $25^{\circ}\text{C}$ )

| 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( $I_C=100\mu\text{A}$ , $I_E=0$ )            | $BV_{CBO}$    | 300        | —           | —          | V          |
| Collector-Emitter Breakdown Voltage<br>集电极发射极击穿电压( $I_C=1\text{mA}$ , $I_B=0$ )            | $BV_{CEO}$    | 300        | —           | —          | V          |
| Emitter-Base Breakdown Voltage<br>发射极基极击穿电压( $I_E=10\mu\text{A}$ , $I_C=0$ )               | $BV_{EBO}$    | 5          | —           | —          | V          |
| Collector-Base Leakage Current<br>集电极基极漏电流( $V_{CB}=300\text{V}$ , $I_E=0$ )               | $I_{CBO}$     | —          | —           | 100        | nA         |
| Collector-Emitter Leakage Current<br>集电极发射极漏电流( $V_{CE}=200\text{V}$ , $I_B=0$ )           | $I_{CEO}$     | —          | —           | 100        | nA         |
| Emitter-Base Leakage Current<br>发射极基极漏电流( $V_{EB}=5\text{V}$ , $I_C=0$ )                   | $I_{EBO}$     | —          | —           | 100        | nA         |
| DC Current Gain<br>直流电流增益( $V_{CE}=10\text{V}$ , $I_C=1\text{mA}$ )                        | $H_{FE}(1)$   | 60         | —           | —          |            |
| DC Current Gain<br>直流电流增益( $V_{CE}=10\text{V}$ , $I_C=10\text{mA}$ )                       | $H_{FE}(2)$   | 100        | —           | 200        |            |
| DC Current Gain<br>直流电流增益( $V_{CE}=10\text{V}$ , $I_C=30\text{mA}$ )                       | $H_{FE}(3)$   | 60         | —           | —          |            |
| Collector-Emitter Saturation Voltage<br>集电极发射极饱和压降( $I_C=20\text{mA}$ , $I_B=2\text{mA}$ ) | $V_{CE(sat)}$ | —          | —           | 0.2        | V          |
| Base-Emitter Saturation Voltage<br>基极发射极饱和压降( $I_C=20\text{mA}$ , $I_B=2\text{mA}$ )       | $V_{BE(sat)}$ | —          | —           | 0.9        | V          |
| Transition Frequency<br>特征频率( $V_{CE}=20\text{V}$ , $I_C=10\text{mA}$ )                    | $f_T$         | 50         | —           | —          | MHz        |
| Output Capacitance<br>输出电容( $V_{CB}=20\text{V}$ , $I_E=0$ , $f=1\text{MHz}$ )              | $C_{ob}$      | —          | 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 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |