



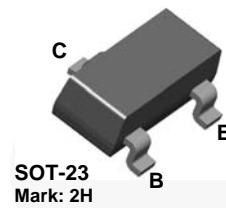
March 2014

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.



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 $T_A = 25^\circ\text{C}$ 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	$^\circ\text{C}$

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 $T_A = 25^\circ\text{C}$ unless otherwise noted.

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

Note:

3. Device mounted on FR-4 PCB 1.6 inch X 1.6 inch X 0.06 inch.

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

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

Note:

4. Pulse test: pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2.0\%$.

Physical Dimensions

SOT-23

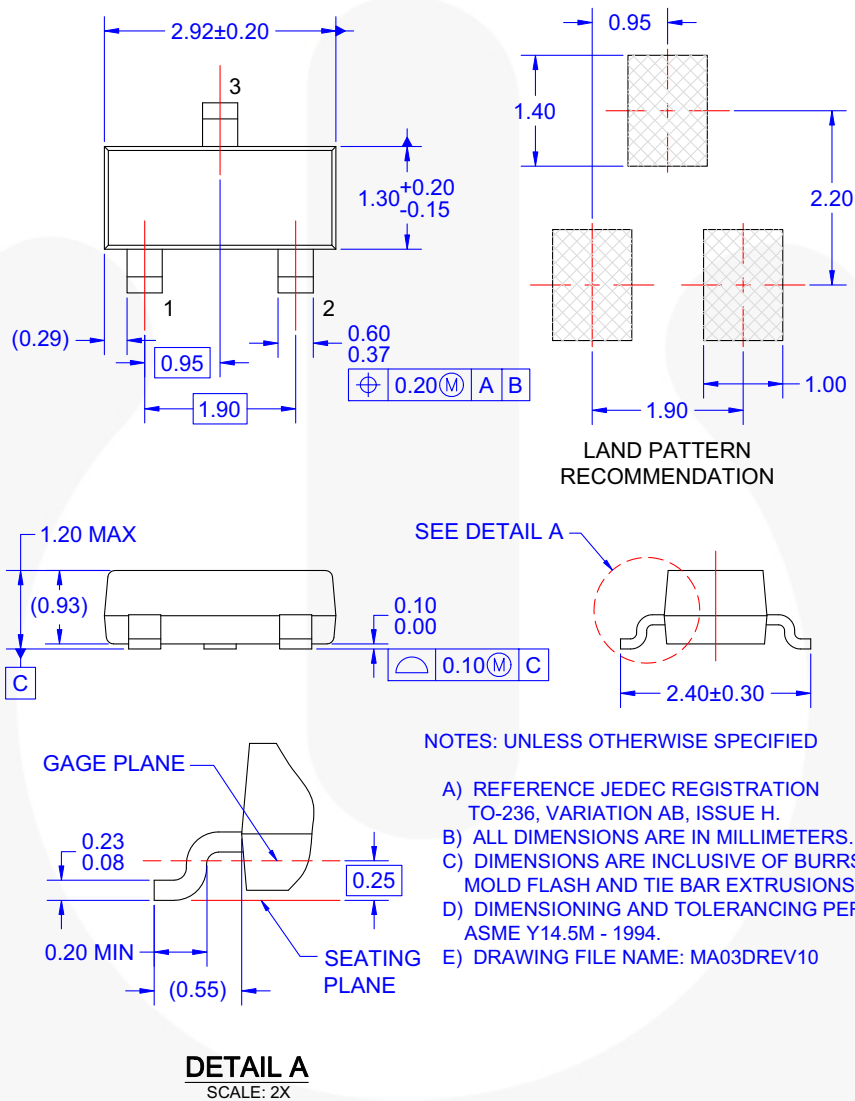


Figure1. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE (ACTIVE)

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