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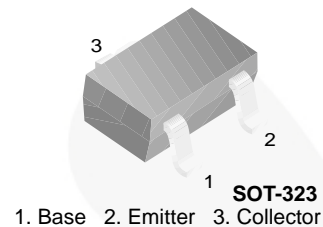
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FJX992

PNP Audio-Frequency Low-Noise Amplifier

Features

- High Voltage: $V_{CEO} = -120\text{ V}$
- Excellent h_{FE} Linearity
- High h_{FE} : $h_{FE} = 200 \sim 700$



Ordering Information

| Part Number | Marking | Package | Packing Method |
|-------------|---------|----------------------|----------------|
| FJX992TF | 992D | SOT-323 3L (SC70 3L) | Tape and Reel |

Absolute Maximum Ratings^{(1),(2)}

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | Unit |
|----------------|--|-------------|------------------|
| 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 | $^\circ\text{C}$ |

Notes:

1. These ratings are based on a maximum junction temperature of 150°C .
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty cycle operations.

Thermal Characteristics⁽³⁾

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Max. | Unit |
|-----------------|---|------|---------------------------|
| P_D | Total Device Dissipation | 235 | mW |
| | Derate Above $T_A = 25^\circ\text{C}$ | 1.88 | mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 530 | $^\circ\text{C}/\text{W}$ |

Note:

3. PCB size: FR-4 76 x 114 x 1.57 mm³ (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|-------------------------------------|--|---|------|------|-------|------|
| Off Characteristics | | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage ⁽⁴⁾ | $I_C = -1\text{ mA}, I_B = 0$ | -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 Cut-Off Current | $V_{CB} = -120\text{ V}, I_E = 0$ | | | -100 | nA |
| I_{EBO} | Emitter-Base Cut-Off Current | $V_{EB} = -5\text{ V}, I_C = 0$ | | | -100 | nA |
| On Characteristics | | | | | | |
| h_{FE} | DC Current Gain ⁽⁴⁾ | $V_{CE} = -6\text{ V}, I_C = -0.1\text{ mA}$ | 150 | | | |
| | | $V_{CE} = -6\text{ V}, I_C = -2\text{ mA}$ | 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_{ob} | Output Capacitance | $V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$ | | 4 | | pF |

Note:

4. Pulse test: pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

Typical Performance Characteristics

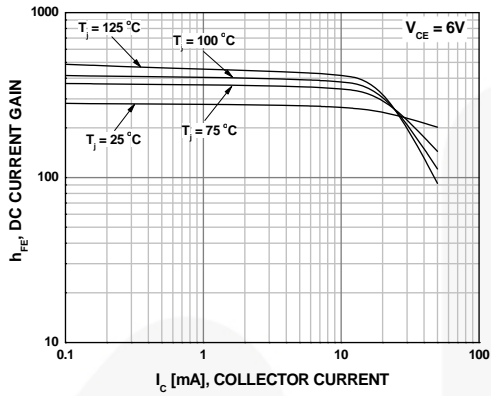


Figure 1. DC Current Gain

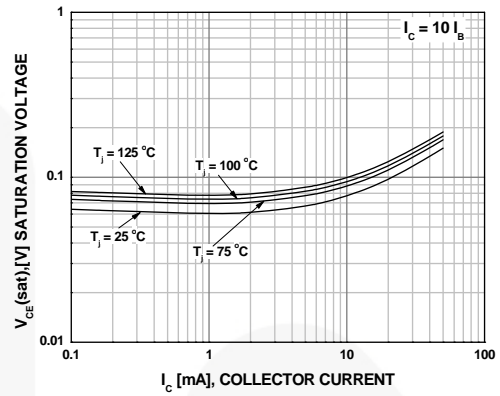


Figure 2. Collector-Emitter Saturation Voltage

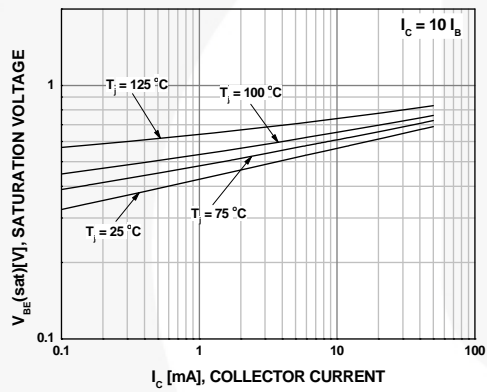


Figure 3. Base-Emitter Saturation Voltage

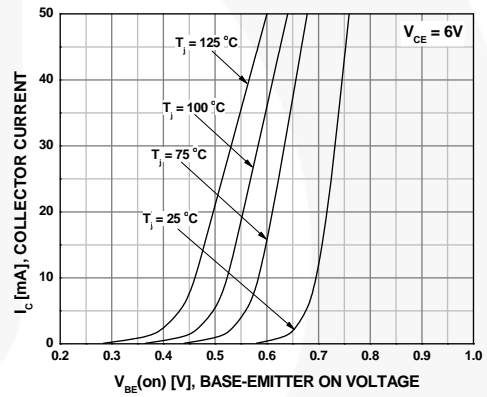


Figure 4. Base-Emitter On Voltage

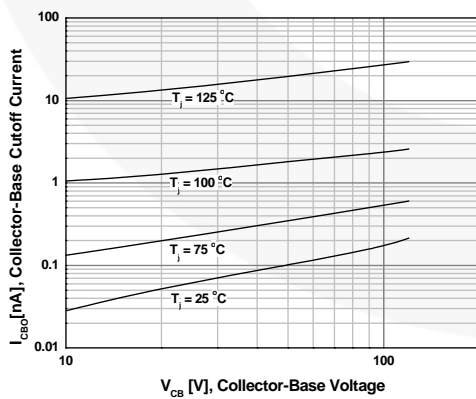


Figure 5. Collector-Base Cut-Off Current

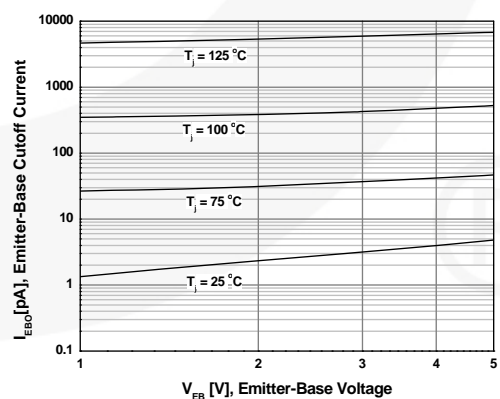


Figure 6. Emitter-Base Cut-Off Current

Typical Performance Characteristics (Continued)

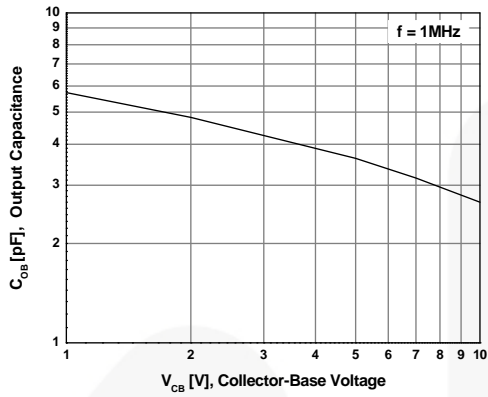


Figure 7. Collector Output Capacitance

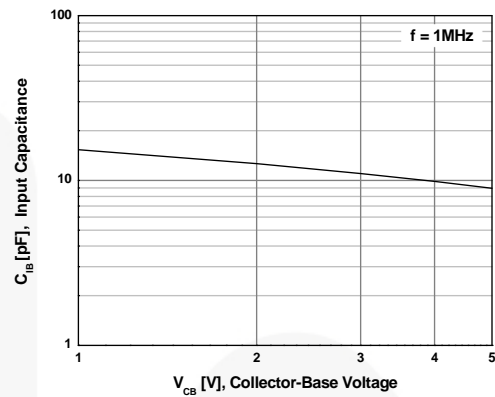


Figure 8. Collector Input Capacitance

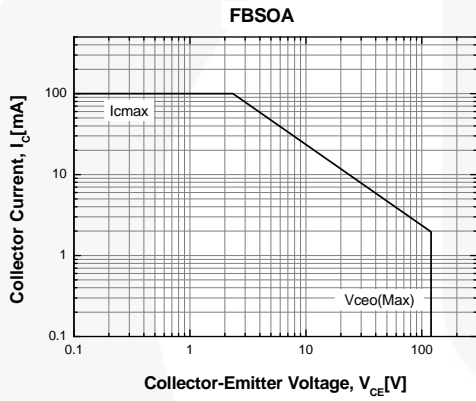


Figure 9. Forward Bias Safe Operating Area

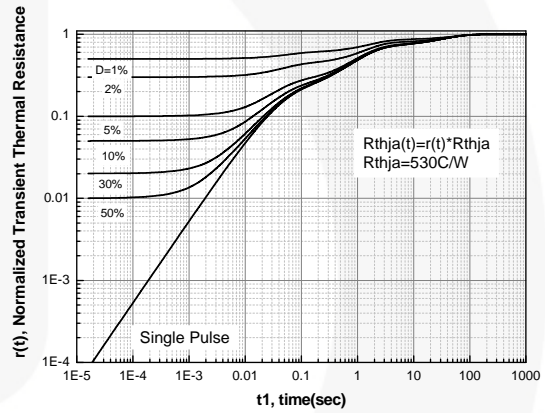
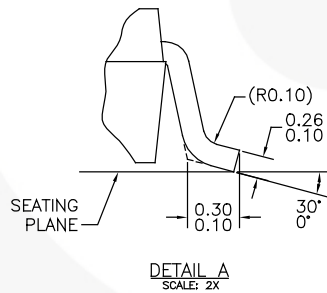
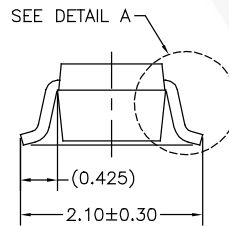
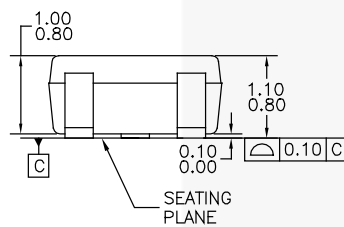
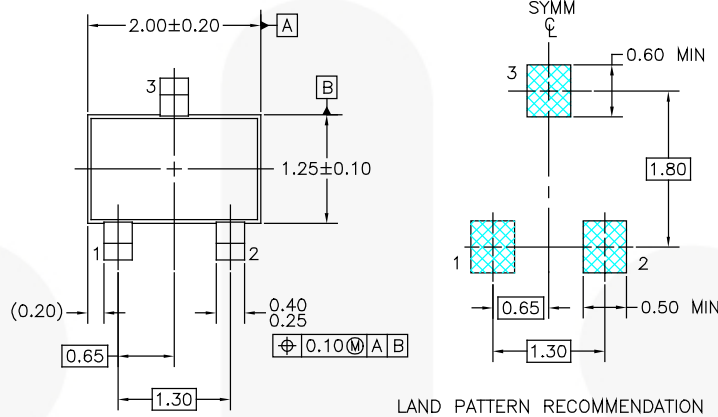


Figure 10. Transient Thermal Resistance

Physical Dimensions

SOT-323



NOTES: UNLESS OTHERWISE SPECIFIED

- A) THIS PACKAGE CONFORMS TO EIAJ SC-70.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS DO NOT INCLUDE BURRS OR MOLD FLASH.

MAA03AREVA

Figure 11. 3-LEAD, SC70, EIAJ SC-70, 1.25 MM WIDE

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

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