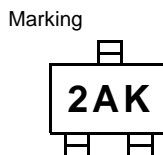
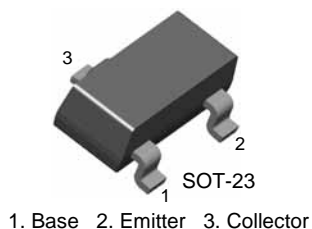


MMBT3906K

PNP Epitaxial Silicon Transistor

General Purpose Transistor



Absolute Maximum Ratings T_a = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------------------------|--|-----------|-------|
| V _{CBO} | Collector-Base Voltage | -40 | V |
| V _{CEO} | Collector-Emitter Voltage | -40 | V |
| V _{EBO} | Emitter-Base Voltage | -5 | V |
| I _C | Collector Current | -200 | mA |
| P _C | Collector Power Dissipation | 350 | mW |
| T _J , T _{STG} | Operating Junction and Storage Temperature Range | -55 ~ 150 | °C |

Electrical Characteristics T_a = 25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|-----------------------|--|--|-----------------------------|----------------|--------|
| BV _{CBO} | Collector-Base Breakdown Voltage | I _C = -10μA, I _E = 0 | -40 | | V |
| BV _{CEO} | Collector-Emitter Breakdown Voltage * | I _C = -1.0mA, I _B = 0 | -40 | | V |
| BV _{EBO} | Emitter-Base Breakdown Voltage | I _E = 10μA, I _C = 0 | -5 | | V |
| I _{CEX} | Collector Cut-off Current | V _{CE} = -30V, V _{EB} = -3V | | -50 | nA |
| h _{FE} | DC Current Gain * | V _{CE} = -1V, I _C = -0.1mA V _{CE} = -1V, I _C = -1mA V _{CE} = -1V, I _C = -10mA V _{CE} = -1V, I _C = -50mA V _{CE} = -1V, I _C = -100mA | 60 80 100 60 30 | 300 | |
| V _{CE} (sat) | Collector-Emitter Saturation Voltage * | I _C = -10mA, I _B = -1mA I _C = -50mA, I _B = -5.0mA | | -0.25 -0.4 | V V |
| V _{BE} (sat) | Base-Emitter Saturation Voltage * | I _C = -10mA, I _B = -1.0mA I _C = -50mA, I _B = -5.0mA | -0.65 | -0.85 -0.95 | V V |
| f _T | Current Gain Bandwidth Product | I _C = -10mA, V _{CE} = -20V, f = 100MHz | 250 | | MHz |
| C _{ob} | Output Capacitance | V _{CB} = -5V, I _E = 0, f = 1.0MHz | | 4.5 | pF |
| NF | Noise Figure | I _C = -100μA, V _{CE} = -5V, R _S = 1KΩ f = 10Hz to 15.7KHz | | 4 | dB |
| t _{ON} | Turn On Time | V _{CC} = -3V, V _{BE} = -0.5V I _C = -10mA, I _{B1} = -1mA | | 70 | ns |
| t _{OFF} | Turn Off Time | V _{CC} = -3V, I _C = -10mA, I _{B1} = I _{B2} = -1mA | | 300 | ns |

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

Typical Performance Characteristics

Figure 1. DC current Gain

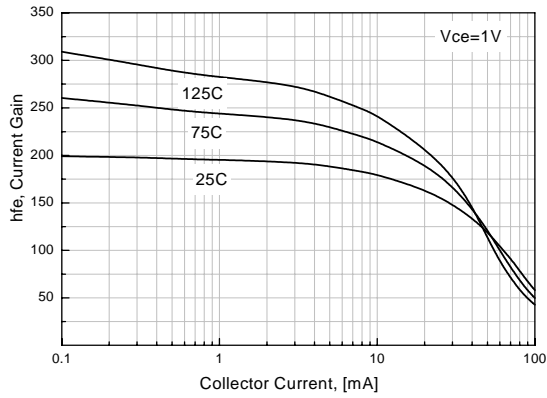


Figure 2. Collector-Emitter Saturation Voltage

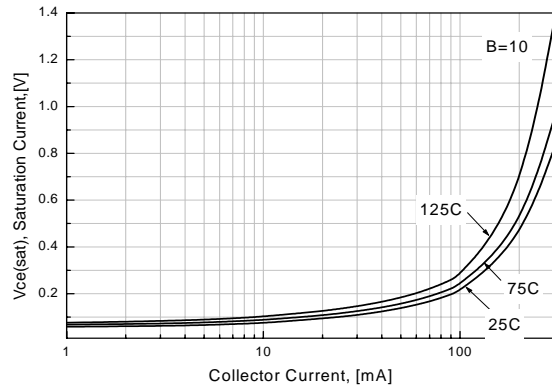


Figure 3. Base-Emitter Saturation Voltage

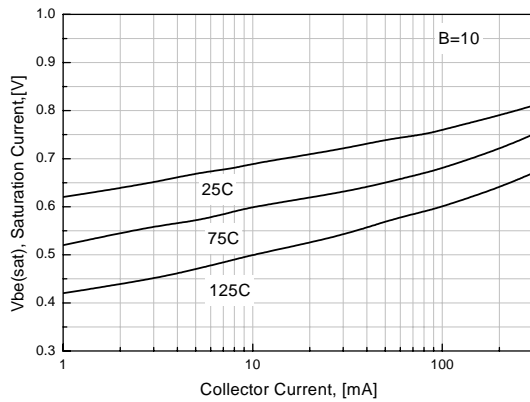


Figure 4. Collector - Base Leakage Current

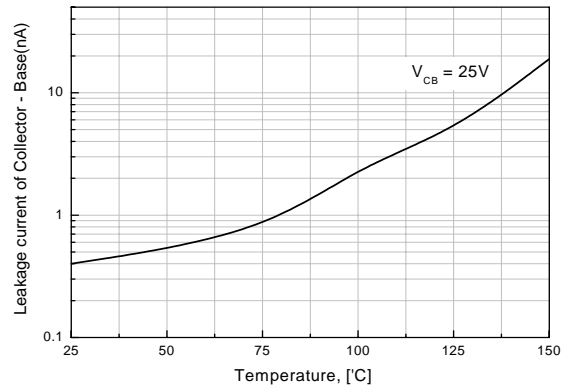


Figure 5. Output Capacitance

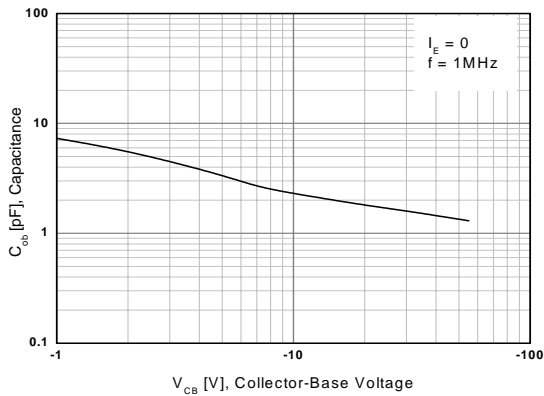
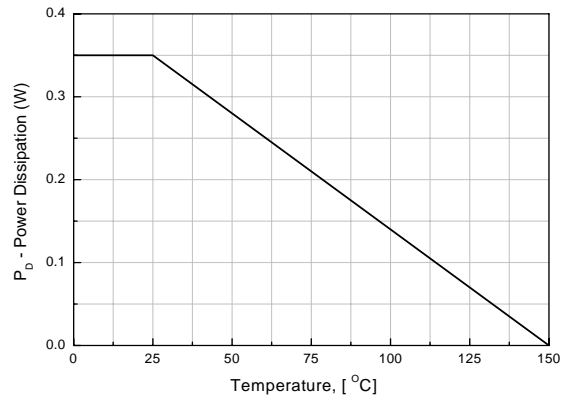
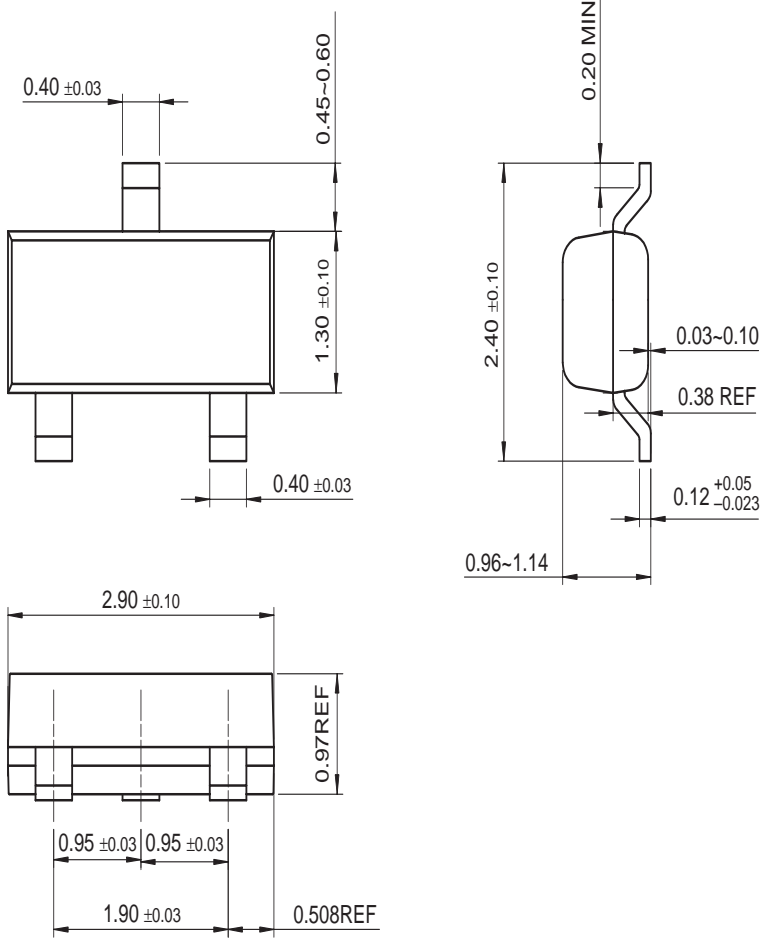


Figure 6. Power Dissipation vs Ambient Temperature



Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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