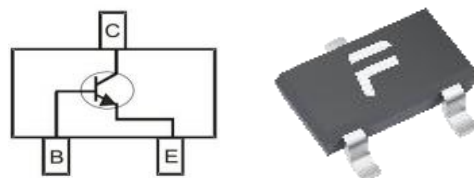


## SOT-323 Bipolar Transistor 双极型三极管

### ■Features 特点

NPN Switching 开关



### ■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              | $V_{CBO}$              | 75                    | V             |
| Collector-Emitter Voltage 集电极发射极电压          | $V_{CEO}$              | 40                    | V             |
| Emitter-Base Voltage 发射极基极电压                | $V_{EBO}$              | 6                     | V             |
| Collector Current 集电极电流                     | $I_C$                  | 600                   | mA            |
| Power dissipation 耗散功率                      | $P_C(T_a=25^{\circ}C)$ | 200                   | mW            |
| Thermal Resistance Junction-Ambient 热阻      | $R_{\theta JA}$        | 625                   | $^{\circ}C/W$ |
| 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

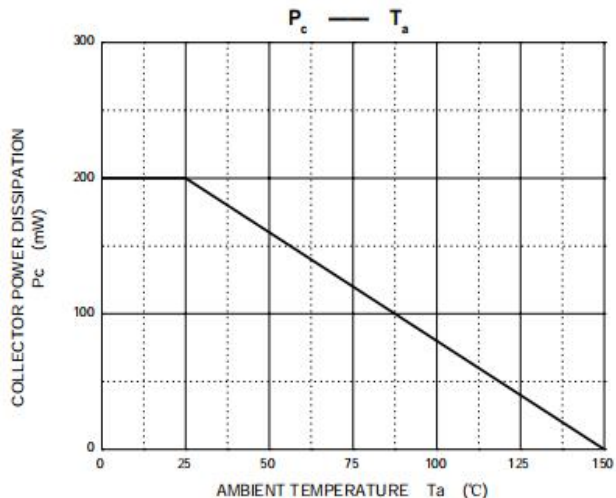
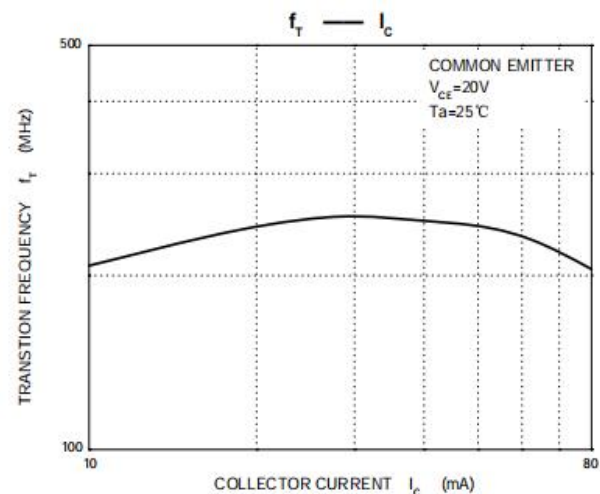
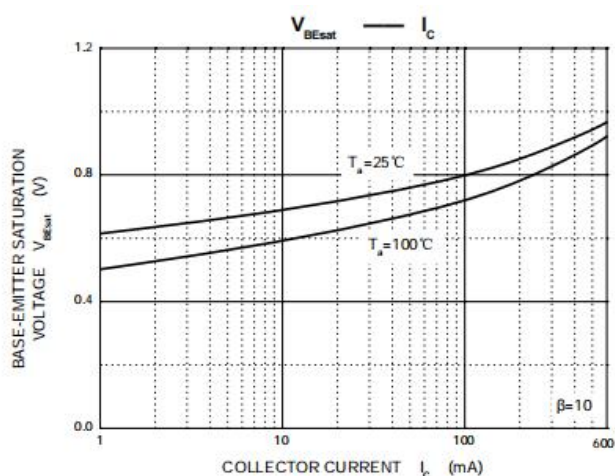
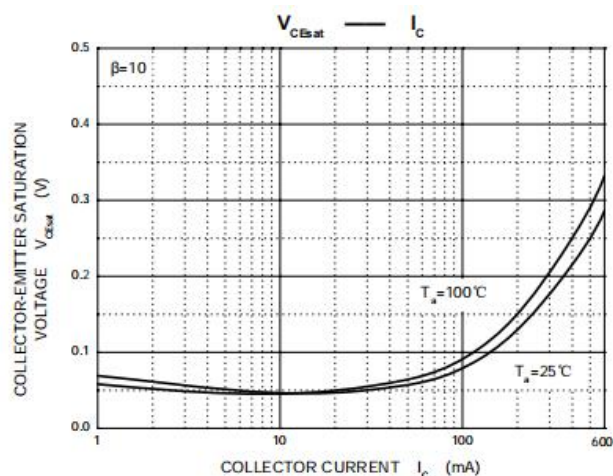
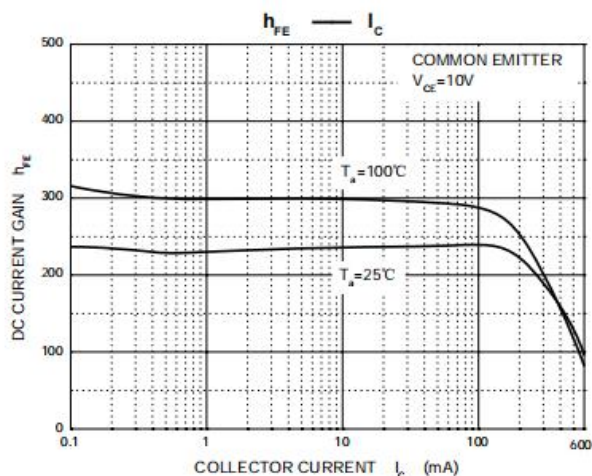
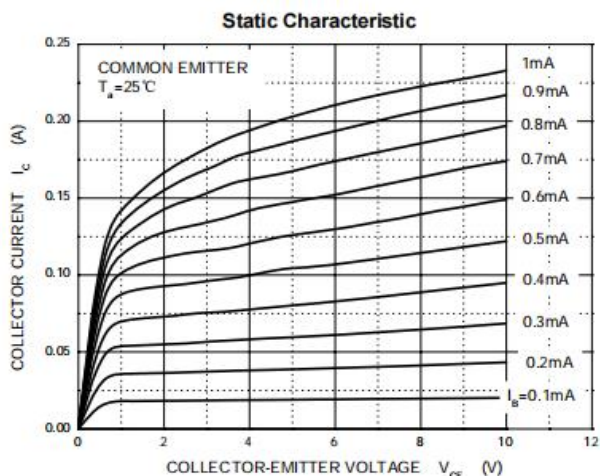
MMBT2222AW=K3P

**■Electrical Characteristics 电特性**

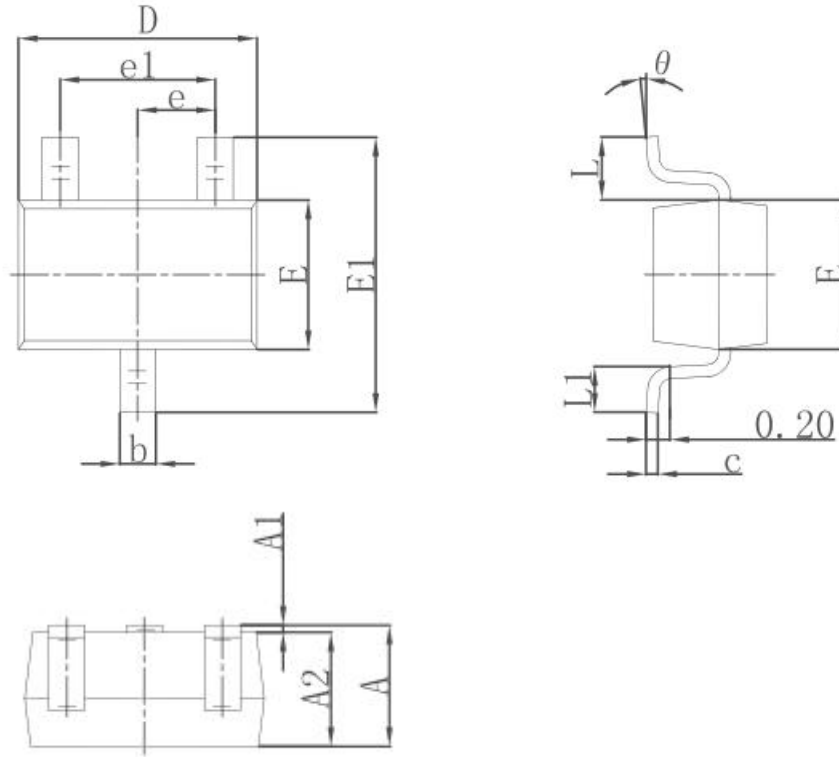
(TA=25℃ unless otherwise noted 如无特殊说明, 温度为 25℃)

| 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(IC= 1mA, IE=0)                                                                        | BV <sub>CBO</sub>    | 75              | —           | —          | V          |
| Collector-Emitter Breakdown Voltage<br>集电极发射极击穿电压(IC= 10mA, IB=0)                                                                   | BV <sub>CEO</sub>    | 40              | —           | —          | V          |
| Emitter-Base Breakdown Voltage<br>发射极基极击穿电压(IE= 1mA, IC=0)                                                                          | BV <sub>EBO</sub>    | 6               | —           | —          | V          |
| Collector-Base Leakage Current<br>集电极基极漏电流(V <sub>CB</sub> = 50V, IE=0)                                                             | I <sub>CBO</sub>     | —               | —           | 100        | nA         |
| Collector-Emitter Leakage Current<br>集电极发射极漏电流(V <sub>CE</sub> = 30V, V <sub>BE</sub> = -0.5V)                                      | I <sub>CEX</sub>     | —               | —           | 100        | nA         |
| Emitter-Base Leakage Current<br>发射极基极漏电流(V <sub>EB</sub> = 4V, IC=0)                                                                | I <sub>EBO</sub>     | —               | —           | 100        | nA         |
| DC Current Gain(V <sub>CE</sub> = 10V, IC= 0.1mA)<br>直流电流增益(V <sub>CE</sub> = 10V, IC= 150mA)<br>(V <sub>CE</sub> = 10V, IC= 500mA) | H <sub>FE</sub>      | 35<br>100<br>40 | —           | 300        |            |
| Collector-Emitter Saturation Voltage<br>集电极发射极饱和压降(IC= 500mA, IB= 50mA)<br>(IC= 150mA, IB= 15mA)                                    | V <sub>CE(sat)</sub> | —               | —           | 0.6<br>0.4 | V          |
| Base-Emitter Saturation Voltage<br>基极发射极饱和压降(IC= 500mA, IB= 50mA)<br>(IC= 150mA, IB= 15mA)                                          | V <sub>BE(sat)</sub> | —               | —           | 2<br>1.2   | V          |
| Transition Frequency<br>特征频率(V <sub>CE</sub> = 20V, IC= 20mA)                                                                       | f <sub>T</sub>       | 300             | —           | —          | MHz        |
| Delay Time 延迟时间<br>(V <sub>CC</sub> =30V, V <sub>BE</sub> =-0.5V, IC=150mA, IB1=15mA)                                               | t <sub>d</sub>       | —               | —           | 10         | ns         |
| Rise Time 上升时间<br>(V <sub>CC</sub> =30V, V <sub>BE</sub> =-0.5V, IC=150mA, IB1=15mA)                                                | t <sub>r</sub>       | —               | —           | 25         | ns         |
| Storage Time 贮存时间<br>(V <sub>CC</sub> =30V, IC=150mA, IB1=IB2=15mA)                                                                 | t <sub>s</sub>       | —               | —           | 225        | ns         |
| Fall Time 下降时间<br>(V <sub>CC</sub> =30V, IC=150mA, IB1=IB2=15mA)                                                                    | t <sub>f</sub>       | —               | —           | 60         | ns         |

■ 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                     | 1.100 | 0.035                | 0.043 |
| A1       | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2       | 0.900                     | 1.000 | 0.035                | 0.039 |
| b        | 0.200                     | 0.400 | 0.008                | 0.016 |
| c        | 0.080                     | 0.150 | 0.003                | 0.006 |
| D        | 2.000                     | 2.200 | 0.079                | 0.087 |
| E        | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1       | 2.150                     | 2.450 | 0.085                | 0.096 |
| e        | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1       | 1.200                     | 1.400 | 0.047                | 0.055 |
| L        | 0.525 REF                 |       | 0.021 REF            |       |
| L1       | 0.260                     | 0.460 | 0.010                | 0.018 |
| $\theta$ | 0°                        | 8°    | 0°                   | 8°    |