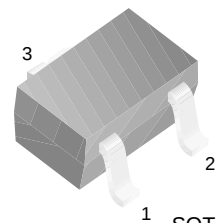


FJX3904

NPN Epitaxial Silicon Transistor

- General Purpose Transistor



1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings* $T_a = 25^\circ\text{C}$ 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	$^\circ\text{C}$

* 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°C .

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Electrical Characteristics* $T_a = 25^\circ\text{C}$ unless otherwise noted

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

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

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

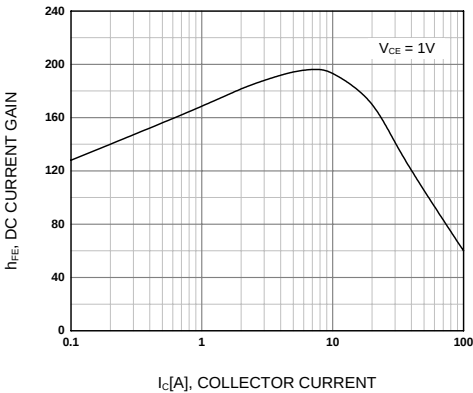


Figure 1. DC current Gain

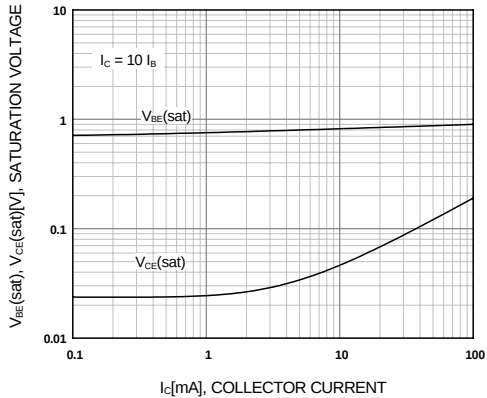


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

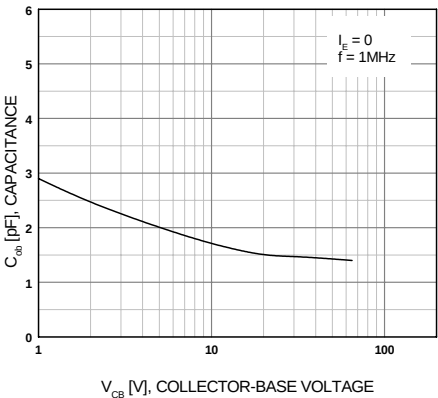


Figure 3. Output Capacitance

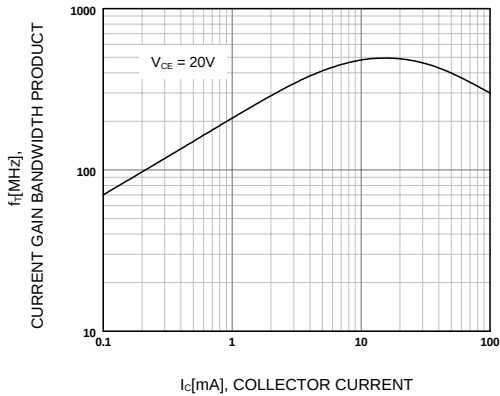
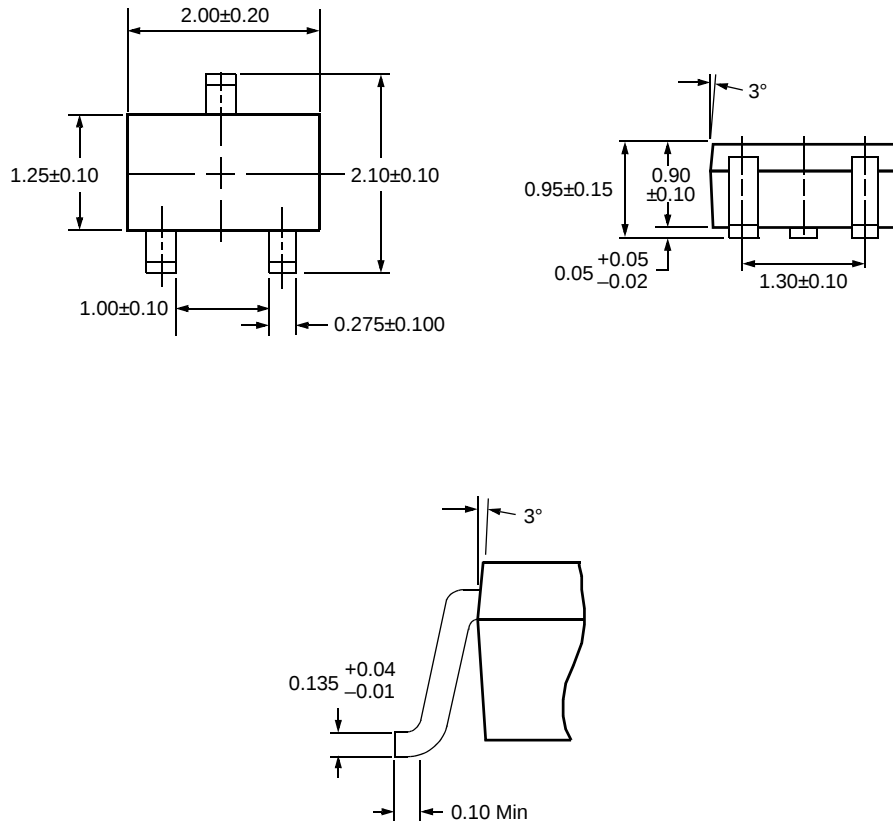


Figure 4. Current Gain Bandwidth Product

Mechanical Dimensions

SOT-323



Dimensions in Millimeters

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Definition of Terms

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