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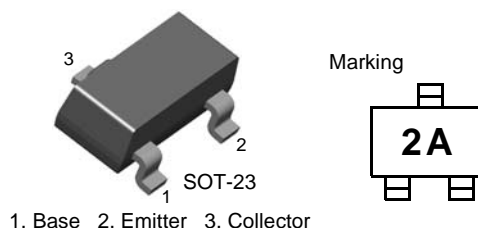
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# KST3906

## PNP Epitaxial Silicon Transistor

### Features

- General Purpose Transistor



### Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise noted

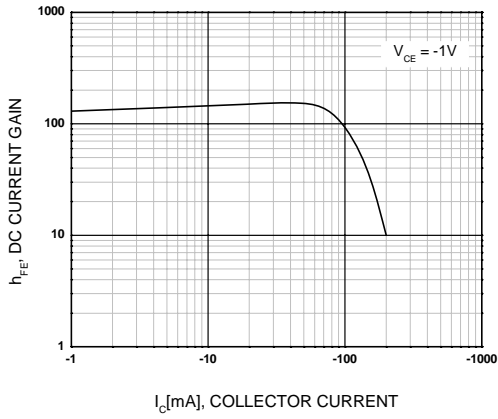
| Symbol    | Parameter                   | Value | Unit             |
|-----------|-----------------------------|-------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | -40   | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | -40   | V                |
| $V_{EBO}$ | Emitter-Base Voltage        | -5    | V                |
| $I_C$     | Collector Current           | -200  | mA               |
| $P_C$     | Collector Power Dissipation | 350   | mW               |
| $T_{STG}$ | Storage Temperature         | 150   | $^\circ\text{C}$ |

### Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

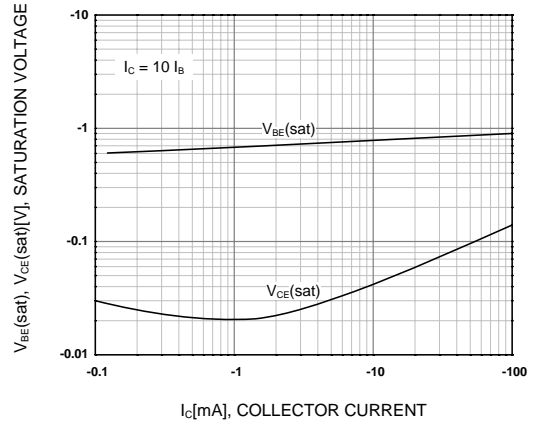
| Symbol               | Parameter                              | Test Condition   | Min.                        | Max.           | Unit   |
|----------------------|--|--|-----------------------------|----------------|--------|
| $BV_{CBO}$           | Collector-Base Breakdown Voltage       | $I_C = -10\mu\text{A}, I_E = 0$  | -40                         |                | V      |
| $BV_{CEO}$           | * Collector-Emitter Breakdown Voltage  | $I_C = -1.0\text{mA}, I_B = 0$   | -40                         |                | V      |
| $BV_{EBO}$           | Emitter-Base Breakdown Voltage         | $I_E = -10\mu\text{A}, I_C = 0$  | -5                          |                | V      |
| $I_{CEX}$            | Collector Cut-off Current              | $V_{CE} = -30\text{V}, V_{EB} = -3\text{V}$  |                             | -50            | nA     |
| $h_{FE}$             | * DC Current Gain                      | $V_{CE} = -1\text{V}, I_C = -0.1\text{mA}$<br>$V_{CE} = -1\text{V}, I_C = -1\text{mA}$<br>$V_{CE} = -1\text{V}, I_C = -10\text{mA}$<br>$V_{CE} = -1\text{V}, I_C = -50\text{mA}$<br>$V_{CE} = -1\text{V}, I_C = -100\text{mA}$ | 60<br>80<br>100<br>60<br>30 | 300            |        |
| $V_{CE}(\text{sat})$ | * Collector-Emitter Saturation Voltage | $I_C = -10\text{mA}, I_B = -1.0\text{mA}$<br>$I_C = -50\text{mA}, I_B = -5.0\text{mA}$   |                             | -0.25<br>-0.4  | V<br>V |
| $V_{BE}(\text{sat})$ | * Base-Emitter Saturation Voltage      | $I_C = -10\text{mA}, I_B = -1.0\text{mA}$<br>$I_C = -50\text{mA}, I_B = -5.0\text{mA}$   | -0.65                       | -0.85<br>-0.95 | V<br>V |
| $f_T$                | Current Gain Bandwidth Product         | $I_C = -10\text{mA}, V_{CE} = -20\text{V}, f = 100\text{MHz}$  | 250                         |                | MHz    |
| $C_{ob}$             | Output Capacitance                     | $V_{CB} = -5\text{V}, I_E = 0, f = 1.0\text{MHz}$  |                             | 4.5            | pF     |
| NF                   | Noise Figure                           | $I_C = -100\mu\text{A}, V_{CE} = -5\text{V}$<br>$R_S = 1\text{K}\Omega, f = 10\text{Hz to } 15.7\text{KHz}$  |                             | 4              | dB     |
| $t_{ON}$             | Turn On Time                           | $V_{CC} = -3\text{V}, V_{BE} = -0.5\text{V}$<br>$I_C = -10\text{mA}, I_{B1} = -1\text{mA}$   |                             | 70             | ns     |
| $t_{OFF}$            | Turn Off Time                          | $V_{CC} = -3\text{V}, I_C = -10\text{mA}$<br>$I_{B1} = I_{B2} = -1\text{mA}$   |                             | 300            | ns     |

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

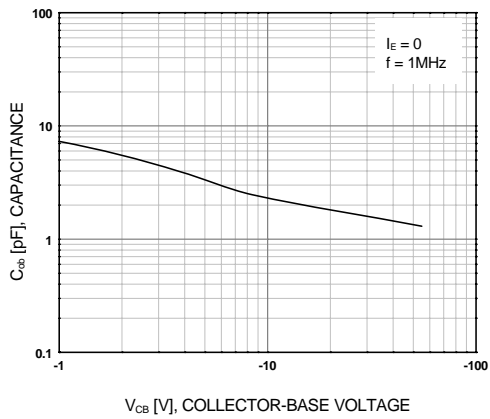
## Typical Performance Characteristics



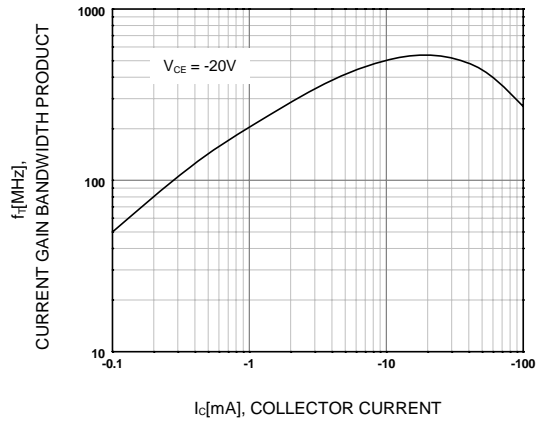
**Figure 1. DC current Gain**



**Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



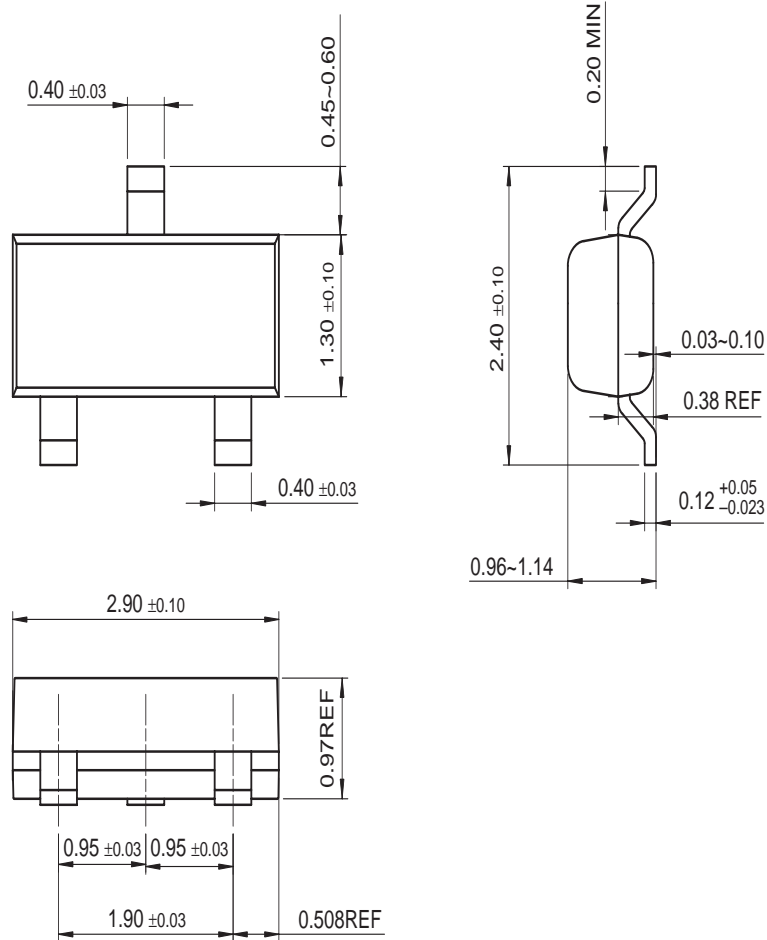
**Figure 3. Output Capacitance**



**Figure 4. Current Gain Bandwidth Product**

Physical Dimensions

SOT-23



Dimensions in Millimeters



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| CorePOWER™               | Green FPS™ e-Series™                | QFET®                                 |   |
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