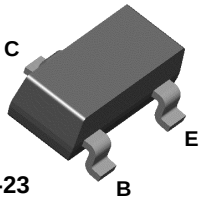
FAIRCHILD
SEMICONDUCTOR TM

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 2.8	mW 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)

Electrical Characteristics
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = 100 μA, I_B = 0	100		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10 μA, I_E = 0	110		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 1.0 μA, 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°C		100 50	nA μA
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

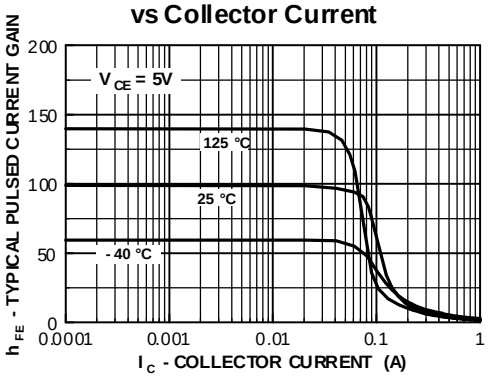
NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.

Spice Model

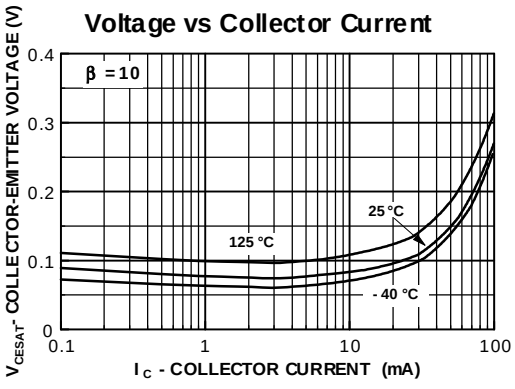
PNP (Is=21.48f Xti=3 Eg=1.11 Vaf=100 Bf=132.1 Ne=1.375 Ise=21.48f Ikf=.1848 Xtb=1.5 Br=3.661 Nc=2 Isc=0 Ikr=0 Rc=1.6 Cjc=17.63p Mjc=.5312 Vjc=.75 Fc=.5 Cje=73.39p Mje=.3777 Vje=.75 Tr=1.476n Tf=641.9p Itf=0 Vtf=0 Xtf=0 Rb=10)

Typical Characteristics

Typical Pulsed Current Gain vs Collector Current

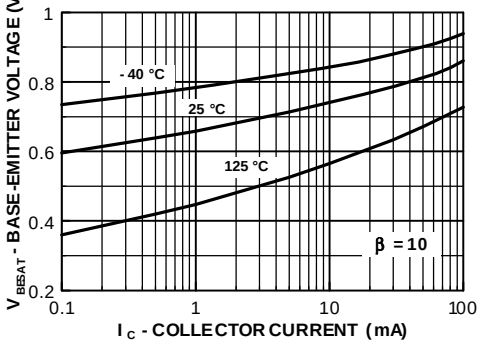


Collector-Emitter Saturation Voltage vs Collector Current

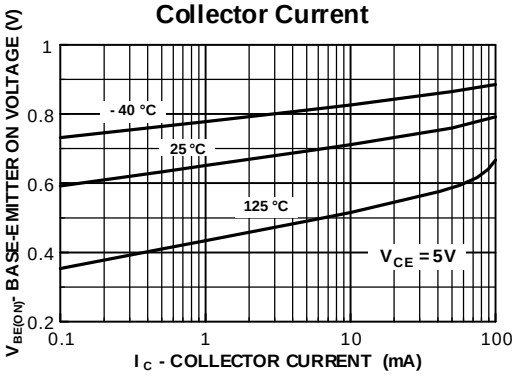


Typical Characteristics

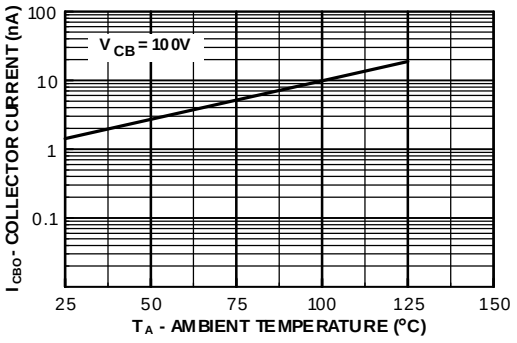
Base-Emitter Saturation Voltage vs Collector Current



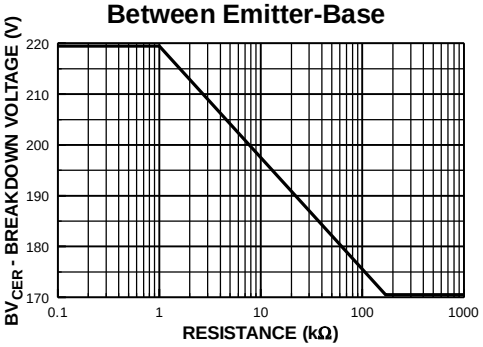
Base-Emitter ON Voltage vs Collector Current



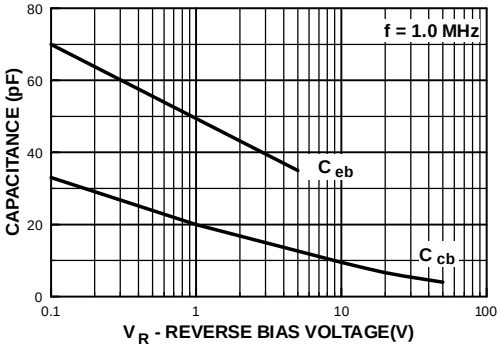
Collector-Cutoff Current vs Ambient Temperature



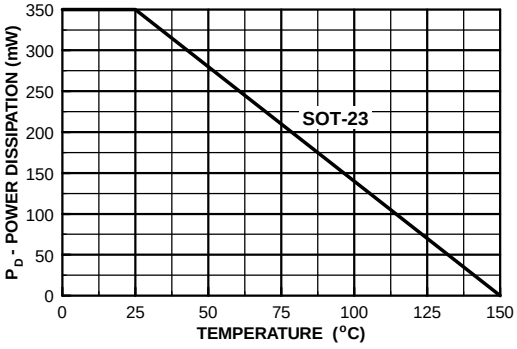
Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base



Input and Output Capacitance vs Reverse Voltage



Power Dissipation vs Ambient Temperature



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