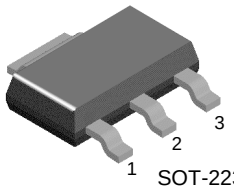
FAIRCHILD SEMICONDUCTOR®

September 2006

FJT44
NPN Epitaxial Silicon Transistor

- High Voltage Transistor



SOT-223

1. Base 2. Collector 3. Emitter

Absolute Maximum Ratings* T_a=25°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 (Ta = 25 °C)	2	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	- 55 ~ +150	°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°C unless otherwise noted

Symbol	Parameter	Value	Units
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	°C/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°C unless otherwise noted

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

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

Typical Performance Characteristics

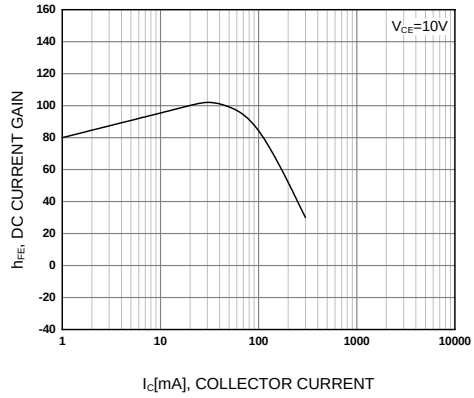


Figure 1. DC current Gain

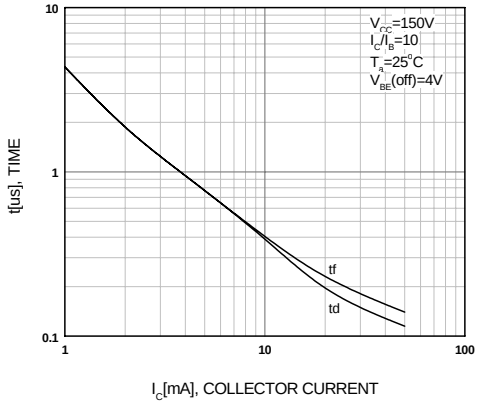


Figure 2. Turn-On Switching Times

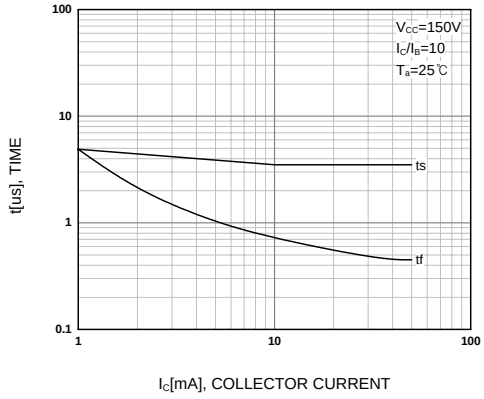


Figure 3. Turn-Off Switching Times

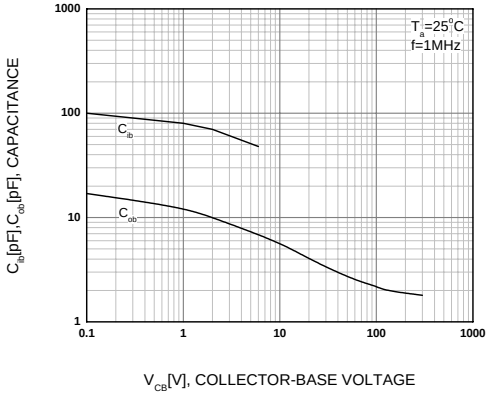


Figure 4. Capacitance

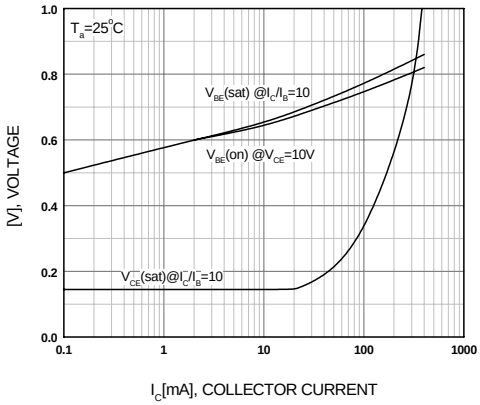


Figure 5. On Voltage

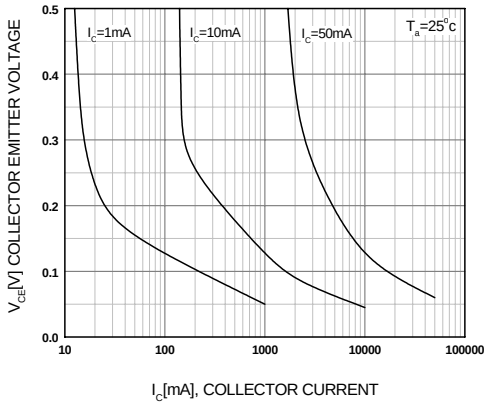


Figure 6. Collector Saturation Region

Typical Performance Characteristics

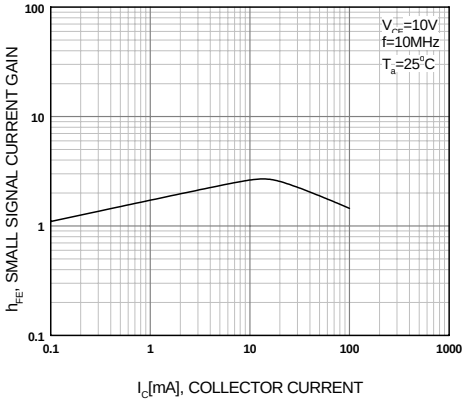
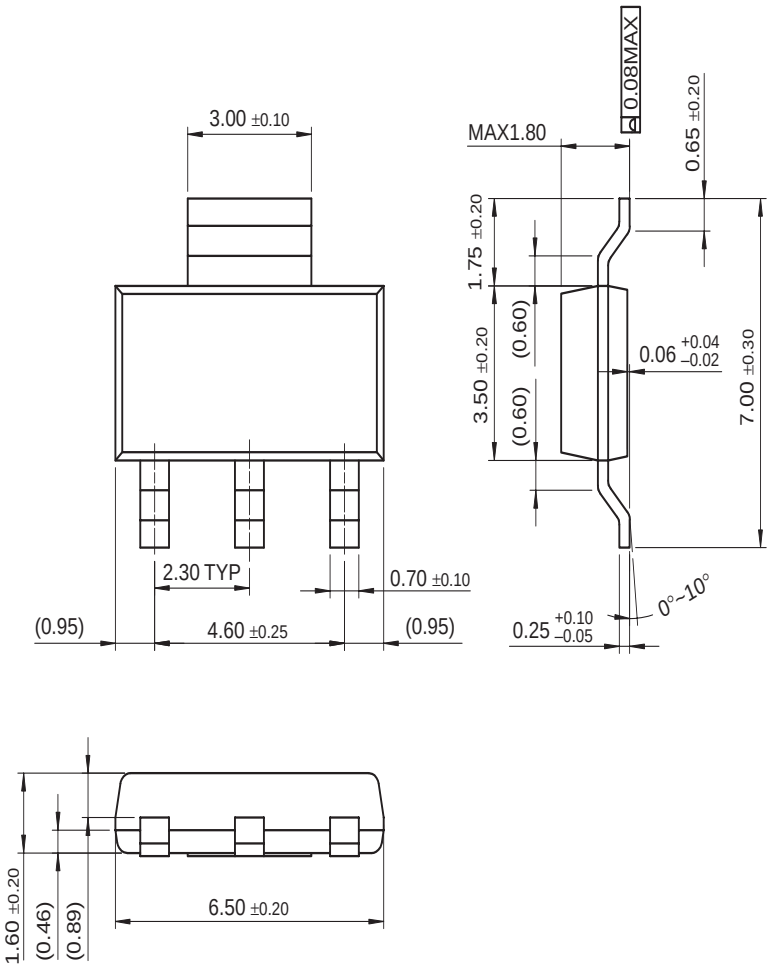


Figure 1. High Frequency Current Gain

Mechanical Dimensions

SOT-223



Dimensions in Millimeters

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