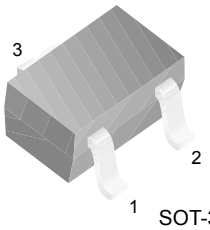
FAIRCHILD SEMICONDUCTOR®

May 2010

FJX2222A
NPN Epitaxial Silicon Transistor

Features

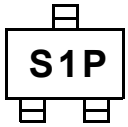
- General Purpose Transistor
- Collector-Emitter Voltage: V_{CEO} = 40V
- Collector Dissipation: P_C (max) = 325mW



SOT-323

1. Base 2. Emitter 3. Collector

Marking



Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	325	mW
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	150	°C

Electrical Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C=10μA, I_E=0	75		V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C=10mA, I_B=0	40		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=10μA, I_C=0	6		V
I_{CBO}	Collector Cut-off Current	V_{CB}=60V, I_E=0		0.01	μA
h_{FE}	* DC Current Gain	V_{CE}=10V, I_C=0.1mA V_{CE}=10V, I_C=1mA V_{CE}=10V, I_C=10mA V_{CE}=10V, I_C=150mA V_{CE}=10V, I_C=500mA	35 50 75 100 40	 300 	
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C=150mA, I_B=15mA I_C=500mA, I_B=50mA		0.3 1.0	V V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C=150mA, I_B=15mA I_C=500mA, I_B=50mA	0.6	1.2 2.0	V V
f_T	Current Gain Bandwidth Product	I_C=20mA, V_{CE}=20V, f=100MHz	300		MHz

Electrical Characteristics (Continued) T_a = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
C_{ob}	Output Capacitance	V_{CB}=10V, I_E=0, f=1MHz	4	8	pF
NF	Noise Figure	I_C=100μA, V_{CE}=10V, R_S=1KΩ, f=1kHz		4	dB
t_{ON}	Turn On Time	V_{CC}=30V, I_C=150mA, V_{BE}=0.5V, I_{B1}=15mA		35	ns
t_{OFF}	Turn Off Time	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		285	ns

* Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

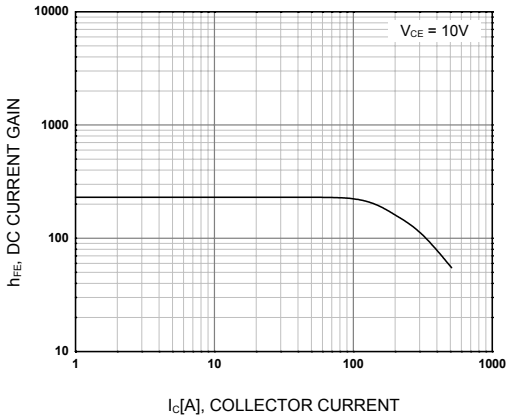


Figure 1. DC current Gain

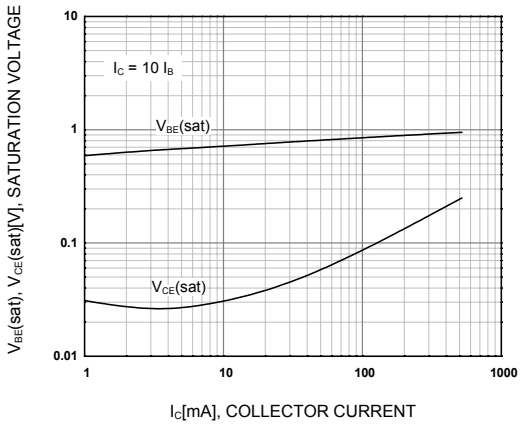


Figure 2. Collector-Base Saturation Voltage Base-Emitter Saturation Voltage

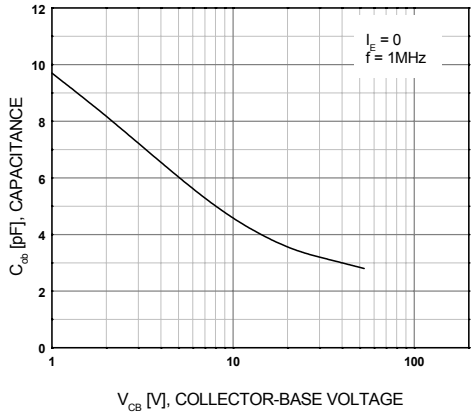


Figure 3. Output Capacitance

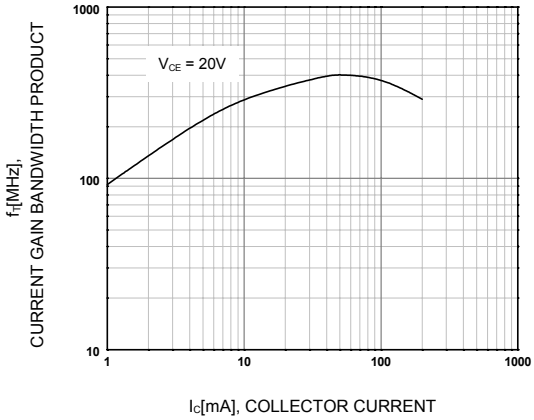
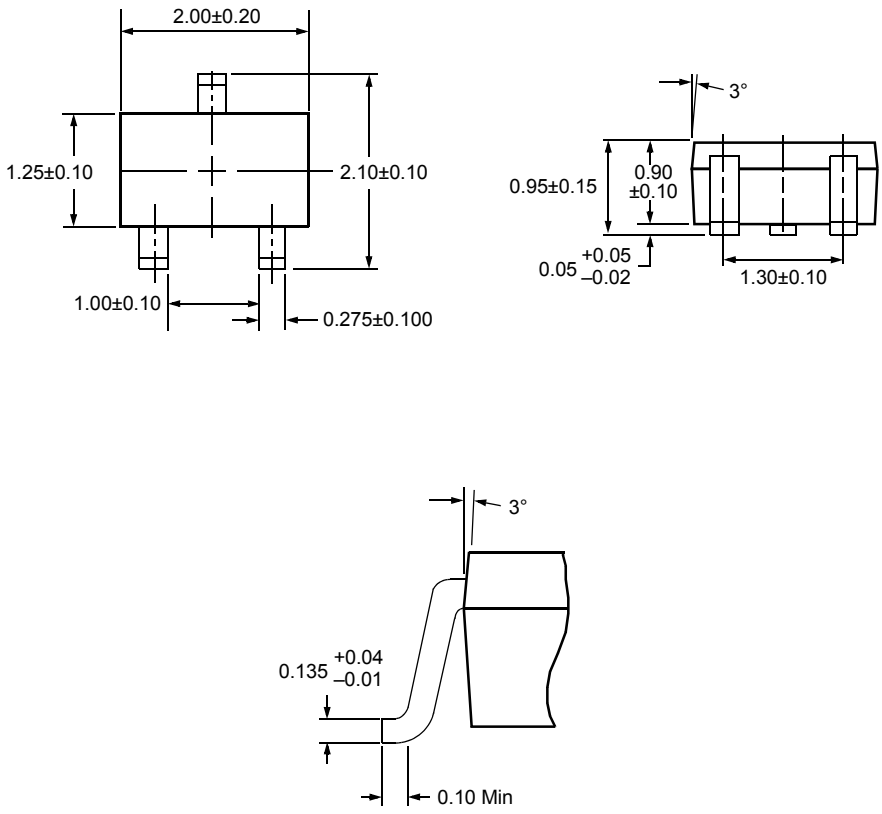


Figure 4. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-323



Dimensions in Millimeters

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Rev. I49

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