



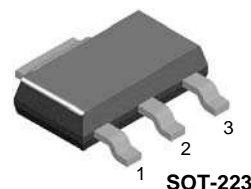
December 2009

# FJT44

## NPN Epitaxial Silicon Transistor

### Features

- High Voltage Transistor



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 to +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  $150^{\circ}\text{C}$ .
- 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	$^{\circ}\text{C/W}$

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

### Ordering Information

Part Number	Package	Packing size	Packing Method	Remarks
FJT44KTF	SOT-223	2500 pcs	Tape and Reel	
FJT44TF	SOT-223	4000 pcs	Tape and Reel	

**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

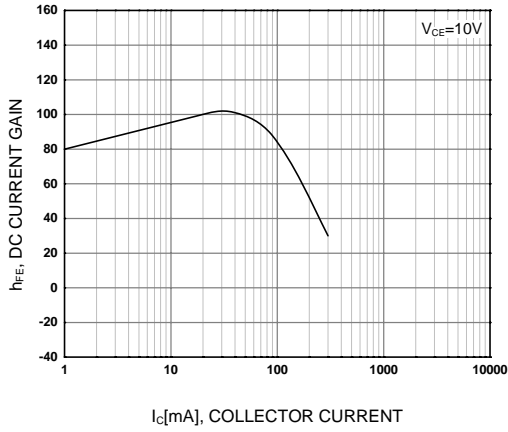


Figure 1. DC current Gain

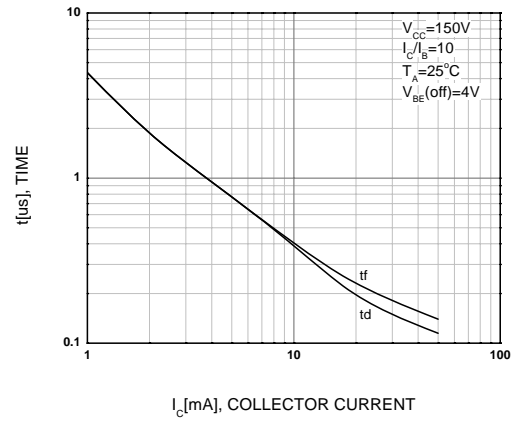


Figure 2. Turn-On Switching Times

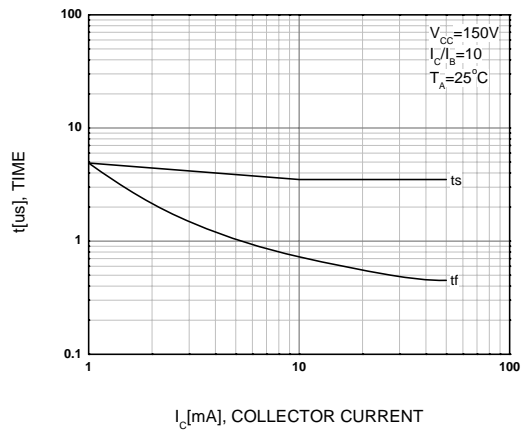


Figure 3. Turn-Off Switching Times

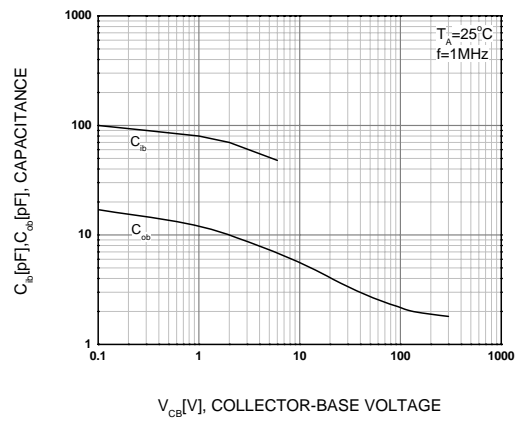


Figure 4. Capacitance

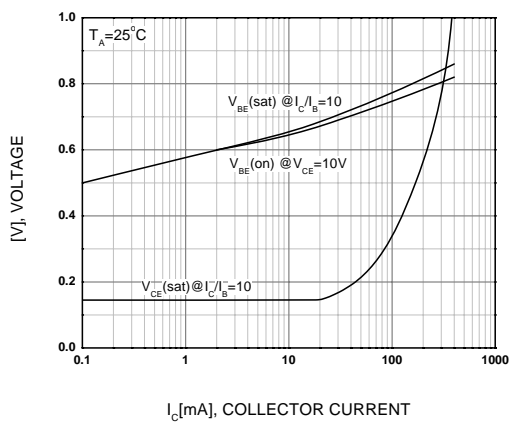


Figure 5. On Voltage

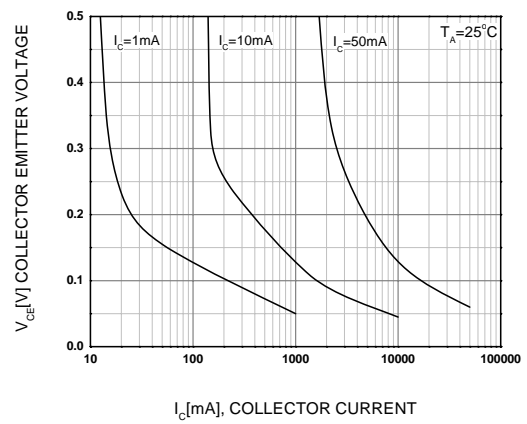
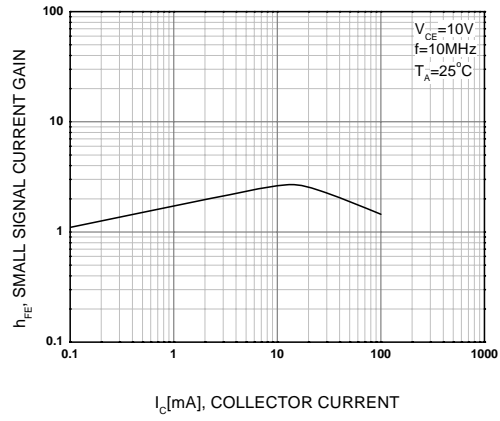
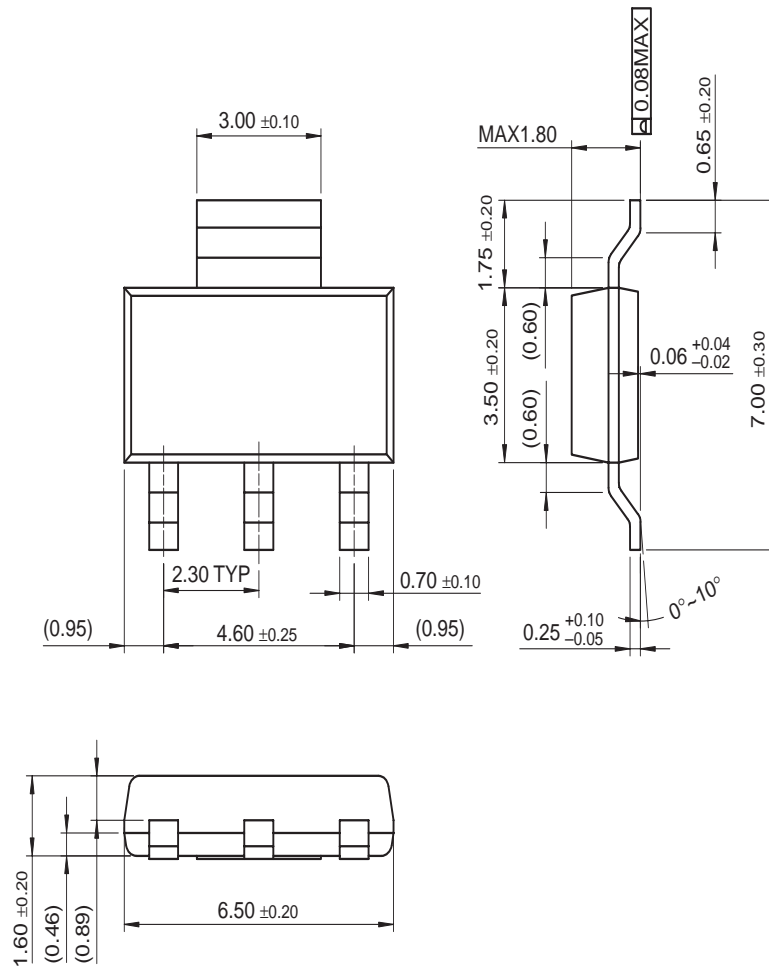


Figure 6. Collector Saturation Region

**Typical Performance Characteristics** (Continued)**Figure 1. High Frequency Current Gain**

# Physical Dimensions

## SOT-223









Dimensions in Millimeters



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