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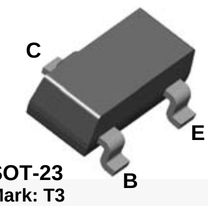
March 2014

BSS63
PNP General-Purpose Amplifier

Description

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



SOT-23
Mark: T3

Ordering Information

Part Number	Marking	Package	Packing Method
BSS63	T3	SOT-23 3L	Tape and Reel

Absolute Maximum Ratings[1],[2]

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter Voltage	-100	V
V_{CBO}	Collector-Base Voltage	-110	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current - Continuous	-200	mA
T_J , T_{STG}	Junction and Storage Temperature Range	-55 to +150	°C

Notes:

1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

Thermal Characteristics[3]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Max.	Unit
P_D	Total Device Dissipation	350	mW
	Derate Above T_A = 25°C	2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

Note:

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

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$V_{(BR)CEO}$	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 Cut-Off Current	V_{CB} = -90 V, I_E = 0		-100	nA
		V_{CB} = -90 V, I_E = 0, T_A = 150°C		-50	µA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = -6.0 V, I_C = 0		-200	nA
h_{FE}	DC Current Gain	I_C = -10 mA, V_{CE} = -1.0 V	30		
		I_C = -25 mA, V_{CE} = -1.0 V	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
f_T	Current Gain - Bandwidth Product	I_C = 25 mA, V_{CE} = -5.0 V, f = 35 MHz	50		MHz

Typical Performance Characteristics

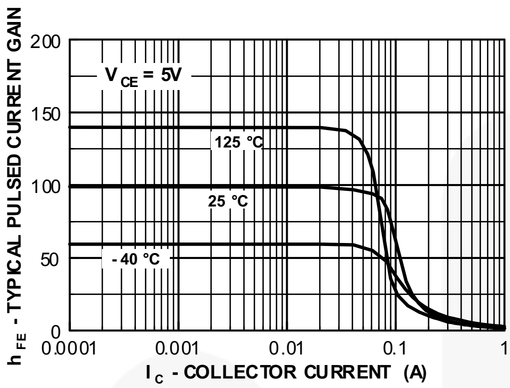


Figure 1. Typical Pulsed Current Gain vs. Collector Current

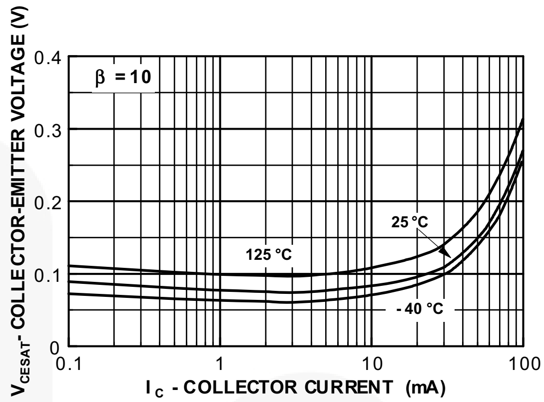


Figure 2. Collector-Emitter Saturation Voltage vs. Collector Current

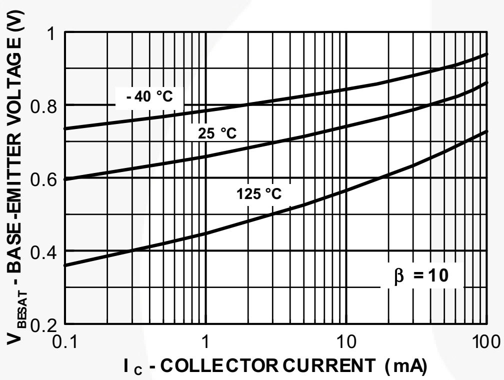


Figure 3. Base-Emitter Saturation Voltage vs. Collector Current

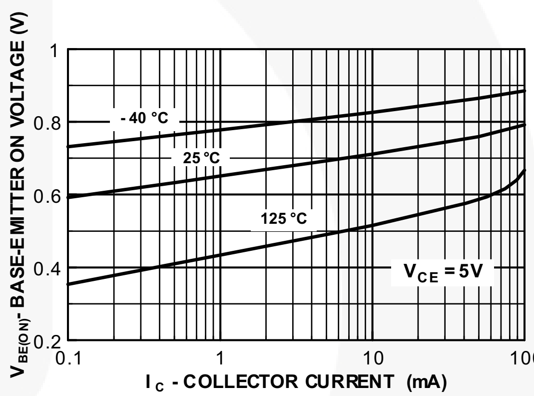


Figure 4. Base-Emitter On Voltage vs. Collector Current

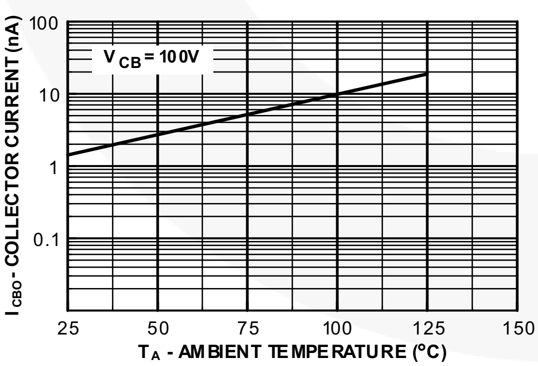


Figure 5. Collector Cut-Off Current vs. Ambient Temperature

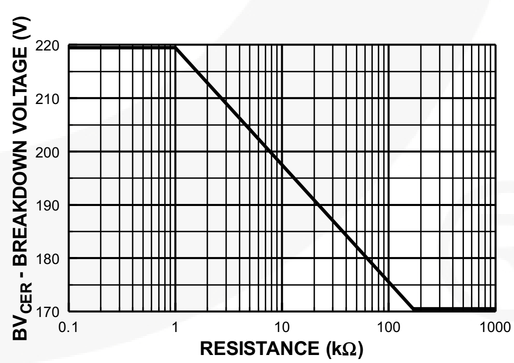


Figure 6. Collector-Emitter Breakdown Voltage with Resistance Between Emitter-Base

Typical Performance Characteristics (Continued)

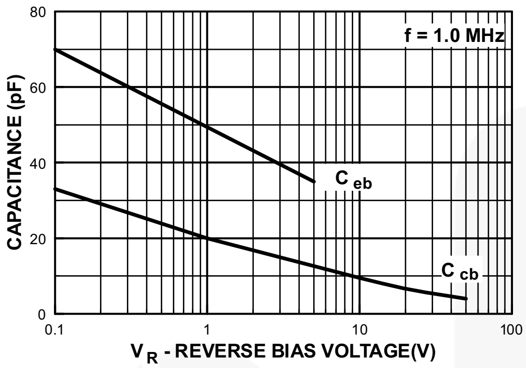


Figure 7. Input and Output Capacitance vs. Reverse Voltage

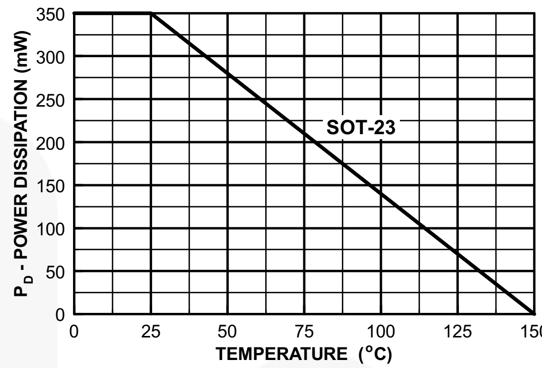


Figure 8. Power Dissipation vs. Ambient Temperature

Physical Dimensions

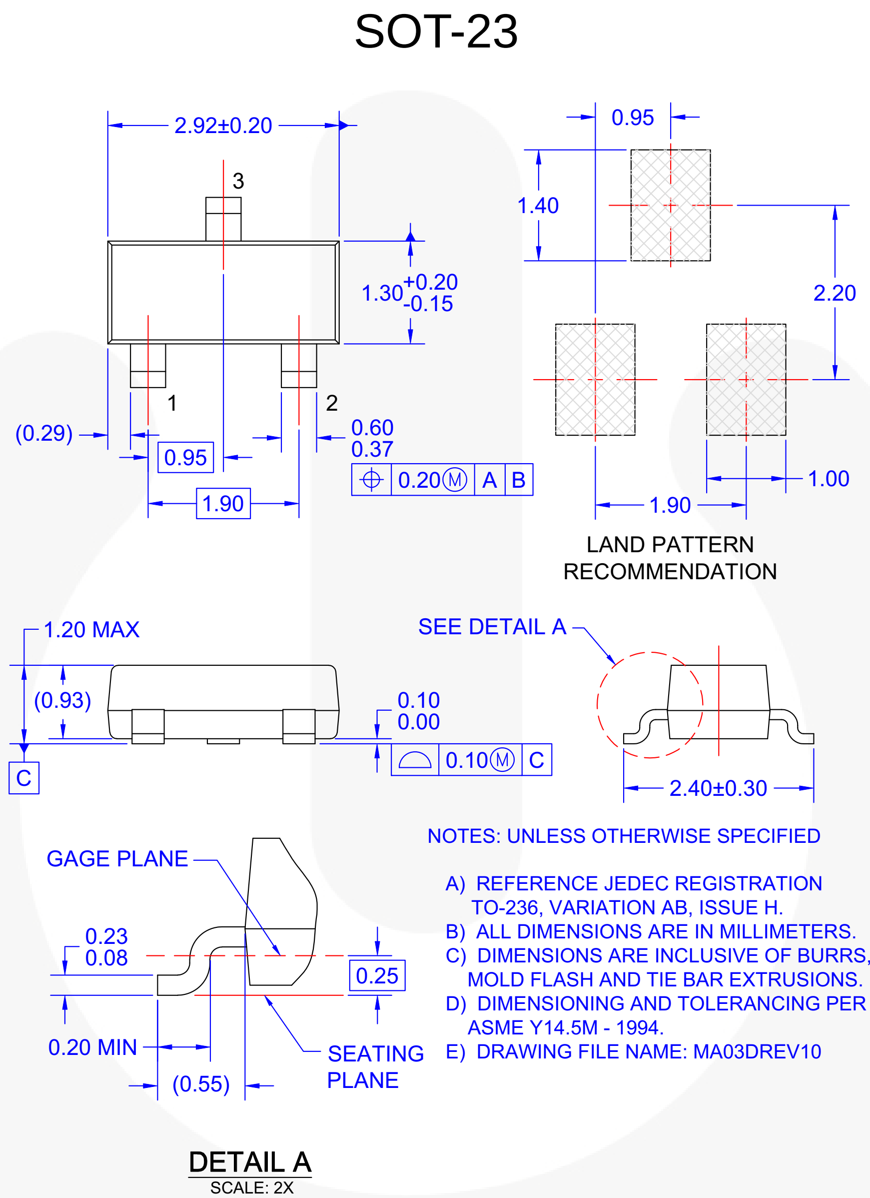


Figure 9. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE (ACTIVE)

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