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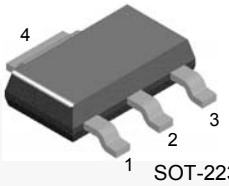
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October 2014

FJT44
NPN Epitaxial Silicon Transistor

Features

- High-Voltage Transistor



SOT-223

1. Base 2,4. Collector 3. Emitter

Ordering Information

Part Number	Marking	Package	Packing Method, Size
FJT44TF	FJT44	SOT-223 4L	Tape and Reel, 4000 pcs
FJT44KTF	FJT44	SOT-223 4L	Tape and Reel, 2500 pcs

Absolute Maximum Ratings(1),(2)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
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
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

Notes:

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

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Thermal Characteristics[3]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Max.	Unit
P_D	Power Dissipation, T_C = 25°C	2	W
	Derate Above 25°C	16	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	62.5	°C/W

Note:

3. Device is mounted on FR-4 PCB 36 mm × 18 mm × 1.5 mm; mounting pad for the collector lead minimum 6 cm^2.

Electrical Characteristics[4]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 100 μA, I_E = 0	500			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 1 mA, I_B = 0	400			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 100 μA, I_C = 0	6			V
I_{CBO}	Collector-Base Cut-Off Current	V_{CB} = 400 V, I_E = 0			100	nA
I_{CES}	Collector-Emitter Cut-Off Current	V_{CE} = 400 V, V_{BE} = 0			500	nA
I_{EBO}	Emitter-Base Cut-Off Current	V_{EB} = 4 V, I_C = 0			100	nA
h_{FE}	DC Current Gain	V_{CE} = 10 V, I_C = 1 mA	40			
		V_{CE} = 10 V, I_C = 10 mA	50		200	
		V_{CE} = 10 V, I_C = 50 mA	45			
		V_{CE} = 10 V, I_C = 100 mA	40			
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 1 mA, I_B = 0.1 mA			0.40	V
		I_C = 10 mA, I_B = 1 mA			0.50	
		I_C = 50 mA, I_B = 5 mA			0.75	
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 10 mA, I_B = 1 mA			0.75	V
C_{obo}	Output Capacitance	V_{CB} = 20 V, I_E = 0, f = 1.0 MHz			7	pF

Note:

4. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%

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Typical Performance Characteristics

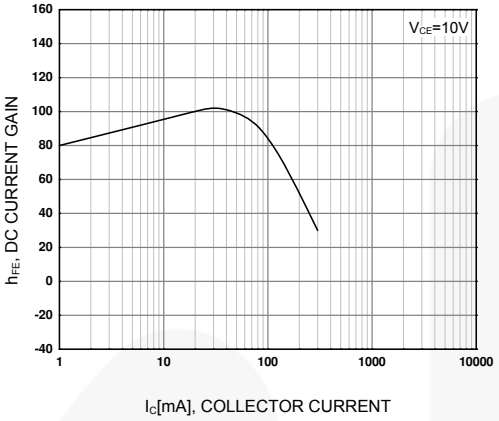


Figure 1. DC Current Gain

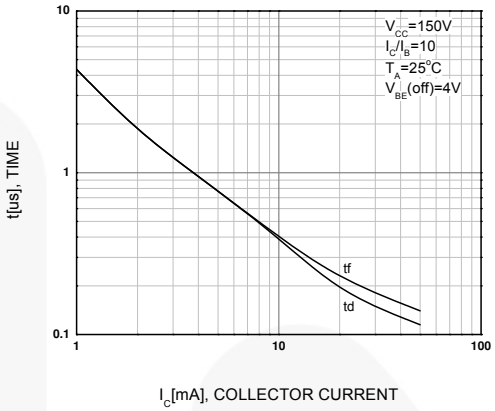


Figure 2. Turn-On Switching Times

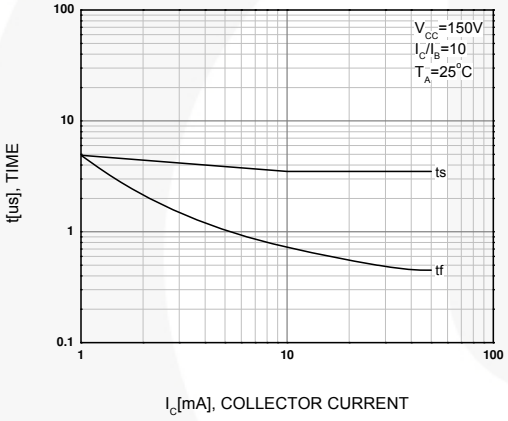


Figure 3. Turn-Off Switching Times

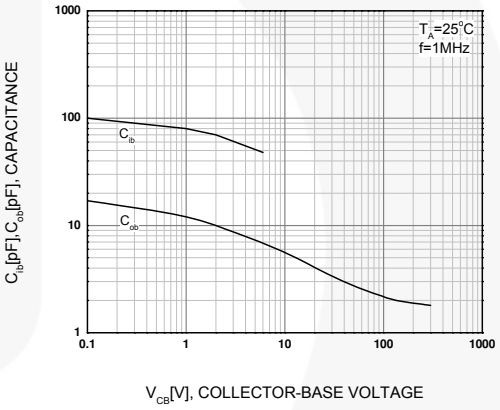


Figure 4. Capacitance

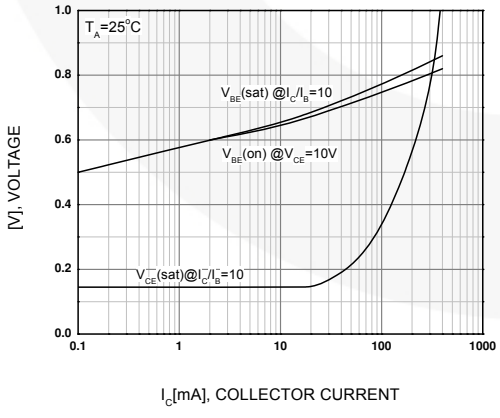


Figure 5. On Voltage

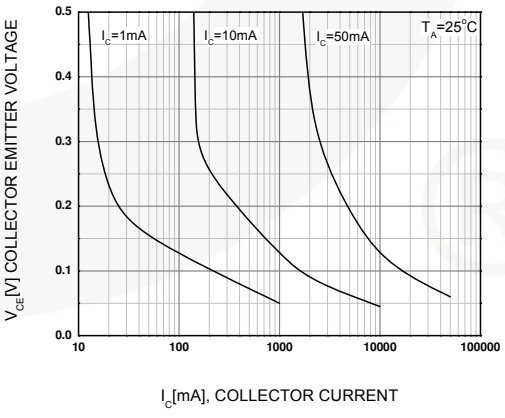


Figure 6. Collector Saturation Region

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Typical Performance Characteristics (Continued)

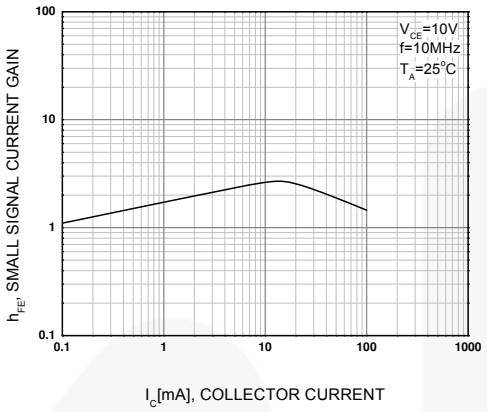
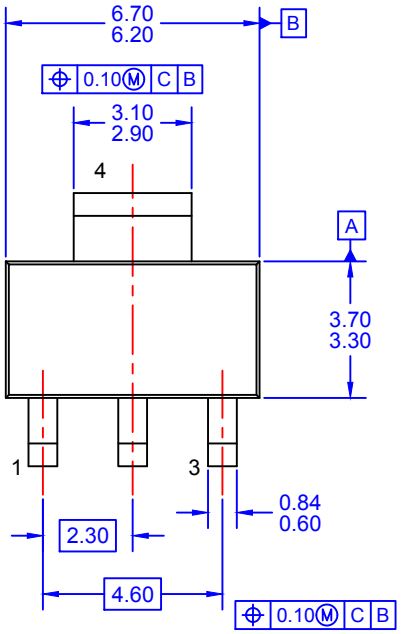
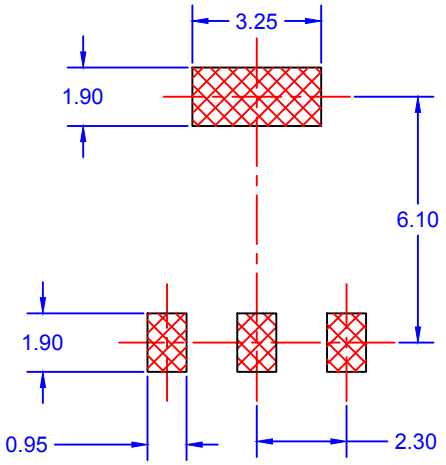


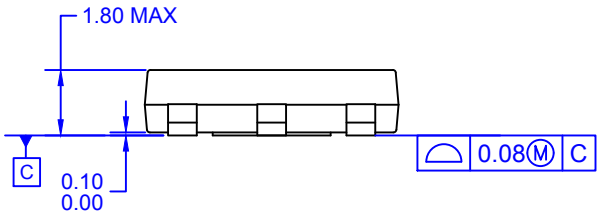
Figure 7. High Frequency Current Gain

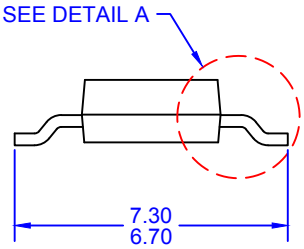
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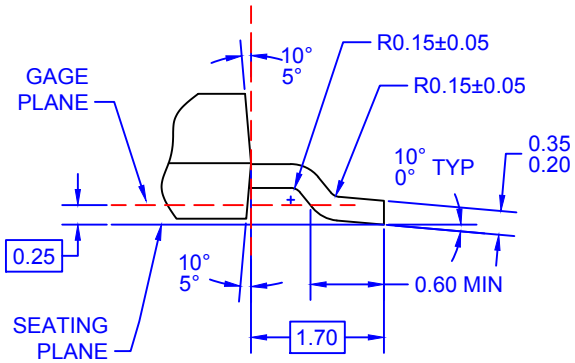


LAND PATTERN RECOMMENDATION





NOTES: UNLESS OTHERWISE SPECIFIED
A) DRAWING BASED ON JEDEC REGISTRATION TO-261C, VARIATION AA.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DIMENSIONS DO NOT INCLUDE BURRS OR MOLD FLASH. MOLD FLASH OR BURRS DOES NOT EXCEED 0.10MM.
D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
E) LANDPATTERN NAME: SOT230P700X180-4BN
F) DRAWING FILENAME: MKT-MA04AREV3



DETAIL A
SCALE: 2:1

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