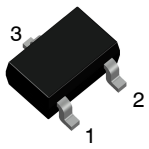
PNP Audio-Frequency Low-Noise Amplifier

FJX992



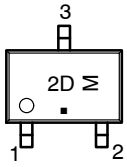
1. Base 2. Emitter 3. Collector

SC-70, 3 Lead, 1.25x2
CASE 419AB

Features

- High Voltage: V_{CEO} = −120 V
- Excellent h_{FE} Linearity
- High h_{FE}: h_{FE} = 200 ~ 700
- This Device is Pb-Free and Halide Free

MARKING DIAGRAM



2D = Specific Device Code
M = Date Code
▪ = Pb-Free Package

ABSOLUTE MAXIMUM RATINGS (Note 1, Note 2)

(T_A = 25 °C unless otherwise noted)

Symbol	Rating	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	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

THERMAL CHARACTERISTICS (Note 3)

(T_A = 25 °C unless otherwise noted)

Symbol	Parameter	Value	Unit
P_D	Total Device Dissipation	235	mW
	Derating above T_A = 25 °C	1.88	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient*	530	°C/W

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

ORDERING INFORMATION

Device	Package	Shipping†
FJX992TF	SC-70, 3 Lead	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

4. Pulse Test: Pulse Width < 300 μs, Duty Cycle ≤ 2.0%.

TYPICAL PERFORMANCE CHARACTERISTICS

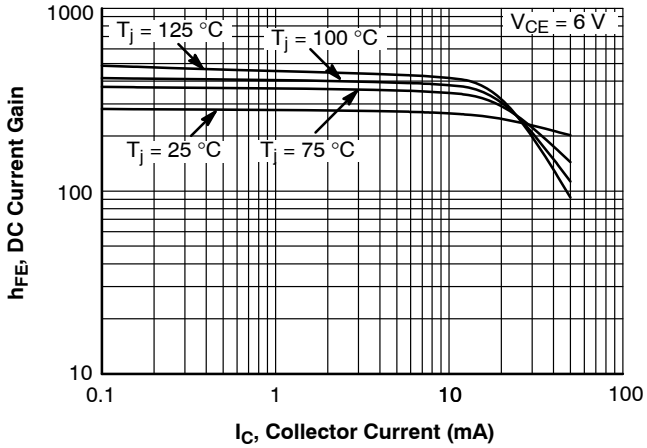


Figure 1. DC Current Gain

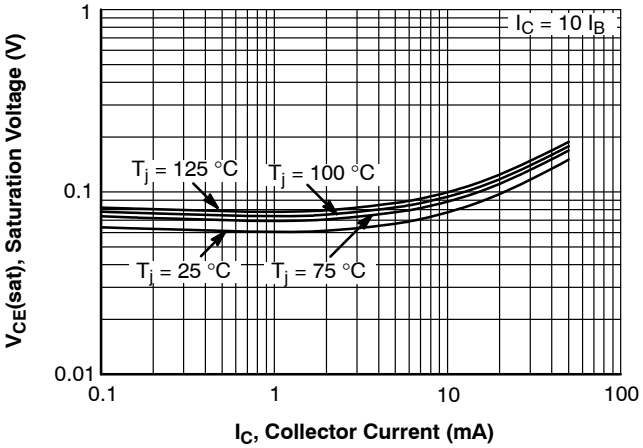


Figure 2. Collector-Emitter Saturation Voltage

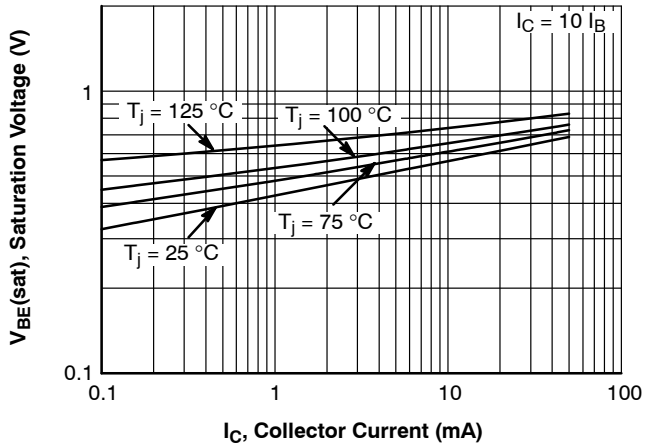


Figure 3. Base-Emitter Saturation Voltage

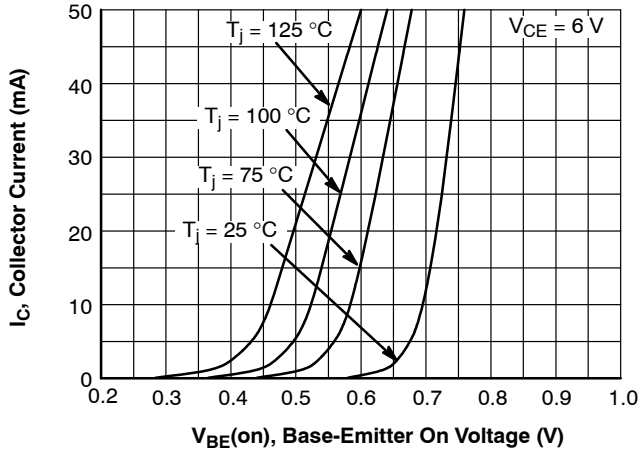


Figure 4. Base-Emitter On Voltage

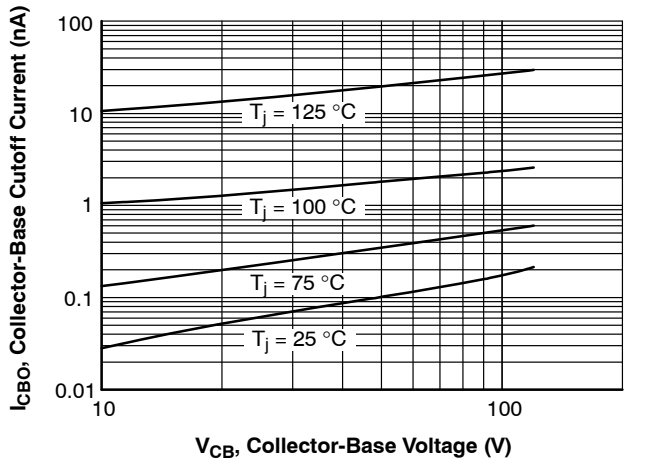


Figure 5. Collector-Base Cut-Off Current

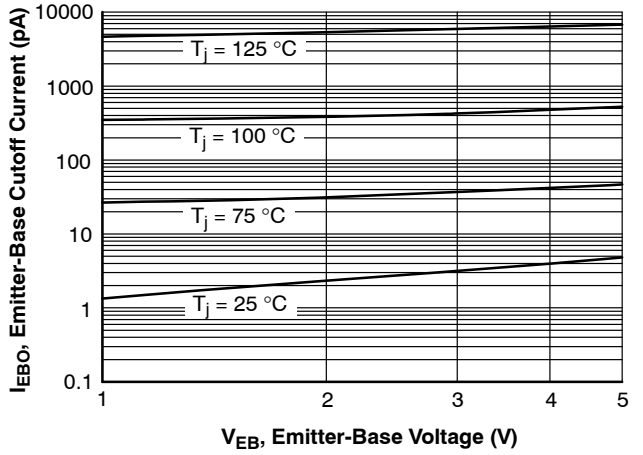


Figure 6. Emitter-Base Cut-Off Current

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

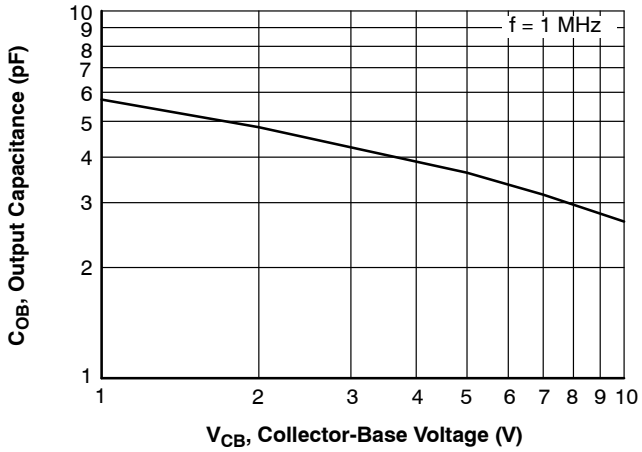


Figure 7. Collector Output Capacitance

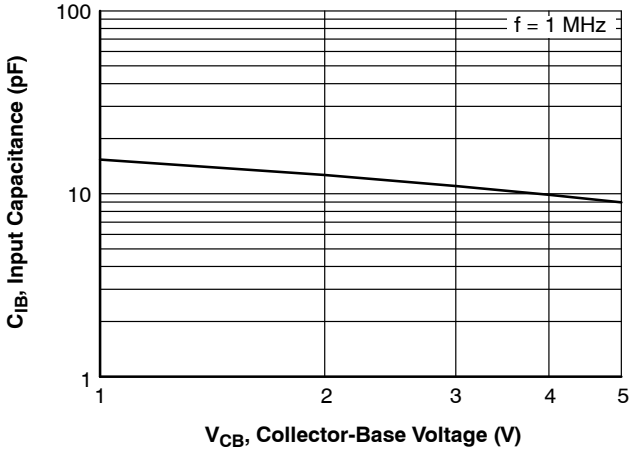


Figure 8. Collector Input Capacitance

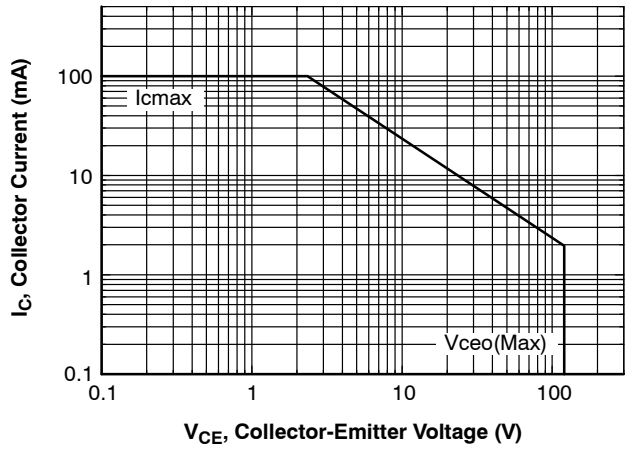


Figure 9. Forward Bias Safe Operating Area

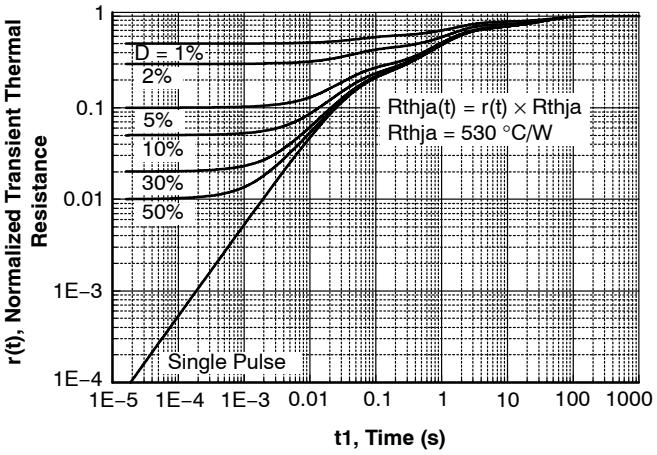
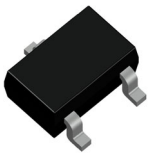


Figure 10. Transient Thermal Resistance

REVISION HISTORY

Revision	Description of Changes	Date
2	Converted the Data Sheet to **onsemi** format.	6/4/2025



SC−70, 3 Lead, 1.25x2
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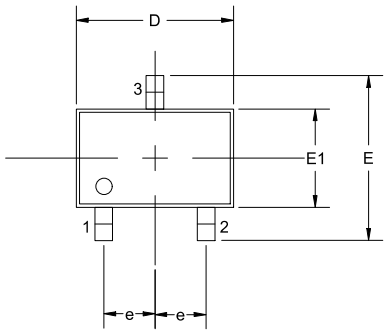
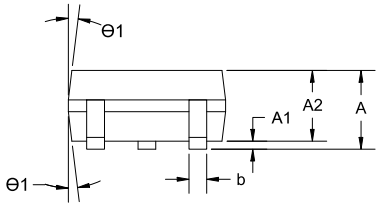
ISSUE A

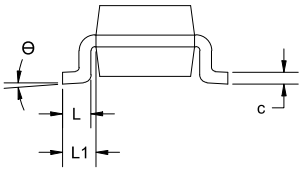
DATE 13 FEB 2023



TOP VIEW



SIDE VIEW

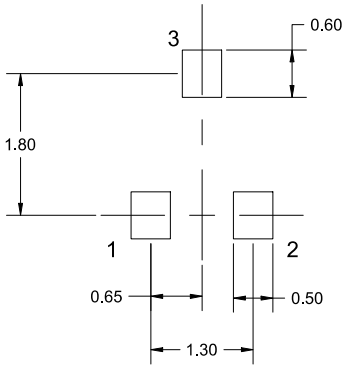


END VIEW

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS. ANGLES IN DEGREES.
2. COMPLIES WITH JEDEC MO-203

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.80		1.10
A1	0.00		0.10
A2	0.80	0.90	1.00
b	0.15		0.30
c	0.08		0.22
D	1.80	2.00	2.20
E	1.80	2.10	2.40
E1	1.15	1.25	1.35
e	0.65 BSC		
L	0.26	0.36	0.46
L1	0.42 REF		
Θ	0°		8°
Θ1	4°		10°



SOLDERING FOOTPRINT

* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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