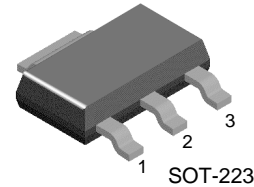


FJT44

NPN Epitaxial Silicon Transistor

- High Voltage Transistor



SOT-223

1. Base 2. Collector 3. Emitter

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

| Symbol | Parameter | Value | Units |
|-----------|--|-------------|------------------|
| V_{CBO} | Collector-Base Voltage | 500 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current | 300 | mA |
| P_C | Collector Dissipation ($T_a = 25^\circ\text{C}$) | 2 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | - 55 ~ +150 | $^\circ\text{C}$ |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150°C .
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics* $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------|---|-------|---------------------------|
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 62.5 | $^\circ\text{C}/\text{W}$ |

* Device mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm. mounting pad for the collector lead min. 6 cm^2

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

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|---------------|--------------------------------------|--|----------------------|------|--------------------|-------------|
| BV_{CBO} | Collector-Base Breakdown Voltage | $I_C = 100\mu\text{A}$, $I_E = 0$ | 500 | | | V |
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 1\text{mA}$, $I_B = 0$ | 400 | | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E = 100\mu\text{A}$, $I_C = 0$ | 6 | | | V |
| I_{CBO} | Collector-Base Cutoff Current | $V_{CB} = 400\text{V}$, $I_E = 0$ | | | 100 | nA |
| I_{CES} | Collector-Emitter Cutoff Current | $V_{CE} = 400\text{V}$, $V_{BE} = 0$ | | | 500 | nA |
| I_{EBO} | Emitter-Base Cutoff Current | $V_{CE} = 4\text{V}$, $I_C = 0$ | | | 100 | nA |
| h_{FE} | DC Current Gain | $V_{CE}=10\text{V}$, $I_C=1\text{mA}$ $V_{CE}=10\text{V}$, $I_C=10\text{mA}$ $V_{CE}=10\text{V}$, $I_C=50\text{mA}$ $V_{CE}=10\text{V}$, $I_C=100\text{mA}$ | 40 50 45 40 | | 200 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 1\text{mA}$, $I_B = 0.1\text{mA}$ $I_C = 10\text{mA}$, $I_B = 1\text{mA}$ $I_C = 50\text{mA}$, $I_B = 5\text{mA}$ | | | 0.4 0.5 0.75 | V V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C = 10\text{mA}$, $I_B = 1\text{mA}$ | | | 0.75 | V |
| C_{obo} | Output Capacitance | $V_{CB} = 20\text{V}$, $I_E = 0$, $f = 1\text{MHz}$ | | | 7 | pF |

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

Typical Performance Characteristics

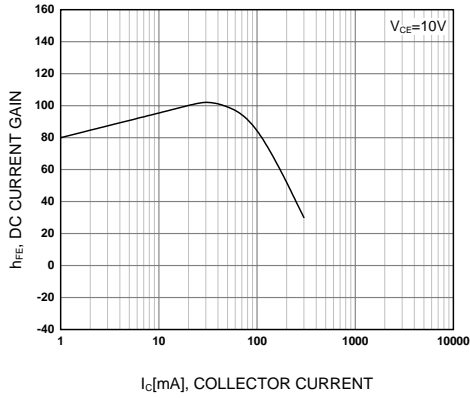


Figure 1. DC current Gain

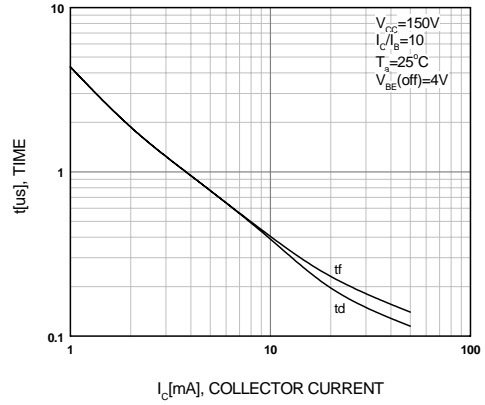


Figure 2. Turn-On Switching Times

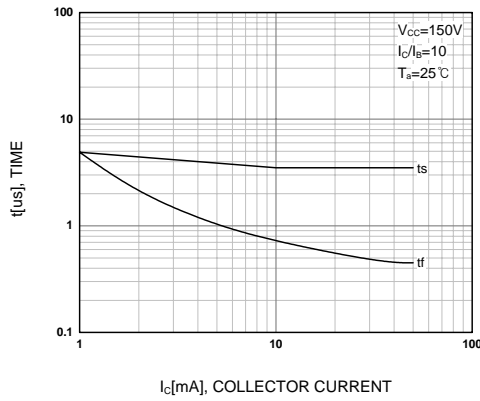


Figure 3. Turn-Off Switching Times

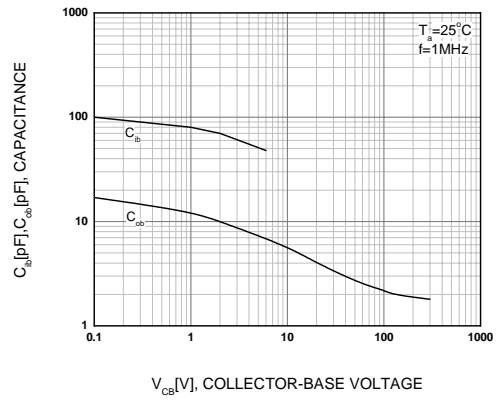


Figure 4. Capacitance

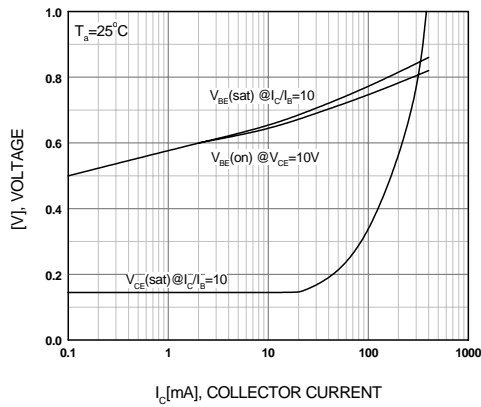


Figure 5. On Voltage

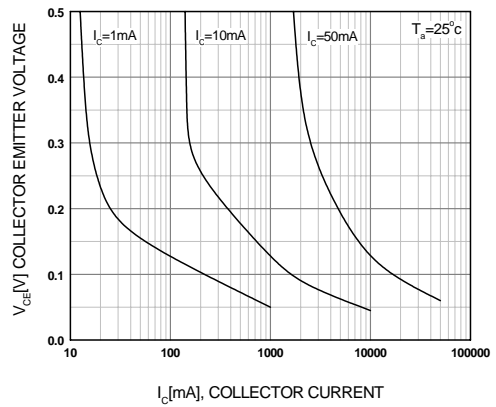


Figure 6. Collector Saturation Region

Typical Performance Characteristics

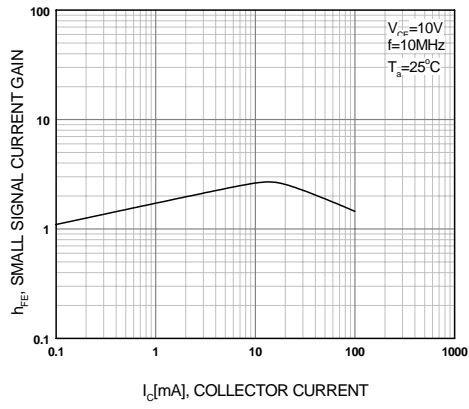
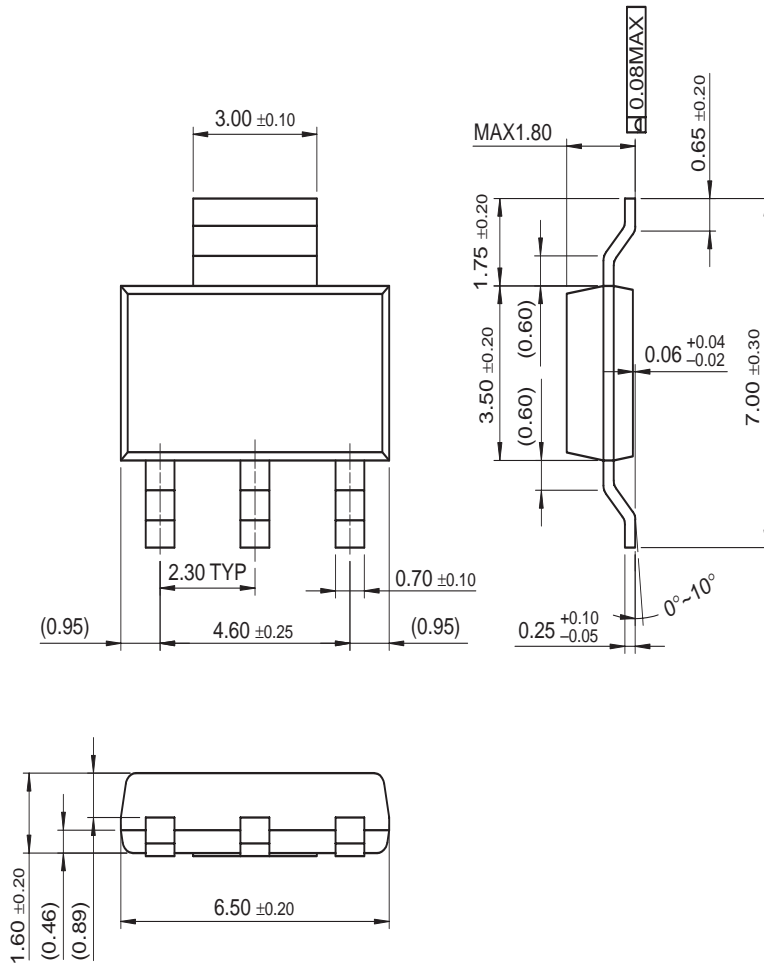


Figure 1. High Frequency Current Gain

Mechanical Dimensions

SOT-223



Dimensions in Millimeters

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| Build it Now™ | HiSeC™ | OPTOPLANAR™ | Stealth™ | Wire™ |
| CoolFET™ | l ² C™ | PACMAN™ | SuperFET™ | |
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| DOMETM | ImpliedDisconnect™ | Power247™ | SuperSOT™-6 | |
| EcoSPARK™ | IntelliMAX™ | PowerEdge™ | SuperSOT™-8 | |
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Rev. I20