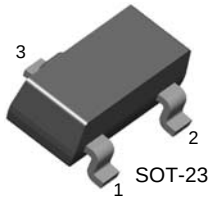
FAIRCHILD SEMICONDUCTOR®

November 2011

KST3904
NPN Epitaxial Silicon Transistor

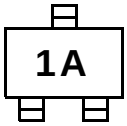
Features
- General Purpose Transistor



SOT-23

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	60	V
V_{CEO}	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 Range	-55 to 150	°C

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	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, f=100MHz	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%

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Typical Performance Characteristics

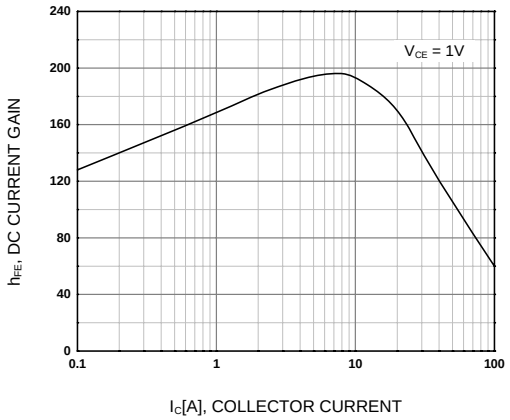


Figure 1. DC current Gain

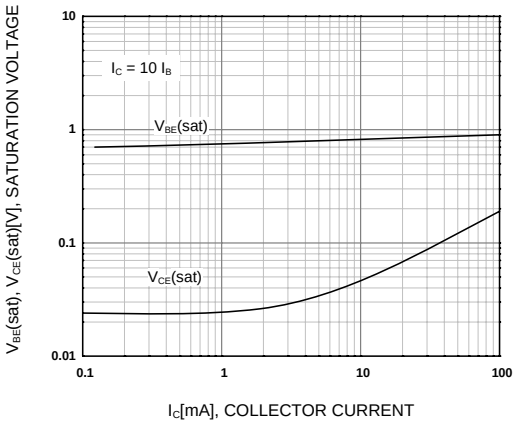


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

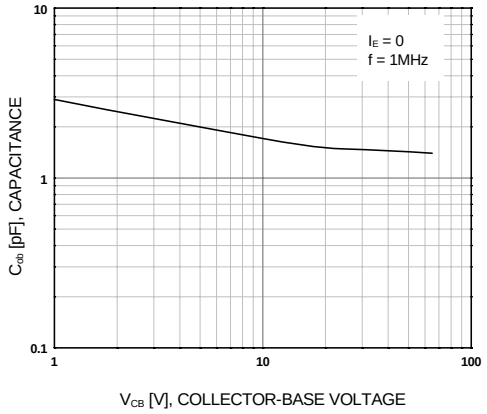


Figure 3. Output Capacitance

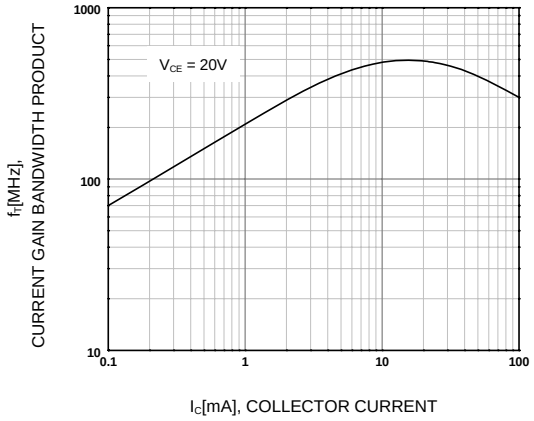
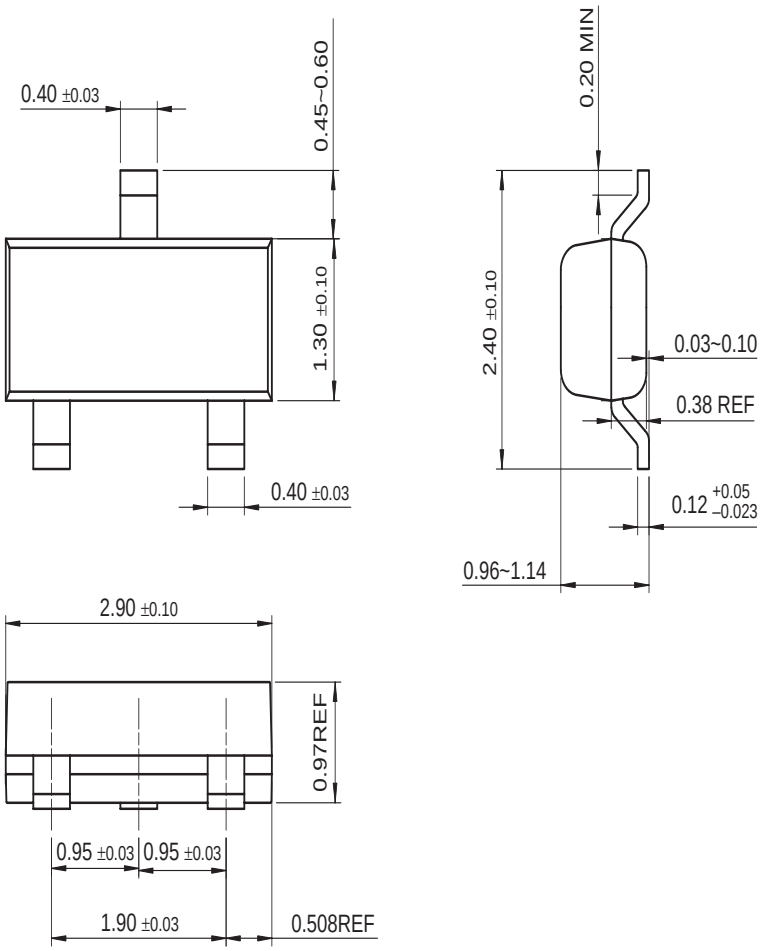


Figure 4. Current Gain Bandwidth Product

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Physical Dimensions

SOT-23



Dimensions in Millimeters

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