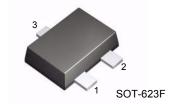


## **FJZ733**

### **Low Frequency Amplifier**

- Collector-Base Voltage : V<sub>CBO</sub>= -60V
  Complement to FJZ945



1. Base 2. Emitter 3. Collector

# **PNP Epitaxial Silicon Transistor**

## Absolute Maximum Ratings Ta=25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
V <sub>CBO</sub>	Collector-Base Voltage	-60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-50	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current	-150	mA
P <sub>C</sub>	Collector Power Dissipation	100	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-55 ~ 150	°C

## **Electrical Characteristics** $T_a$ =25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = -100μA, I <sub>E</sub> =0	-60			V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -10mA. I <sub>B</sub> =0	-50			V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	$I_E = -10\mu A. I_C = 0$	- 5			V
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> =60V, I <sub>E</sub> =0			-100	nA
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>EB</sub> = -5V, I <sub>C</sub> =0			-100	nA
h <sub>FE</sub>	DC Current Gain	$V_{CE}$ = -6V, $I_{C}$ = -1mA	40		700	
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -100mA, I <sub>B</sub> = -10mA		-0.18	-0.3	V
V <sub>BE</sub> (on)	Base-Emitter On Voltage	V <sub>CE</sub> = -6V, I <sub>C</sub> = -1mA	-0.50	-0.62	-0.80	V
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = -6V, I <sub>C</sub> = -10mA	50	180		MHz
C <sub>ob</sub>	Output Capacitance	$V_{CB}$ = -10V, $I_{E}$ = 0, f=1MHz		2.8		pF
NF	Noise Figure	$V_{CE}$ = -6V, $I_{C}$ = -0.3mA f=1MHz, Rs=10k $\Omega$		6.0		dB

## Thermal Characteristics $T_C=25$ °C unless otherwise noted

Symbol	Parameter	Max.	Units
$R_{ hetaJA}$	Thermal Resistance, Junction to Ambient	1250	°C/W

# $h_{\text{FE}}$ Classification & Marking

Classification	R	0	Y	G	L
h <sub>FE</sub>	40 ~ 80	70 ~ 140	120 ~ 240	200 ~ 400	350 ~ 700
Marking	A2	A3	A1	A4	A5



# **Typical Characteristics**

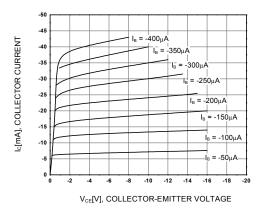
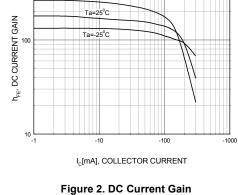


Figure 1. Static Characteristic



Ta=125°C

V<sub>CE</sub>=-6V

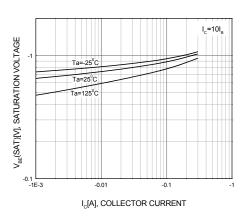


Figure 3. Base-Emitter Saturation Voltage

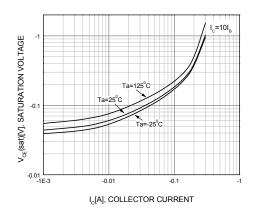


Figure 4. Collector-Emitter Saturation Voltage

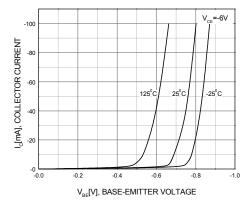


Figure 5. Base-Emitter On Voltage

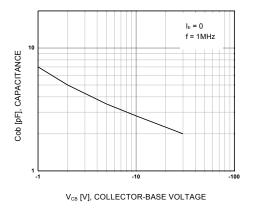


Figure 6. Collector Output Capacitance

©2003 Fairchild Semiconductor Corporation Rev. B1, July 2003

# Typical Characteristics (Continued)

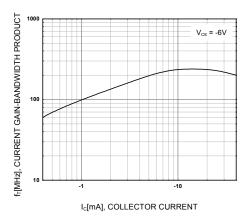
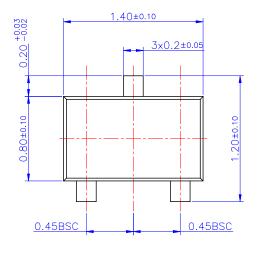
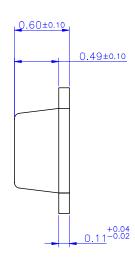


Figure 7. Current Gain Bandwidth Product

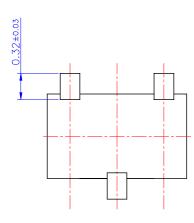
# **Package Dimensions**

# SOT-623F









Dimensions in Millimeters

### **TRADEMARKS**

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	FACT™	ImpliedDisconnect™	PACMAN™	SPM™
ActiveArray™	FACT Quiet Series™	ISOPLANAR™	POP™	Stealth™
Bottomless™	FAST <sup>®</sup>	LittleFET™	Power247™	SuperSOT™-3
CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
$CROSSVOLT^{\text{TM}}$	FRFET™	MicroPak™	QFET <sup>®</sup>	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
EcoSPARK™	GTO™	MSX™	QT Optoelectronics™	TinyLogic <sup>®</sup>
E <sup>2</sup> CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I <sup>2</sup> C™	OCX™	RapidConfigure™	UHC™
Across the board.	Around the world.™	OCXPro™	RapidConnect™	UltraFET <sup>®</sup>
The Power Franchise™		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER®	VCX™
Programmable Ad	ctive Droop™	OPTOPLANAR™	SMART START™	

#### **DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

### LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

- 1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
- 2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

### **PRODUCT STATUS DEFINITIONS**

### **Definition of Terms**

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

©2003 Fairchild Semiconductor Corporation Rev