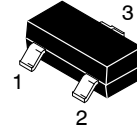


PNP Epitaxial Silicon Transistor

FJV992



1. Base
2. Emitter
3. Collector

SOT-23 (TO-236)
CASE 318
STYLE 6

Audio Frequency Low Noise Amplifier

- Complement to FJV1845

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Rating	Value	Unit
V_{CBO}	Collector-Base Voltage	-120	V
V_{CEO}	Collector-Emitter Voltage	-120	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-50	mA
P_C	Collector Power Dissipation	300	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 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.

h_{FE2} CLASSIFICATION

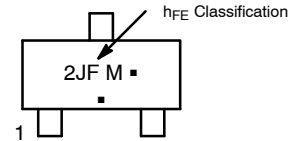
Classification	P	F	E
h_{FE2}	200 ~ 400	300 ~ 600	400 ~ 800

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

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = -100 \mu\text{A}$, $I_E = 0$	-120	-	-	V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -1 \text{ mA}$, $I_B = 0$	-120	-	-	V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -10 \mu\text{A}$, $I_C = 0$	-5	-	-	V
I_{EBO}	Emitter-Base Cutoff Current	$V_{EB} = -6 \text{ V}$, $I_C = 0$	-	-	-30	nA
h_{FE1}	DC Current Gain	$V_{CE} = -6 \text{ V}$, $I_C = -0.1 \text{ mA}$	150	-	-	
h_{FE2}		$V_{CE} = -6 \text{ V}$, $I_C = -1 \text{ mA}$	200	-	800	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -10 \text{ mA}$, $I_B = -1 \text{ mA}$	-	-	-300	mV
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -6 \text{ V}$, $I_C = -1 \text{ mA}$	-0.55	-	-0.65	V
f_T	Current Gain Bandwidth Product	$V_{CE} = -6 \text{ V}$, $I_C = -1 \text{ mA}$	50	-	-	MHz
C_{ob}	Output Capacitance	$V_{CB} = -30 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$	-	-	3	pF
NV	Noise Voltage	$V_{CE} = -5.0 \text{ V}$, $I_C = -1.0 \text{ mA}$, $R_G = 100 \text{ k}\Omega$, $G_V = 80 \text{ dB}$, $f = 10 \text{ Hz to } 1.0 \text{ kHz}$	-	-	40	mV

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.

MARKING DIAGRAM



2JF = Specific Device Code
M = Assembly Operation Month
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
FJV992FMTF	SOT-23 (TO-236) (Pb-Free)	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](#).

TYPICAL CHARACTERISTICS

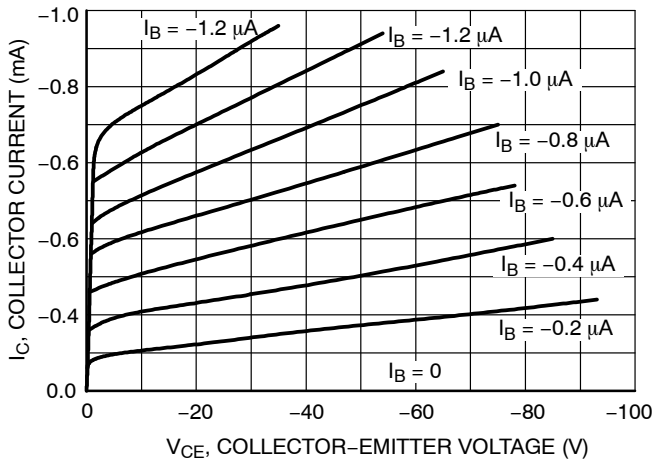


Figure 1. Static Characteristic

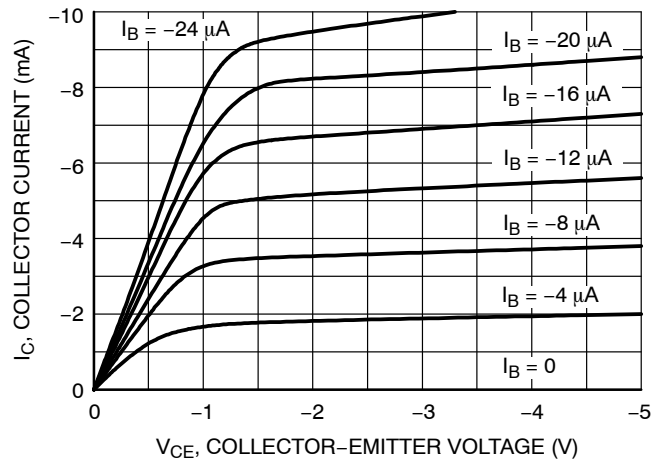


Figure 2. Static Characteristic

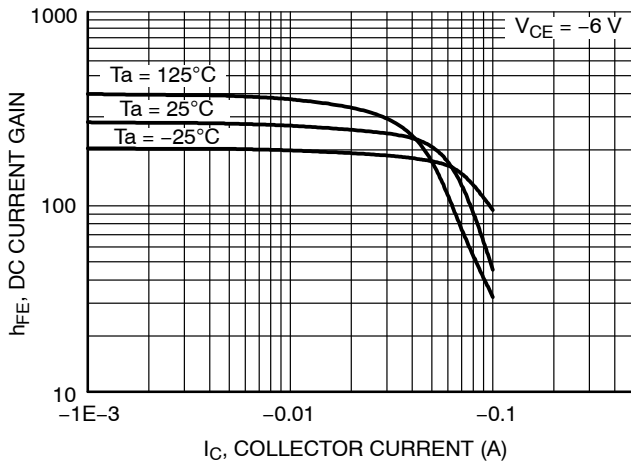


Figure 3. DC Current Gain

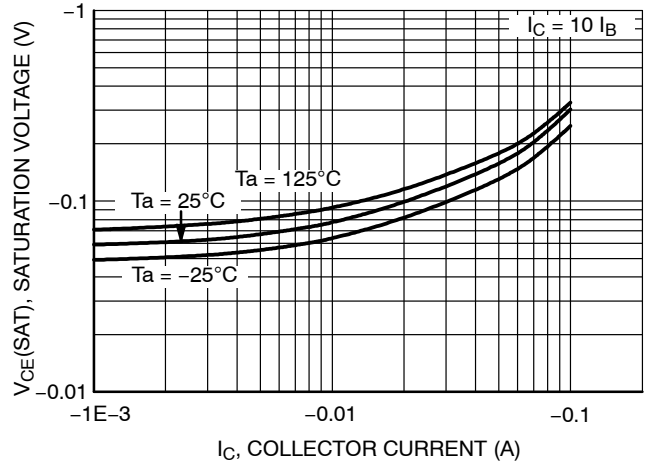


Figure 4. Collector-Emitter Saturation Voltage

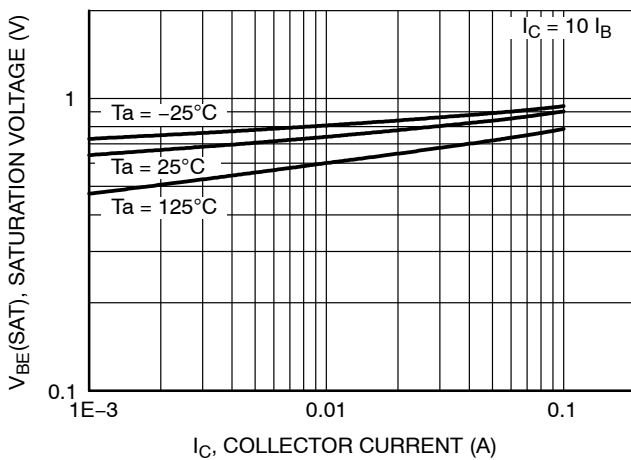


Figure 5. Base-Emitter Saturation Voltage

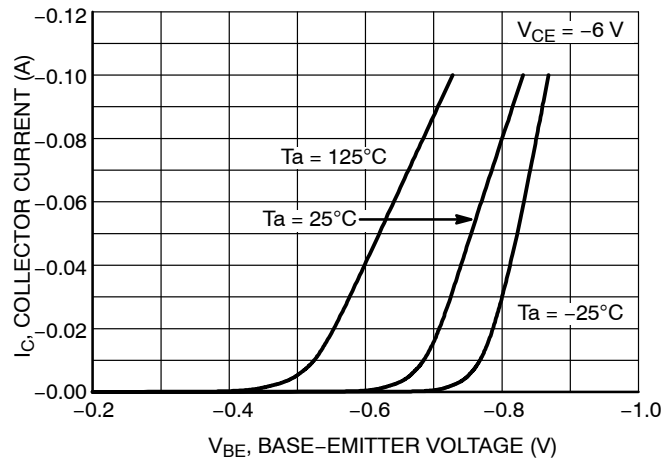


Figure 6. Base-Emitter Voltage

TYPICAL CHARACTERISTICS (continued)

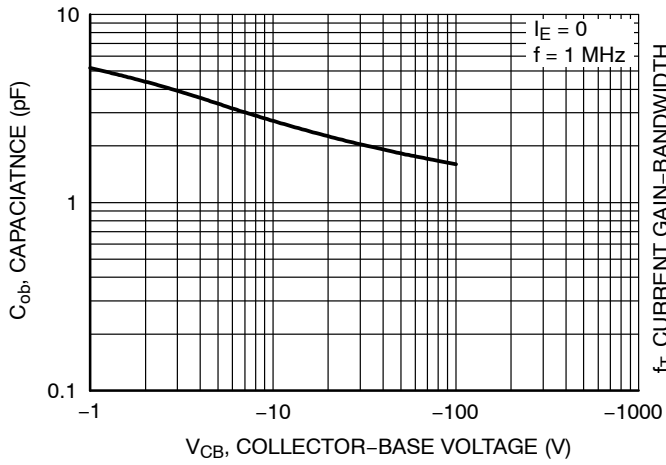


Figure 7. Collector Output Capacitance

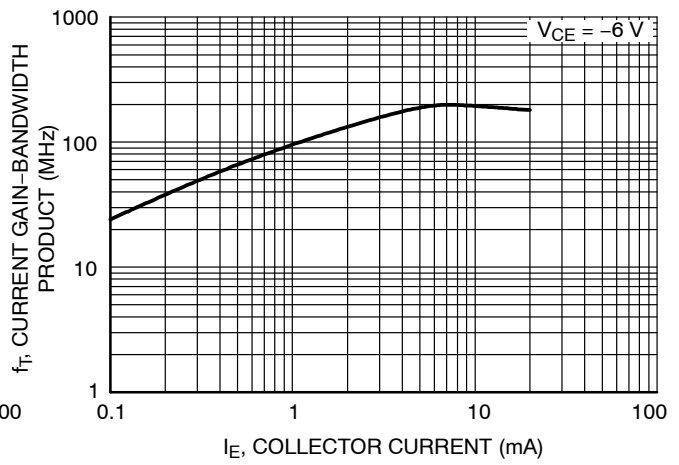


Figure 8. Current Gain Bandwidth Product

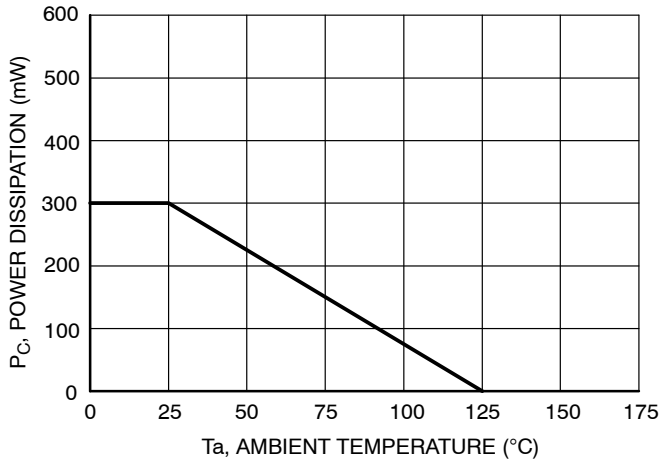


Figure 9. Power Derating

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



SOT-23 (TO-236)
CASE 318
ISSUE AT

DATE 01 MAR 2023

SCALE 4:1



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M,1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
c	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
H _E	2.10	2.40	2.64	0.083	0.094	0.104
T	0°	---	10°	0°	---	10°

GENERIC MARKING DIAGRAM*



- XXX = Specific Device Code
- M = Date Code
- = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



RECOMMENDED MOUNTING 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.

STYLES ON PAGE 2

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MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS



SOT-23 (TO-236) CASE 318 ISSUE AT

DATE 01 MAR 2023

STYLE 1 THRU 5: CANCELLED	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7: PIN 1. EMITTER 2. BASE 3. COLLECTOR	STYLE 8: PIN 1. ANODE 2. NO CONNECTION 3. CATHODE		
STYLE 9: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 10: PIN 1. DRAIN 2. SOURCE 3. GATE	STYLE 11: PIN 1. ANODE 2. CATHODE 3. CATHODE-ANODE	STYLE 12: PIN 1. CATHODE 2. CATHODE 3. ANODE	STYLE 13: PIN 1. SOURCE 2. DRAIN 3. GATE	STYLE 14: PIN 1. CATHODE 2. GATE 3. ANODE
STYLE 15: PIN 1. GATE 2. CATHODE 3. ANODE	STYLE 16: PIN 1. ANODE 2. CATHODE 3. CATHODE	STYLE 17: PIN 1. NO CONNECTION 2. ANODE 3. CATHODE	STYLE 18: PIN 1. NO CONNECTION 2. CATHODE 3. ANODE	STYLE 19: PIN 1. CATHODE 2. ANODE 3. CATHODE-ANODE	STYLE 20: PIN 1. CATHODE 2. ANODE 3. GATE
STYLE 21: PIN 1. GATE 2. SOURCE 3. DRAIN	STYLE 22: PIN 1. RETURN 2. OUTPUT 3. INPUT	STYLE 23: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 24: PIN 1. GATE 2. DRAIN 3. SOURCE	STYLE 25: PIN 1. ANODE 2. CATHODE 3. GATE	STYLE 26: PIN 1. CATHODE 2. ANODE 3. NO CONNECTION
STYLE 27: PIN 1. CATHODE 2. CATHODE 3. CATHODE	STYLE 28: PIN 1. ANODE 2. ANODE 3. ANODE				

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