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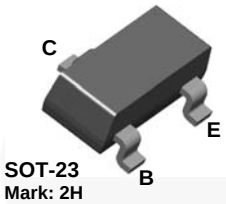
March 2014

MMBTA55
PNP General-Purpose Amplifier

Description

This device is designed for general-purpose amplifier applications at collector currents to 300 mA. Sourced from process 73.



SOT-23
Mark: 2H

Ordering Information

Part Number	Marking	Package	Packing Method
MMBTA55	2H	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	-60	V
V_{CBO}	Collector-Base Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-4	V
I_C	Collector Current - Continuous	-500	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 1.6 inch X 1.6 inch X 0.06 inch.

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[4]	I_C = -1.0 mA, I_B = 0	-60		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = -100 μA, I_E = 0	-60		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = -100 μA, I_C = 0	-4.0		V
I_{CEO}	Collector Cut-Off Current	V_{CE} = -60 V, I_B = 0		-0.1	μA
I_{CBO}	Collector Cut-Off Current	V_{CB} = -60 V, I_E = 0		-0.1	μA
h_{FE}	DC Current Gain	I_C = -10 mA, V_{CE} = -1.0 V	100		
		I_C = -100 mA, V_{CE} = -1.0 V	100		
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = -100 mA, I_B = -10 mA		-0.25	V
V_{BE}(on)	Base-Emitter On Voltage	I_C = -100 mA, V_{CE} = -1.0 V		-1.2	V
f_T	Current Gain - Bandwidth Product	I_C = -100 mA, V_{CE} = -1.0 V, f = 100 MHz	50		MHz

Note:

4. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

Physical Dimensions

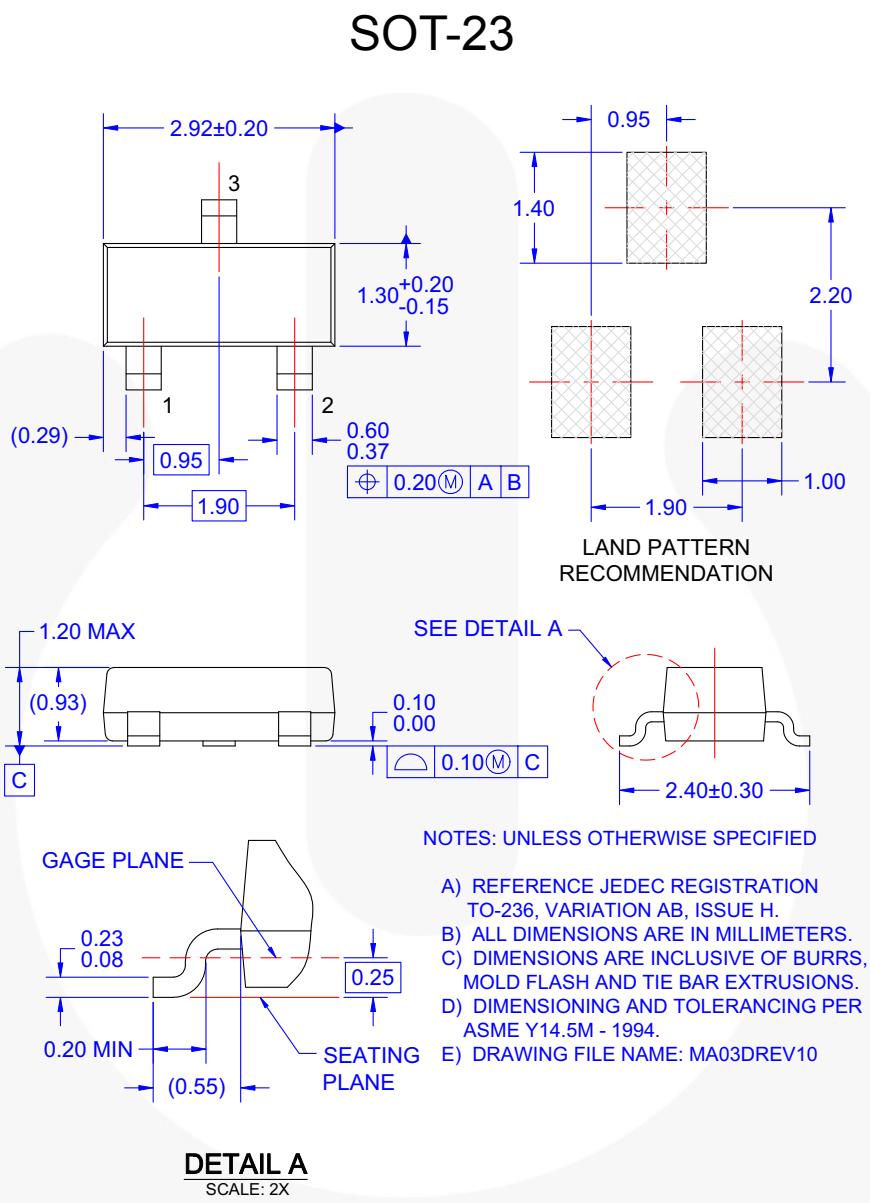


Figure1. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE (ACTIVE)

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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I68

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