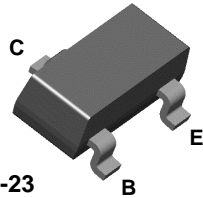


## BSS63



SOT-23  
Mark: T3

### PNP General Purpose Amplifier

This device is designed for general purpose amplifier and switch applications requiring high voltages. Sourced from Process 74.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	100	V
V <sub>CBO</sub>	Collector-Base Voltage	110	V
V <sub>EBO</sub>	Emitter-Base Voltage	6.0	V
I <sub>C</sub>	Collector Current - Continuous	200	mA
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +150	°C

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- 3) All voltages (V) and currents (A) are negative polarity for PNP transistors.

#### Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		*BSS63	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	°C/W

\*Device mounted on FR-4 PCB 40 mm X 40 mm X 1.5 mm.

# PNP General Purpose Amplifier

(continued)

BSS63

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
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### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 100 \mu A, I_B = 0$	100		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \mu A, I_E = 0$	110		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 1.0 \mu A, I_C = 0$	6.0		V
$I_{CBO}$	Collector-Cutoff Current	$V_{CB} = 90 V, I_E = 0$ $V_{CB} = 90 V, I_E = 0, T_A = 150^\circ C$		100 50	nA $\mu A$
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 6.0 V, I_C = 0$		200	nA

### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain	$I_C = 10 mA, V_{CE} = 1.0 V$ $I_C = 25 mA, V_{CE} = 1.0 V$	30 30		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 25 mA, I_B = 2.5 mA$		0.25	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 25 mA, I_B = 2.5 mA$		0.9	V

### SMALL SIGNAL CHARACTERISTICS

$f_T$	Current Gain - Bandwidth Product	$I_C = 25 mA, V_{CE} = 5.0,$ $f = 35 MHz$	50		MHz
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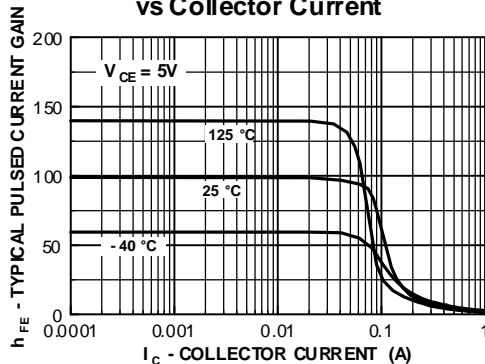
**NOTE:** All voltages (V) and currents (A) are negative polarity for PNP transistors.

## Spice Model

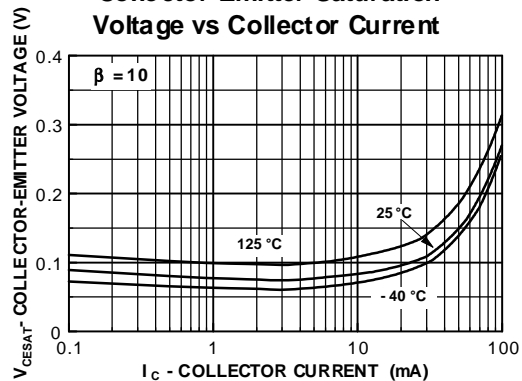
PNP (Is=21.48f Xti=3 Eg=1.11 Vaf=100 Bf=132.1 Ne=1.375 Ise=21.48f Ikf=.1848 Xtb=1.5 Br=3.661 Nc=2 Isc=0 Ikr=0 Rc=1.6 Cjc=17.63p Mjc=.5312 Vjc=.75 Fc=.5 Cje=73.39p Mje=.3777 Vje=.75 Tr=1.476n Tf=641.9p Ipf=0 Vtf=0 Xtf=0 Rb=10)

## Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

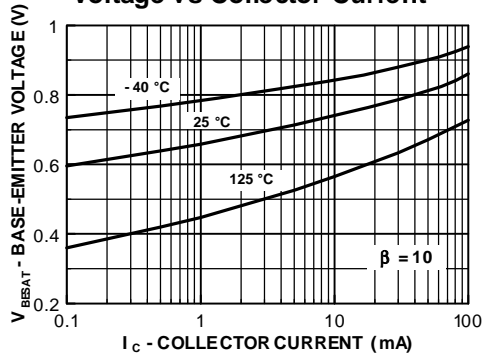


Collector-Emitter Saturation Voltage vs Collector Current

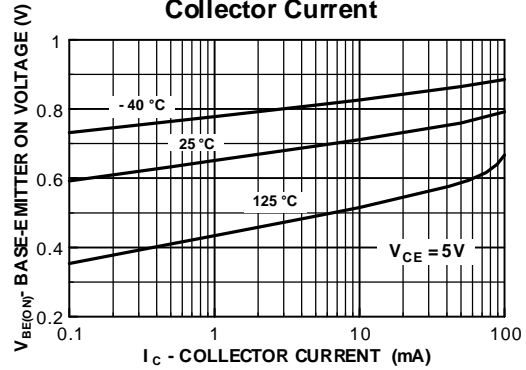


Typical Characteristics

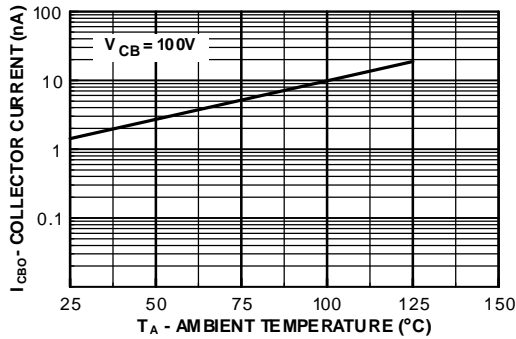
Base-Emitter Saturation Voltage vs Collector Current



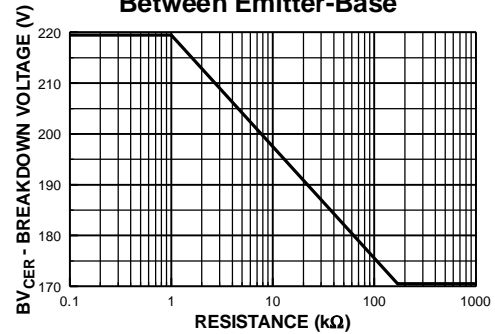
Base-Emitter ON Voltage vs Collector Current



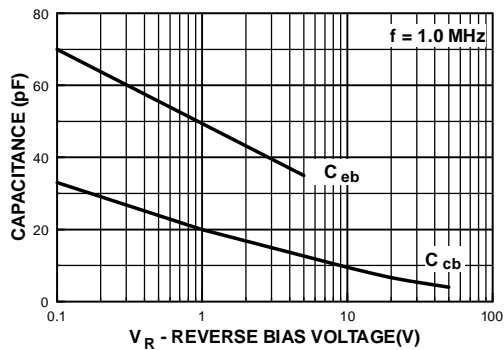
Collector-Cutoff Current vs Ambient Temperature



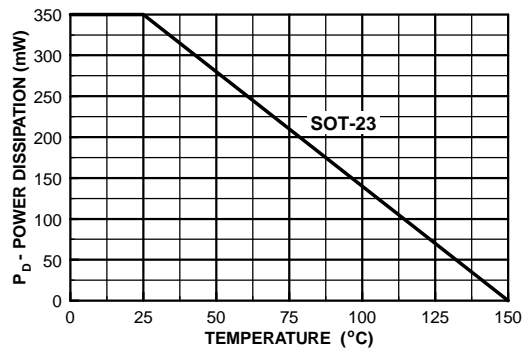
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Input and Output Capacitance vs Reverse Voltage



Power Dissipation vs Ambient Temperature



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E <sup>2</sup> CMOS™	MICROWIRE™	SILENT SWITCHER®	
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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.