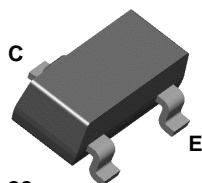


## BSS63



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
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{CBO}$	Collector-Base Voltage	110	V
$V_{EBO}$	Emitter-Base Voltage	6.0	V
$I_C$	Collector Current - Continuous	200	mA
$T_J, T_{stg}$	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	
$P_D$	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
$R_{\theta JA}$	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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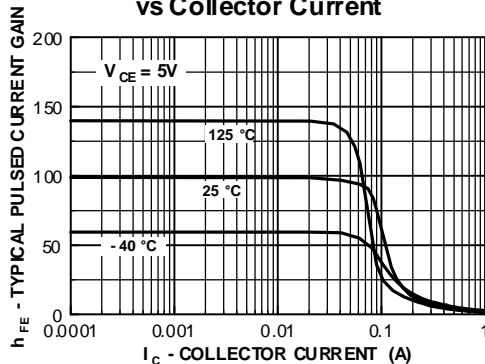
**NOTE:** All voltages (V) and currents (A) are negative polarity for PNP transistors.

## Spice Model

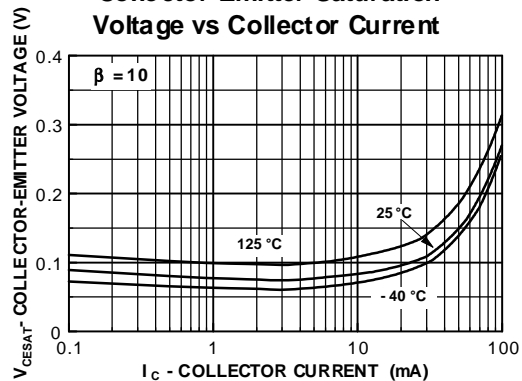
PNP (Is=21.48f Xti=3 Eg=1.11 Vaf=100 Bf=132.1 Ne=1.375 Ise=21.48f Ikf=.1848 Xtb=1.5 Br=3.661 Nc=2 Isc=0 Ikr=0 Rc=1.6 Cjc=17.63p Mjc=.5312 Vjc=.75 Fc=.5 Cje=73.39p Mje=.3777 Vje=.75 Tr=1.476n Tf=641.9p Ipf=0 Vtf=0 Xtf=0 Rb=10)

## Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

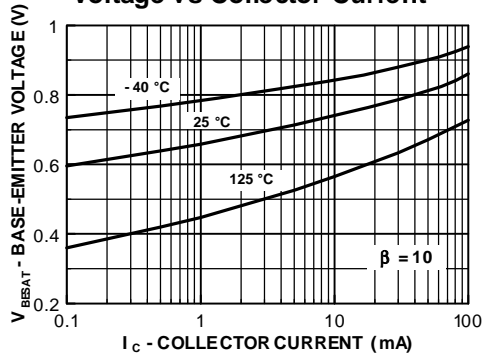


Collector-Emitter Saturation Voltage vs Collector Current

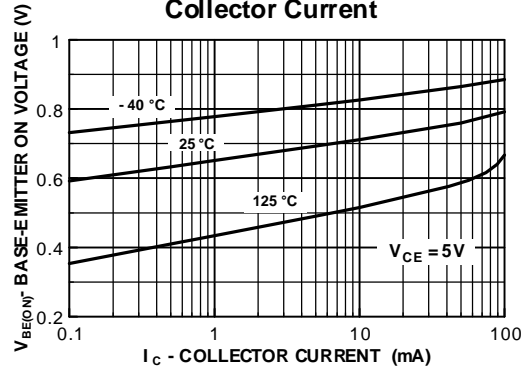


Typical Characteristics

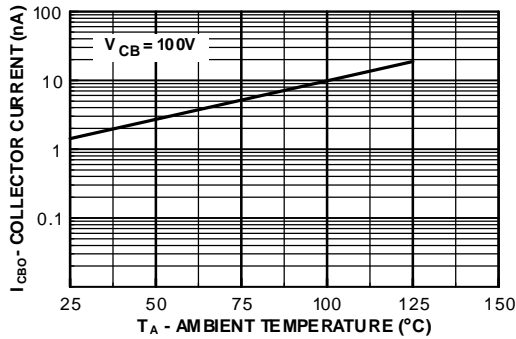
Base-Emitter Saturation Voltage vs Collector Current



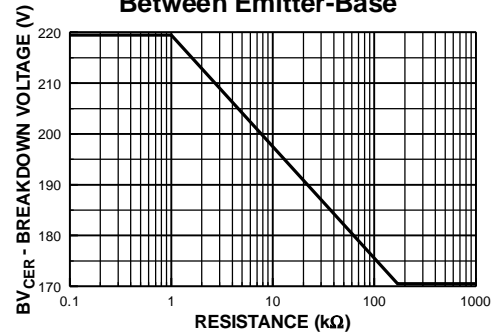
Base-Emitter ON Voltage vs Collector Current



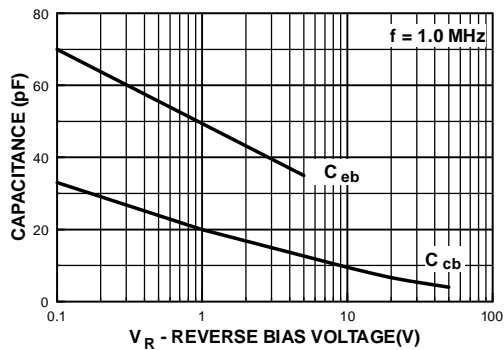
Collector-Cutoff Current vs Ambient Temperature



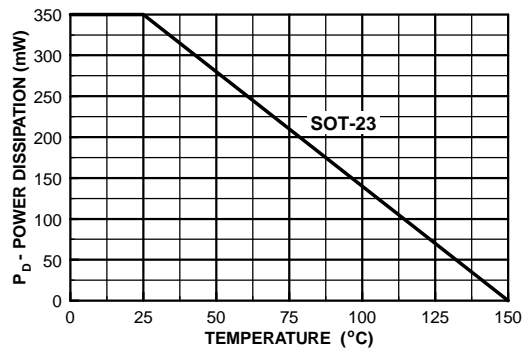
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Input and Output Capacitance vs Reverse Voltage



Power Dissipation vs Ambient Temperature



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