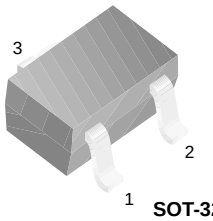
FAIRCHILD SEMICONDUCTOR®

August 2010

FJX992
PNP Audio Frequency Low Noise Amplifier

Features

- High Voltage : V_{CEO} = -120V
- Excellent h_{FE} Linearity
- High h_{FE} : h_{FE} = 200~700



SOT-323

1. Base 2. Emitter 3. Collector

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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	-120	V
V_{CBO}	Collector-Base Voltage	-120	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-100	mA
T_J , T_{STG}	Junction and Storage Temperature Range	-55 to +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 degrees C.

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

Thermal Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above T_a = 25°C	235 1.88	mW mW/°C
$R_{\theta ja}$	Thermal Resistance, Junction to Ambient	530	°C/W

Electrical Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	I_C=-1mA, I_B=0	-120			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C=-100μA, I_E=0	-120			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E=-10μA, I_C=0	-5			V
I_{CBO}	Collector-Base Cutoff Current	V_{CB}=-120V, I_E=0			-100	nA
I_{EBO}	Emitter-Base Cutoff Current	V_{EB}=-5V, I_C=0			-100	nA
ON CHARACTERISTICS						
h_{FE}	DC Current Gain*	V_{CE}=-6V, I_C=-0.1mA V_{CE}=-6V, I_C=-2mA	150 200		 700	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C=-10mA, I_B=-1mA			-0.3	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE}=-6V, I_C=-1mA			-0.65	V
SMALL SIGNAL CHARACTERISTICS						
f_T	Current Gain - Bandwidth Product	V_{CE}=-6V, I_C=-1mA		100		MHz
C_{obo}	Output Capacitance	V_{CB}=-10V, I_E=0, f=1MHz		4		pF

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

Figure 1. DC Current Gain

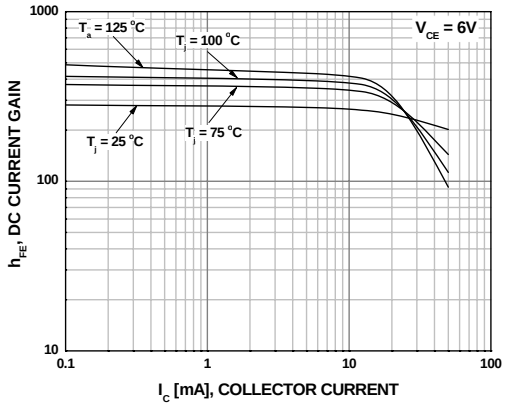


Figure 2. Collector-Emitter Saturation Voltage

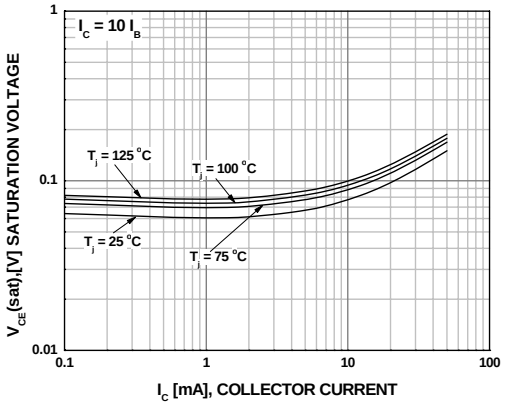


Figure 3. Base-Emitter Saturation Voltage

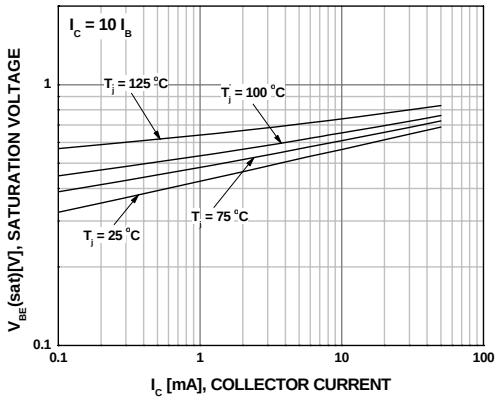


Figure 4. Base-Emitter On Voltage

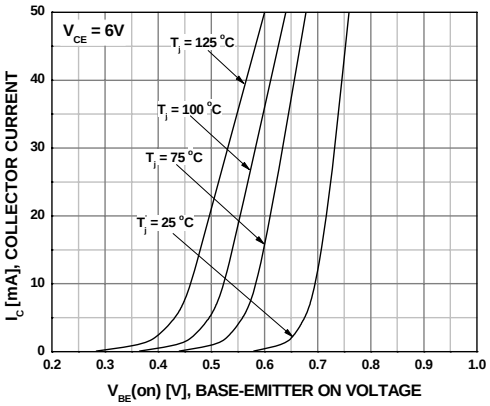


Figure 5. Collector-Emitter Cutoff Current

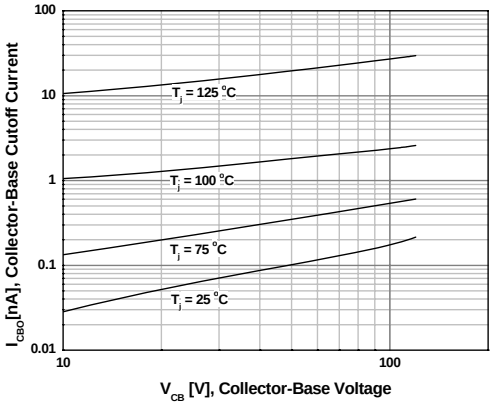
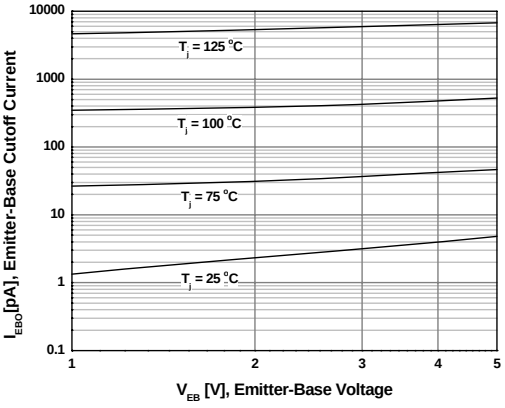


Figure 6. Base-Emitter Cutoff Current



Typical Performance Characteristics (Continued)

Figure 7. Collector Output Capacitance

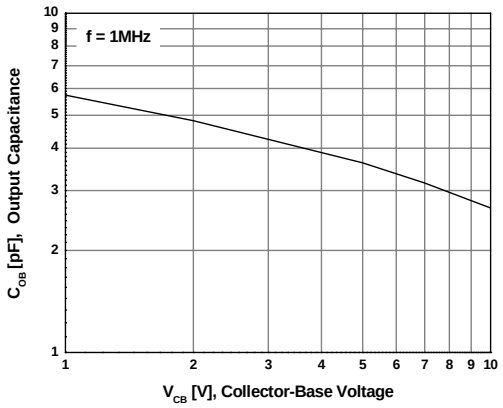


Figure 8. Collector Input Capacitance

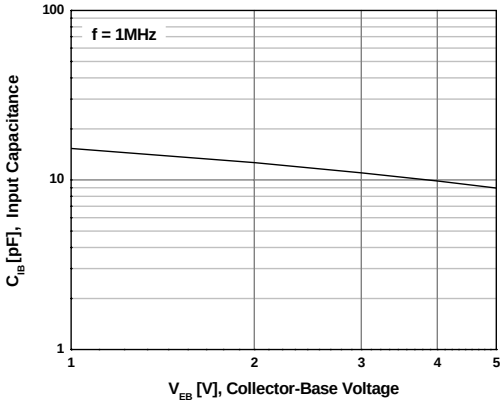


Figure 9. Forward Bias Safe Operating Area

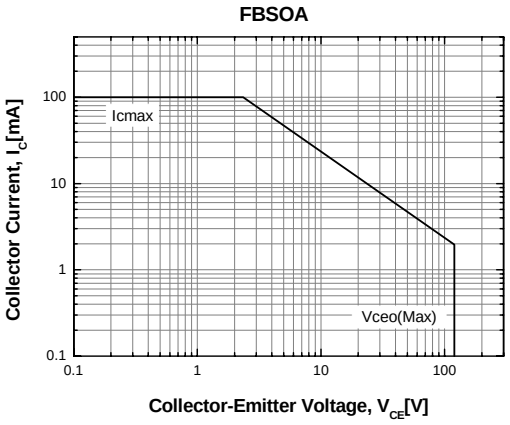
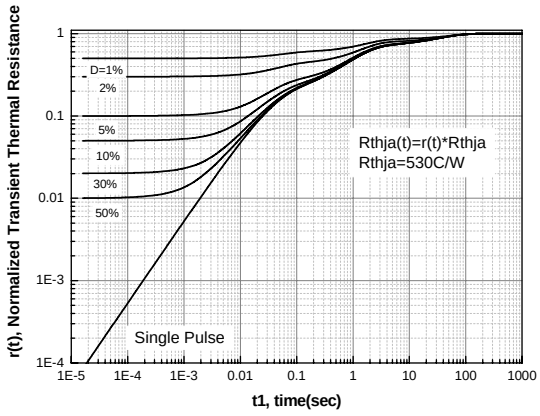
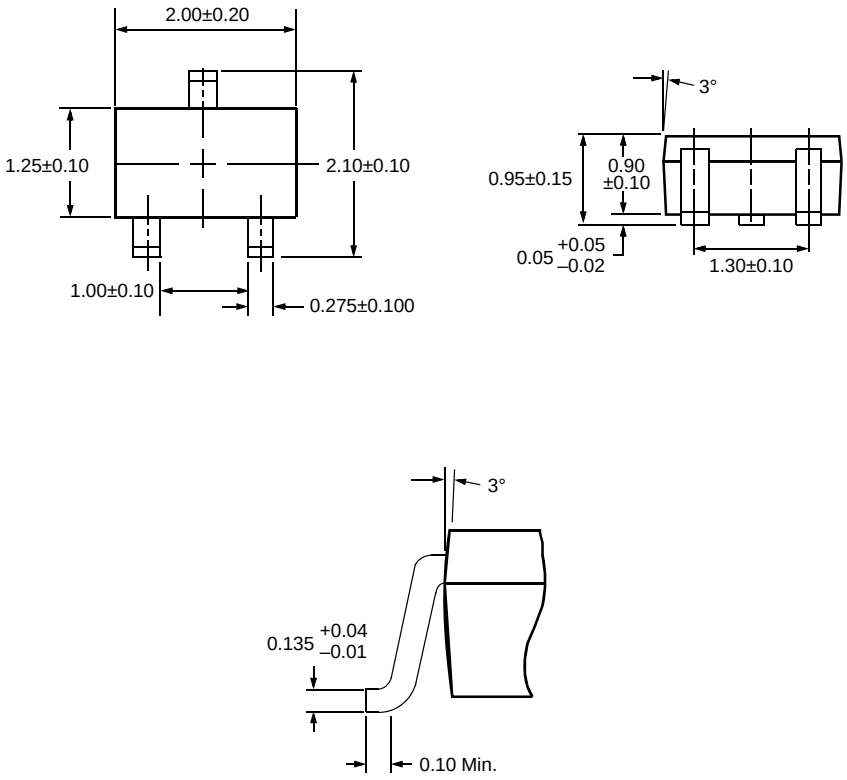


Figure 10. Transient Thermal Resistance



Physical Dimensions

SOT-323



Dimensions in Millimeters

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