

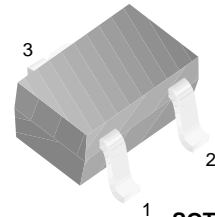
FJX992

PNP Audio Frequency Low Noise Amplifier



Features

- High Voltage : $V_{CEO} = -120V$
- Excellent h_{FE} Linearity
- High h_{FE} : $h_{FE} = 200\sim700$



1. Base 2. Emitter 3. Collector

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

* 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 $T_a = 25^\circ C$ unless otherwise noted

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

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

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

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

Figure 1. DC Current Gain

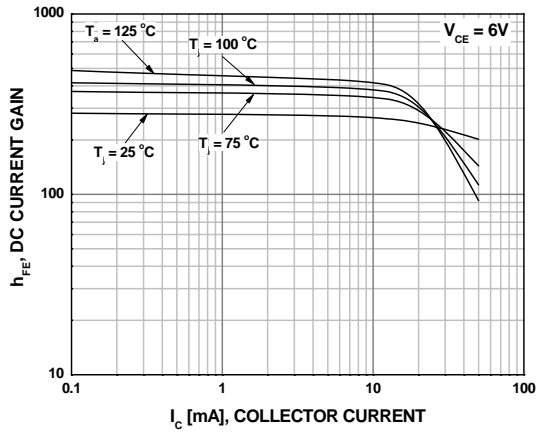


Figure 2. Collector-Emitter Saturation Voltage

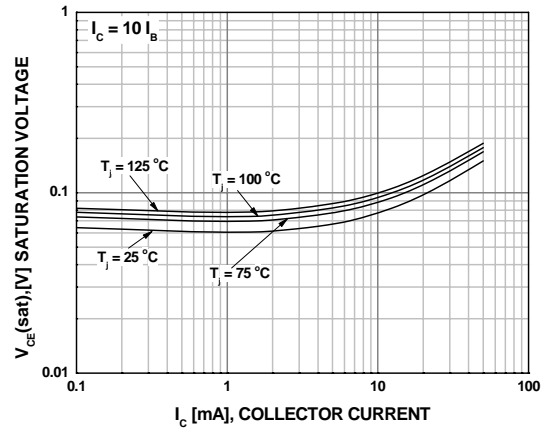


Figure 3. Base-Emitter Saturation Voltage

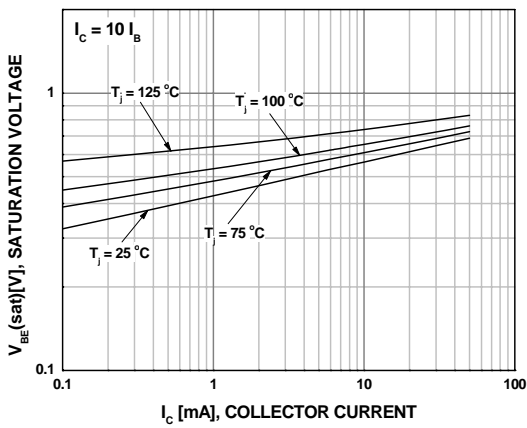


Figure 4. Base-Emitter On Voltage

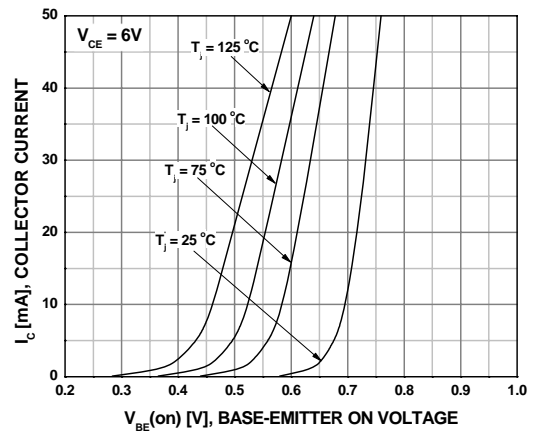


Figure 5. Collector-Emitter Cutoff Current

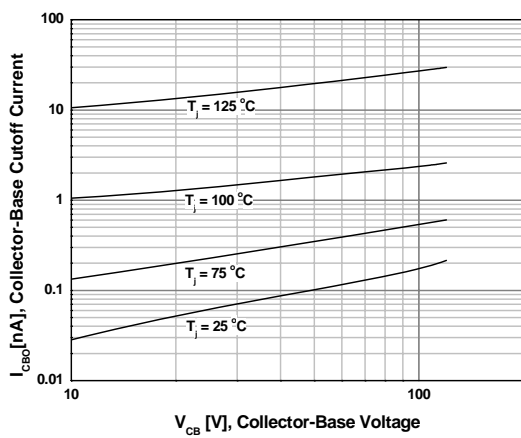
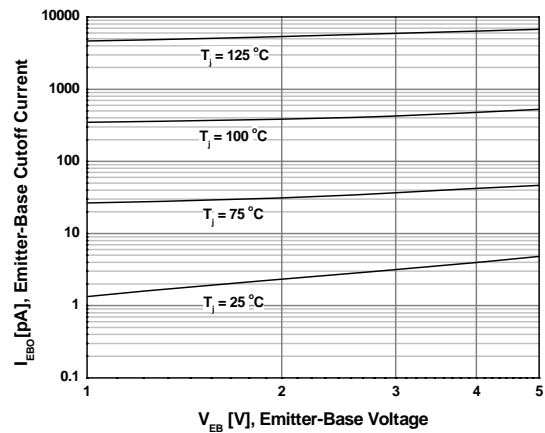


Figure 6. Base-Emitter Cutoff Current



Typical Performance Characteristics (Continued)

Figure 7. Collector Output Capacitance

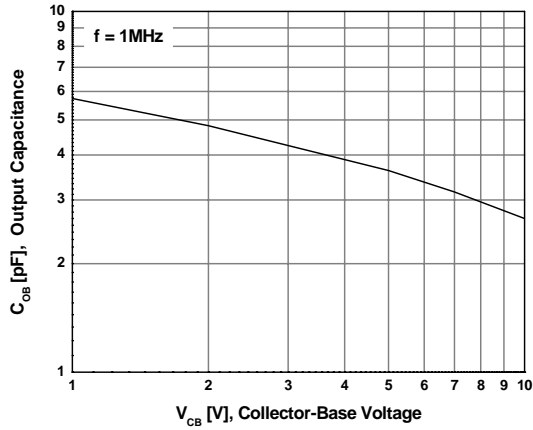


Figure 8. Collector Input Capacitance

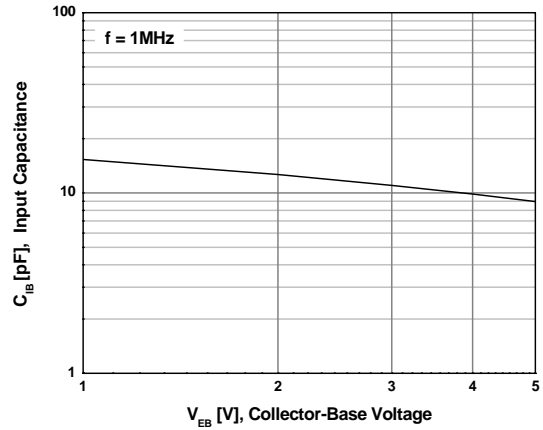


Figure 9. Forward Bias Safe Operating Area

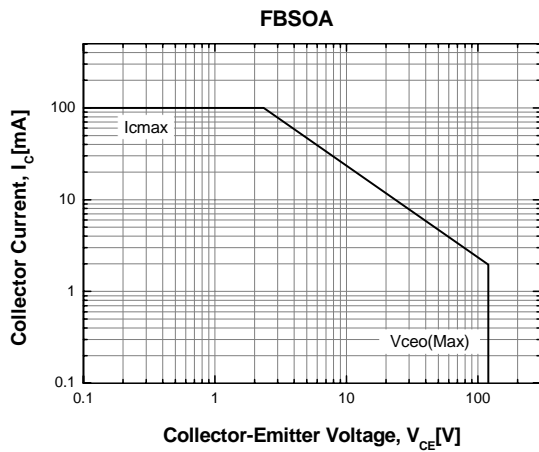
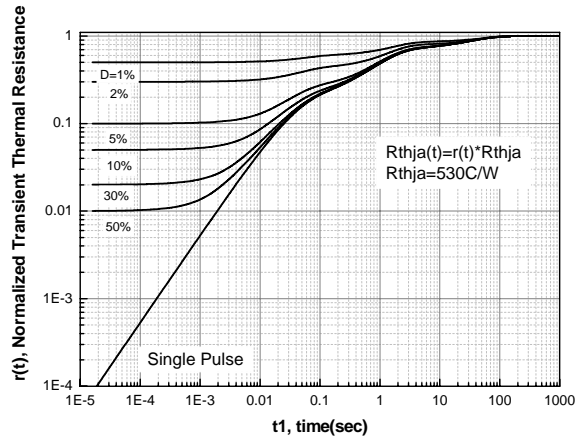
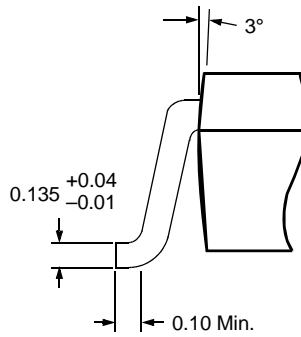
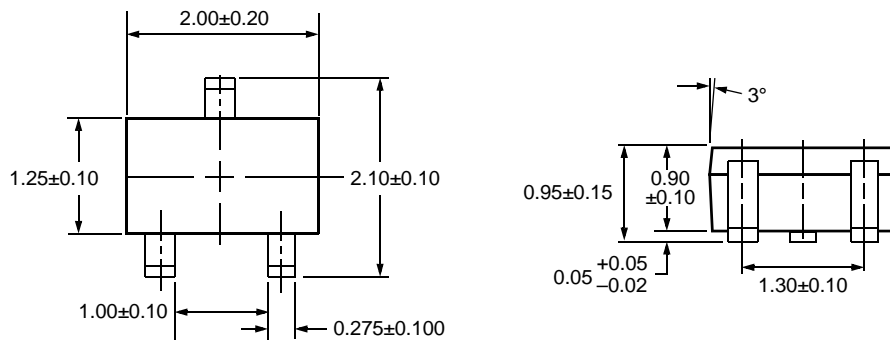


Figure 10. Transient Thermal Resistance



Physical Dimensions

SOT-323



Dimensions in Millimeters



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