

PNP Audio-Frequency Low-Noise Amplifier

FJX992

Features

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

ABSOLUTE MAXIMUM RATINGS (Note 1, Note 2)

($T_A = 25\text{ }^{\circ}\text{C}$ 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	$^{\circ}\text{C}$

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.

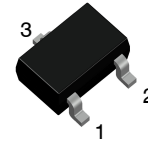
1. These ratings are based on a maximum junction temperature of $150\text{ }^{\circ}\text{C}$.
2. These are steady-state limits. onsemi should be consulted on applications involving pulsed or low-duty cycle operations.

THERMAL CHARACTERISTICS (Note 3)

($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

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

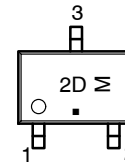
3. PCB size: FR-4 $76 \times 114 \times 1.57\text{ mm}^3$ (3.0 inch $\times$ 4.5 inch $\times$ 0.062 inch) with minimum land pattern size.



1. Base 2. Emitter 3. Collector

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

MARKING DIAGRAM



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

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](http://www.onsemi.com/BRD8011/D).

FJX992

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (Note 4)	$I_C = -1\text{ mA}, I_B = 0$	-120	-	-	V
$V_{(BE)CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\text{ }\mu\text{A}, I_E = 0$	-120	-	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\text{ }\mu\text{A}, I_C = 0$	-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 (Note 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

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 $\leq 2.0\%$.

TYPICAL PERFORMANCE CHARACTERISTICS

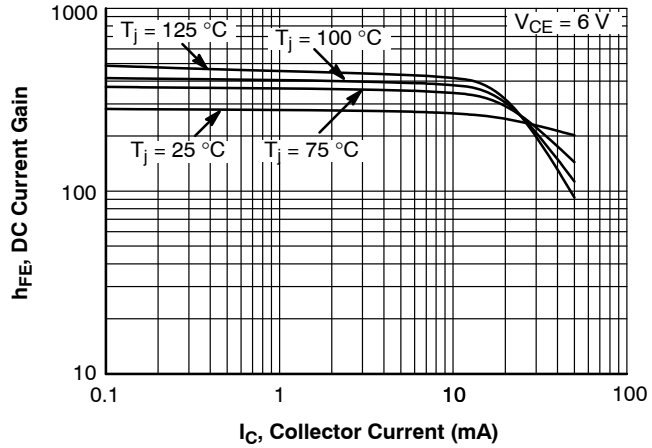


Figure 1. DC Current Gain

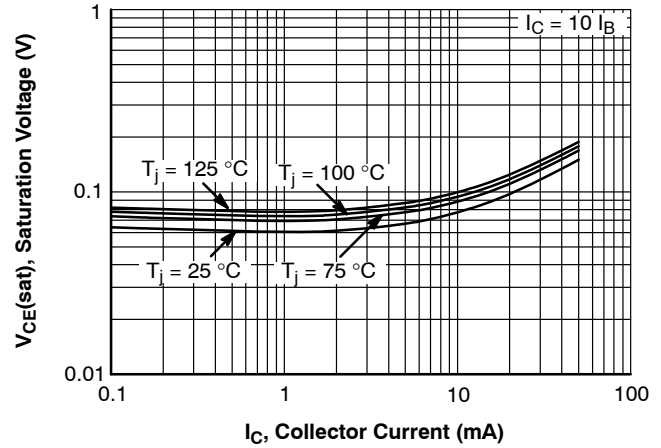


Figure 2. Collector-Emitter Saturation Voltage

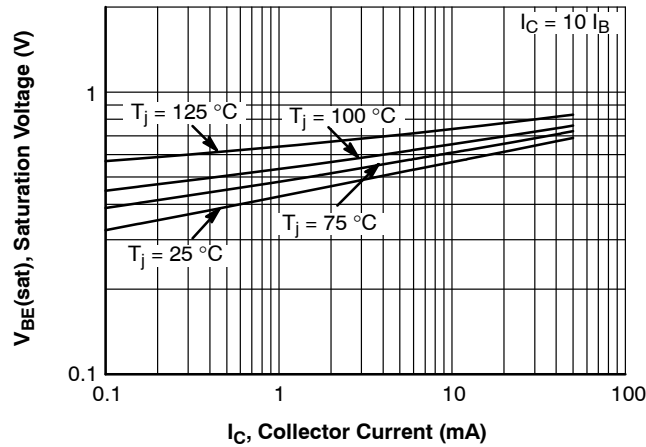


Figure 3. Base-Emitter Saturation Voltage

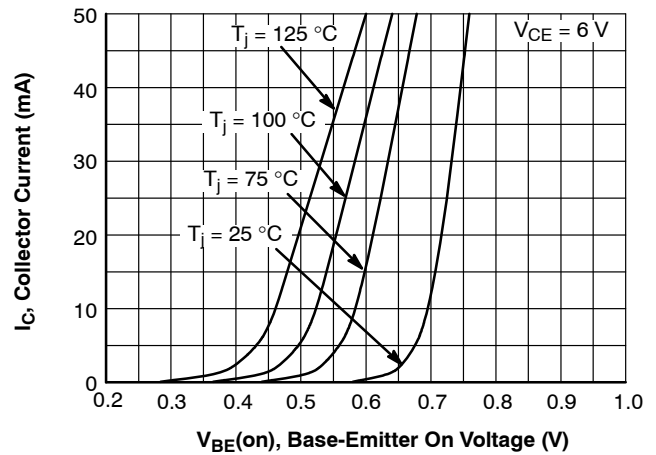


Figure 4. Base-Emitter On Voltage

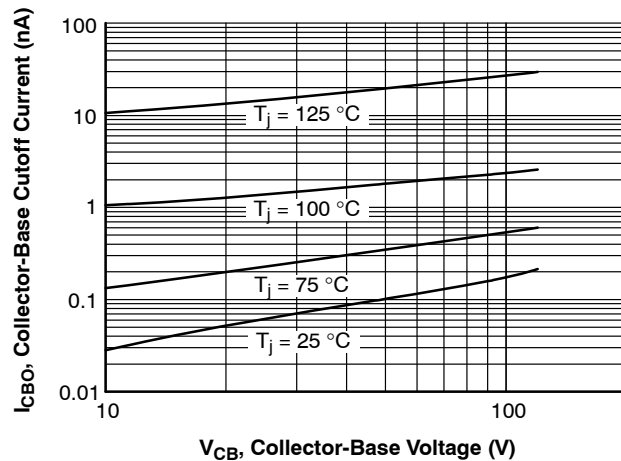


Figure 5. Collector-Base Cut-Off Current

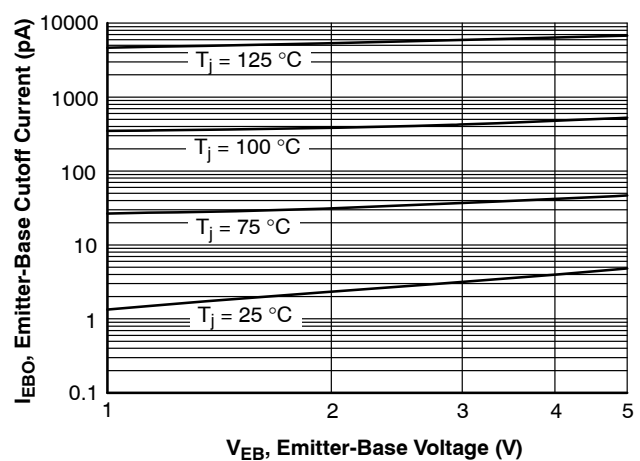


Figure 6. Emitter-Base Cut-Off Current

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

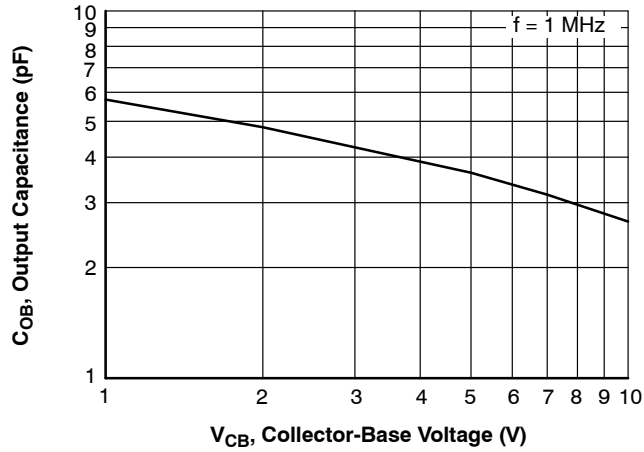


Figure 7. Collector Output Capacitance

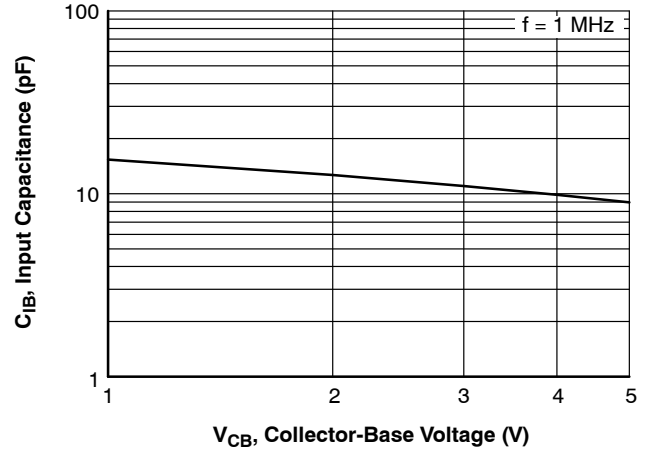


Figure 8. Collector Input Capacitance

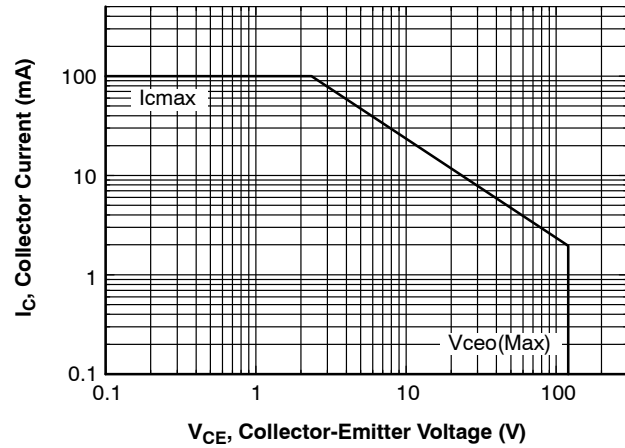


Figure 9. Forward Bias Safe Operating Area

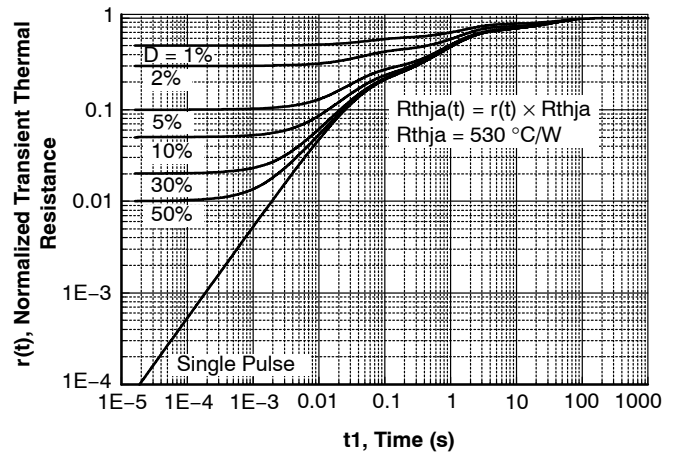
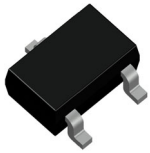


Figure 10. Transient Thermal Resistance

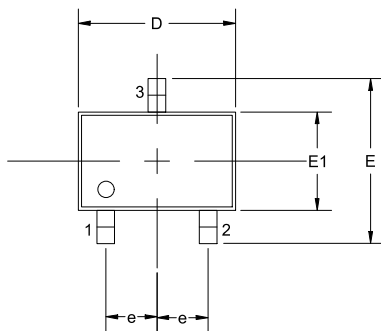
REVISION HISTORY

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

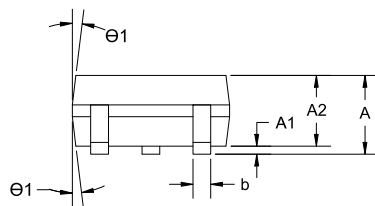


SC-70, 3 Lead, 1.25x2
CASE 419AB
ISSUE A

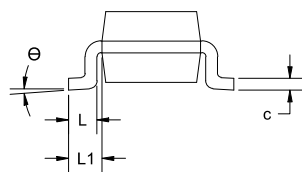
DATE 13 FEB 2023



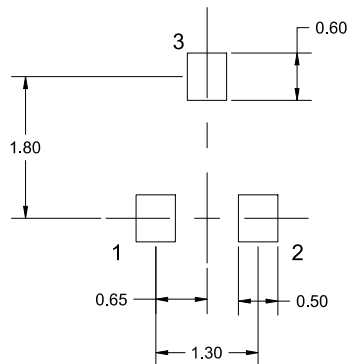
TOP VIEW



SIDE VIEW



END VIEW



SOLDERING FOOTPRINT

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°

* 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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DESCRIPTION:	SC-70, 3 LEAD, 1.25X2	PAGE 1 OF 1

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