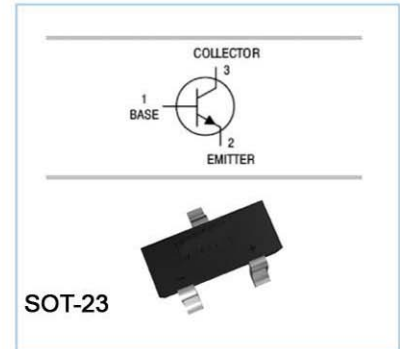


NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications



Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|---------------|------------------|
| Collector Base Voltage | V_{CBO} | 50 | V |
| Collector Emitter Voltage | V_{CEO} | 45 | V |
| Emitter Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 100 | mA |
| Power Dissipation | P_{tot} | 200 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_S | - 55 to + 150 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Max. | Unit |
|---|---------------|------|------|------|
| DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 1\text{ mA}$ | h_{FE} | 300 | 400 | - |
| Collector Cutoff Current at $V_{CB} = 50\text{ V}$ | I_{CBO} | - | 50 | nA |
| Emitter Cutoff Current at $V_{EB} = 5\text{ V}$ | I_{EBO} | - | 50 | nA |
| Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$ | $V_{(BR)CBO}$ | 50 | - | V |
| Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$ | $V_{(BR)CEO}$ | 45 | - | V |
| Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$ | $V_{(BR)EBO}$ | 5 | - | V |
| Collector Emitter Saturation Voltage at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$ | $V_{CE(sat)}$ | - | 0.6 | V |
| Base Emitter Saturation Voltage at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$ | $V_{BE(sat)}$ | - | 1 | V |
| Gain Bandwidth Product at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$ | f_T | 100 | - | MHz |
| Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$ | C_{OB} | - | 6 | pF |
| Noise Figure at $V_{CE} = 5\text{ V}$, $I_C = 200\text{ }\mu\text{A}$, $f = 1\text{ KHz}$, $R_G = 2\text{ K}\Omega$ | NF | - | 10 | dB |

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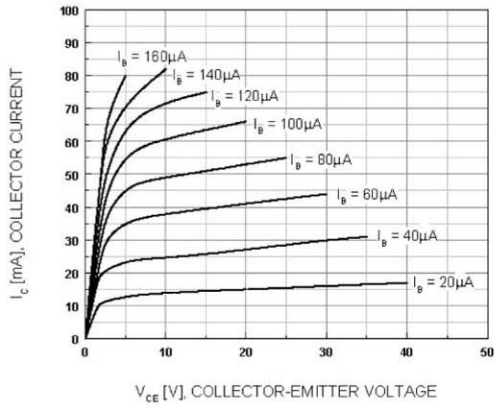


Figure 1. Static Characteristic

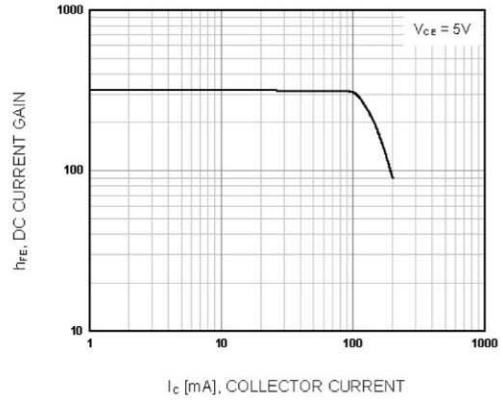


Figure 2. DC current Gain

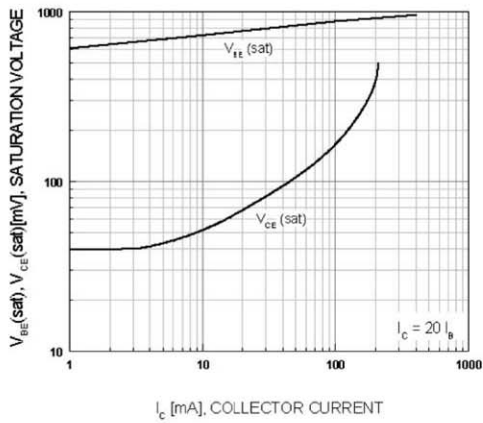


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

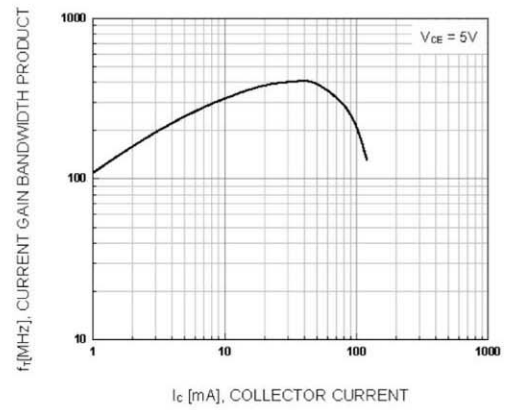


Figure 4. Current Gain Bandwidth Product

