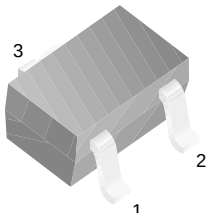
FAIRCHILD SEMICONDUCTOR®

January 2007

FJX3904
NPN Epitaxial Silicon Transistor

- General Purpose Transistor



SOT-323

1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings* T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CES}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	200	mA
P_C	Collector Power Dissipation	350	mW
T_{STG}	Storage Temperature	-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.

Electrical Characteristics* T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	I_C=10μA, I_E=0	60		V
BV_{CEO}	* Collector-Emitter Breakdown Voltage	I_C=1mA, I_B=0	40		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E=10μA, I_C=0	6		V
I_{CEX}	Collector Cut-off Current	V_{CE}=30V, V_{EB}=3V		50	nA
h_{FE}	* DC Current Gain	V_{CE}=1V, I_C=0.1mA V_{CE}=1V, I_C=1mA V_{CE}=1V, I_C=10mA V_{CE}=1V, I_C=50mA V_{CE}=1V, I_C=100mA	40 70 100 60 30	 300 	
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C=10mA, I_B=1mA I_C=50mA, I_B=5mA		0.2 0.3	V V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	I_C=10mA, I_B=1mA I_C=50mA, I_B=5mA	0.65	0.85 0.95	V V
C_{ob}	Output Capacitance	V_{CB}=5V, I_E=0, f=1MHz		4	pF
f_T	Current Gain Bandwidth Product	V_{CE}=20V, I_C=10mA	300		MHz
NF	Noise Figure	I_C=100μA, V_{CE}=5V, R_S=1KΩ f=10Hz to 15.7KHz		5	dB
t_{ON}	Turn On Time	V_{CC}=3V, V_{BE}=0.5V I_C=10mA, I_{B1}=1mA		70	ns
t_{OFF}	Turn Off Time	V_{CC}=3V, I_C=10mA I_{B1}=I_{B2}=1mA		250	ns

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

Package Marking and Ordering Information

Device Item (note)	Device Marking	Package	Packing Method	Qty(pcs)
FJX3904TF	S1A	SOT-323	TAPE & REEL	3,000

Note : The Suffix "-TF" means Tape& Reel packing method, which can be on fairchildsemi website at http://www.fairchildsemi.com/packaging

Typical Performance Characteristics

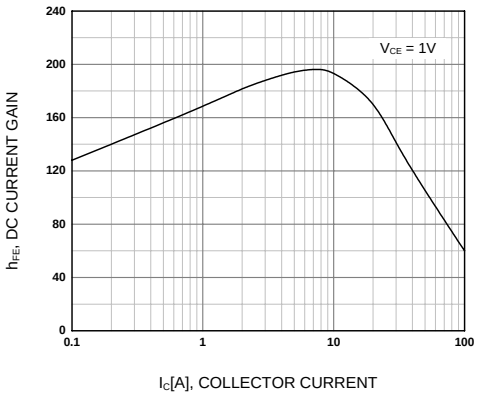


Figure 1. DC current Gain

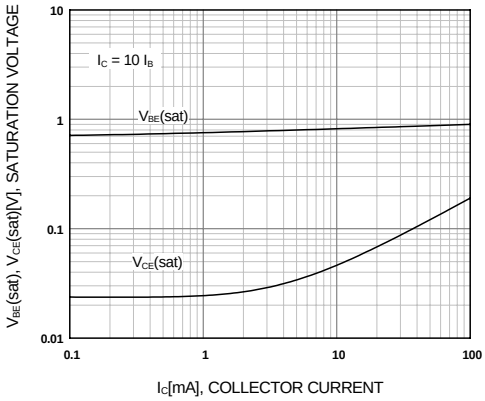


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

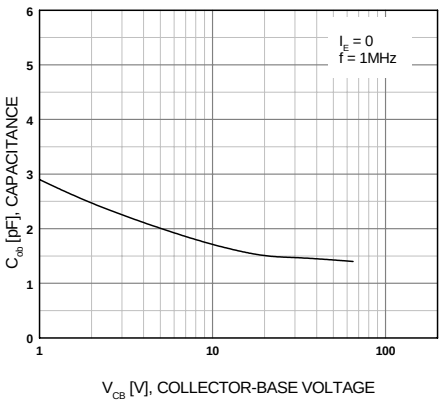


Figure 3. Output Capacitance

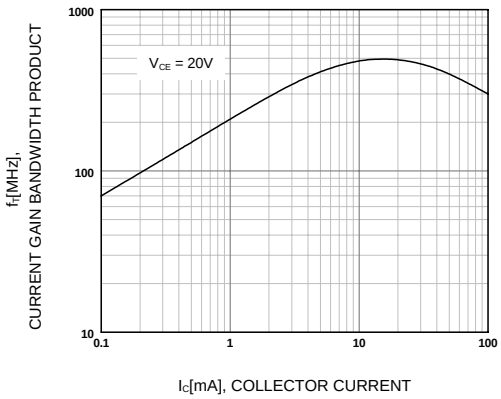
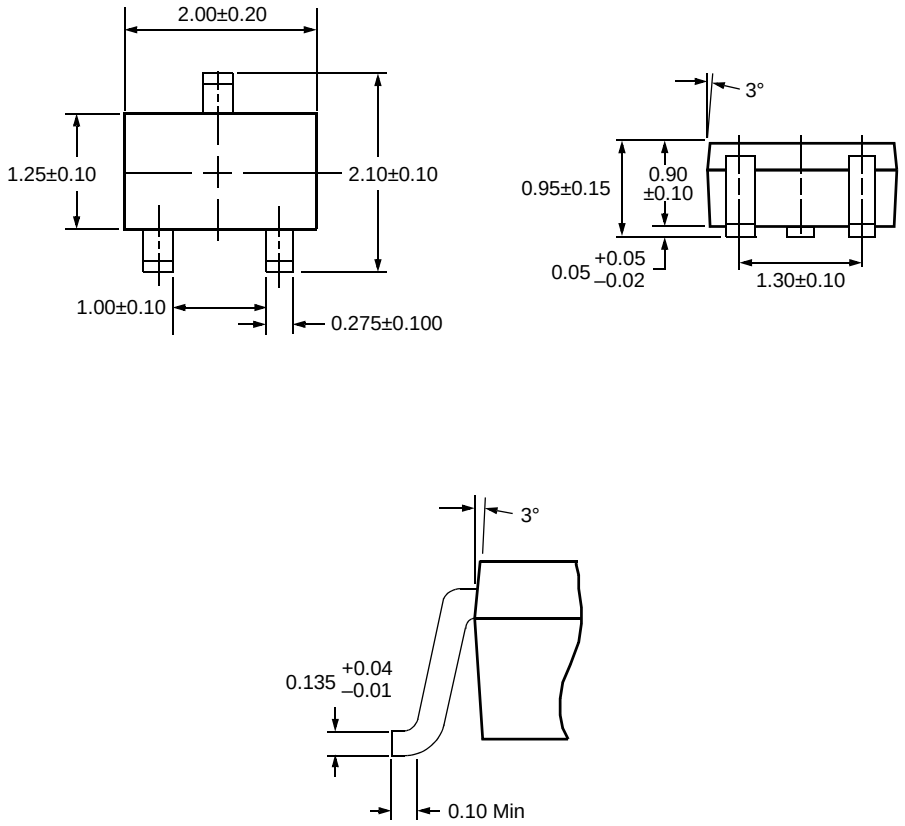


Figure 4. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-323



Dimensions in Millimeters

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