

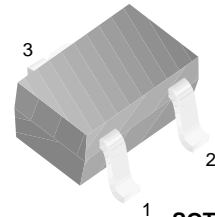
# FJX992

## PNP Audio Frequency Low Noise Amplifier



### Features

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



**SOT-323**  
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
<b>OFF CHARACTERISTICS</b>						
$V_{(BR)CEO}$	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
<b>ON CHARACTERISTICS</b>						
$h_{FE}$	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
<b>SMALL SIGNAL CHARACTERISTICS</b>						
$f_T$	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

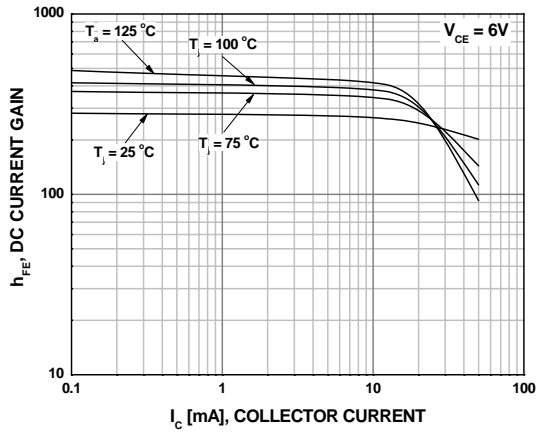


Figure 2. Collector-Emitter Saturation Voltage

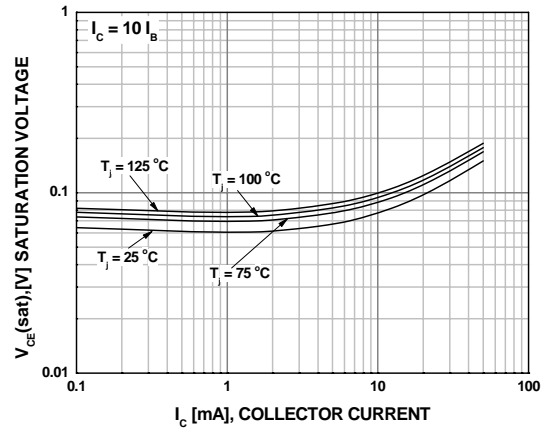


Figure 3. Base-Emitter Saturation Voltage

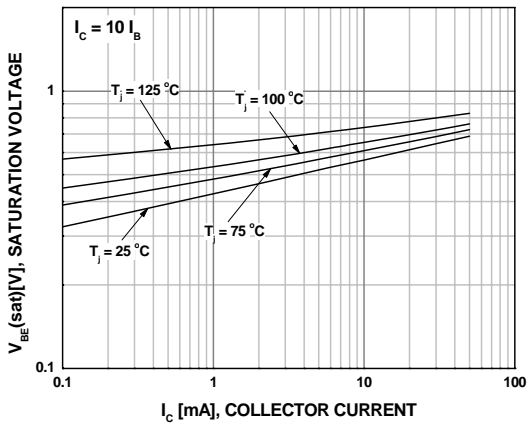


Figure 4. Base-Emitter On Voltage

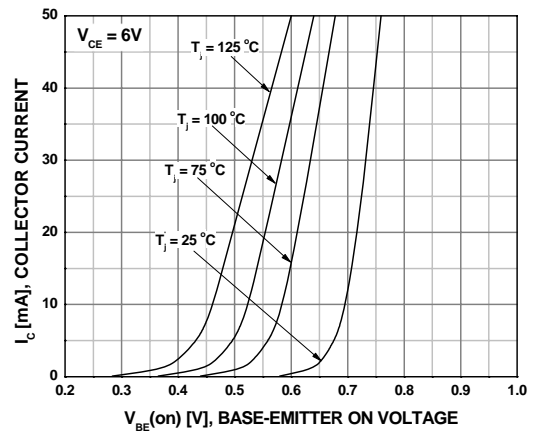


Figure 5. Collector-Emitter Cutoff Current

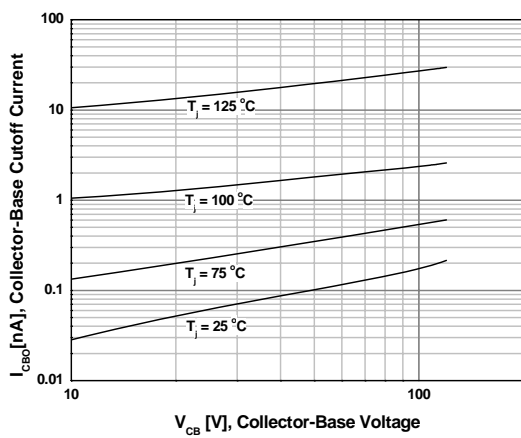
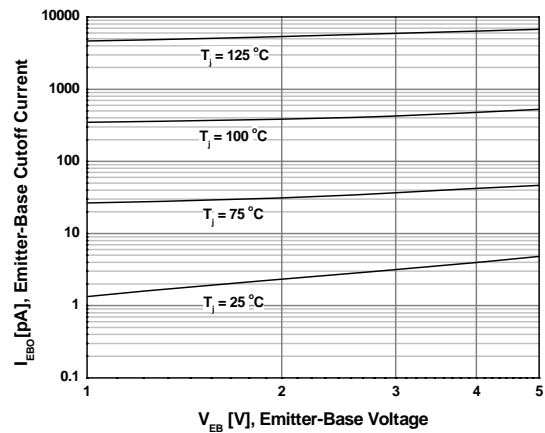
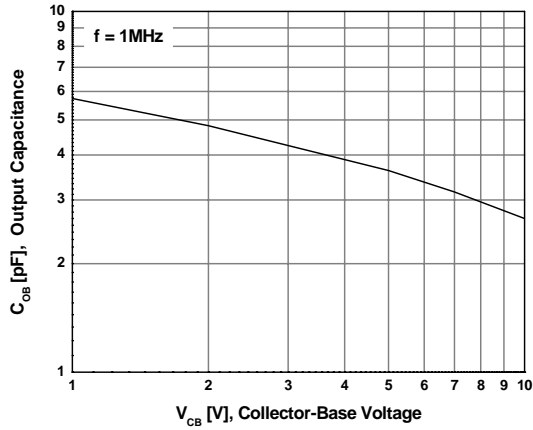


Figure 6. Base-Emitter Cutoff Current

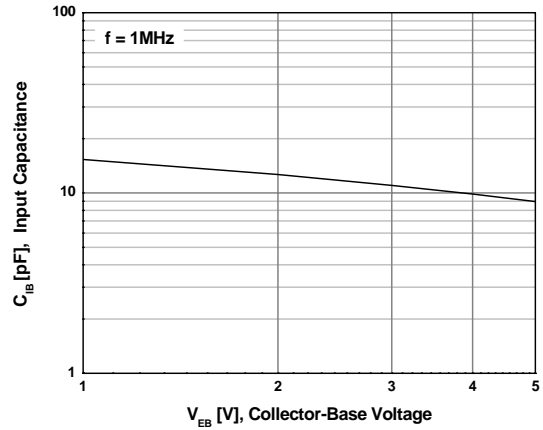


**Typical Performance Characteristics (Continued)**

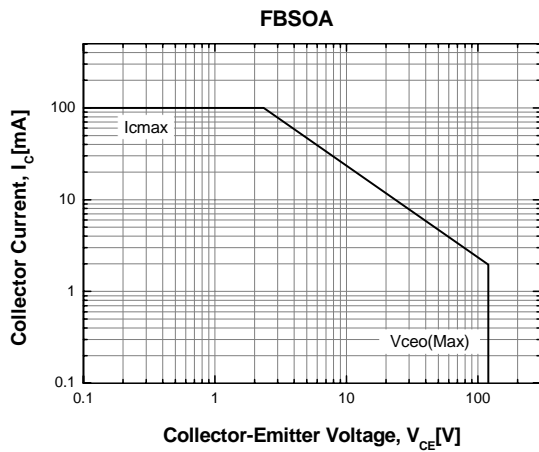
**Figure 7. Collector Output Capacitance**



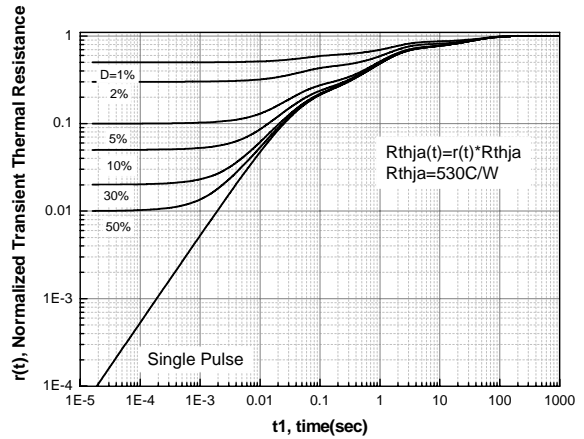
**Figure 8. Collector Input Capacitance**



**Figure 9. Forward Bias Safe Operating Area**

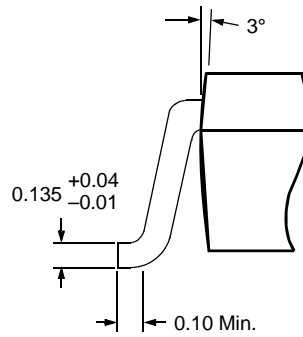
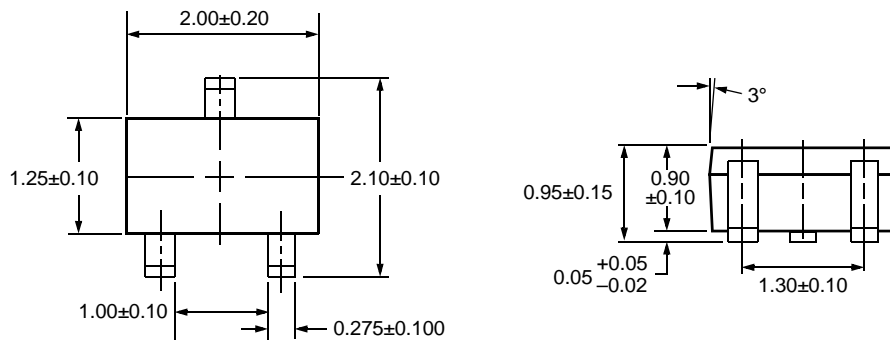


**Figure 10. Transient Thermal Resistance**



**Physical Dimensions**

**SOT-323**



Dimensions in Millimeters



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