FAIRCHILD
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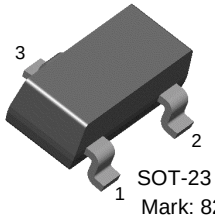
MMBT4356

PNP General Purpose Amplifier

- This device is designed for use as general purpose amplifiers and switches requiring collector currents to 500mA.
- Sourced from process 67.
- See TN4033A for characteristics.



SOT-23
Mark: 82
1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings * T_A=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage	-80	V
V_{CBO}	Collector-Base Voltage	-80	V
V_{EBO}	Emitter-Base Voltage	-5.0	V
I_C	Collector current - Continuous	-800	mA
T_J, T_{stg}	Operating and Storate Junction Temperature Range	-55 ~ +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.

Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
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

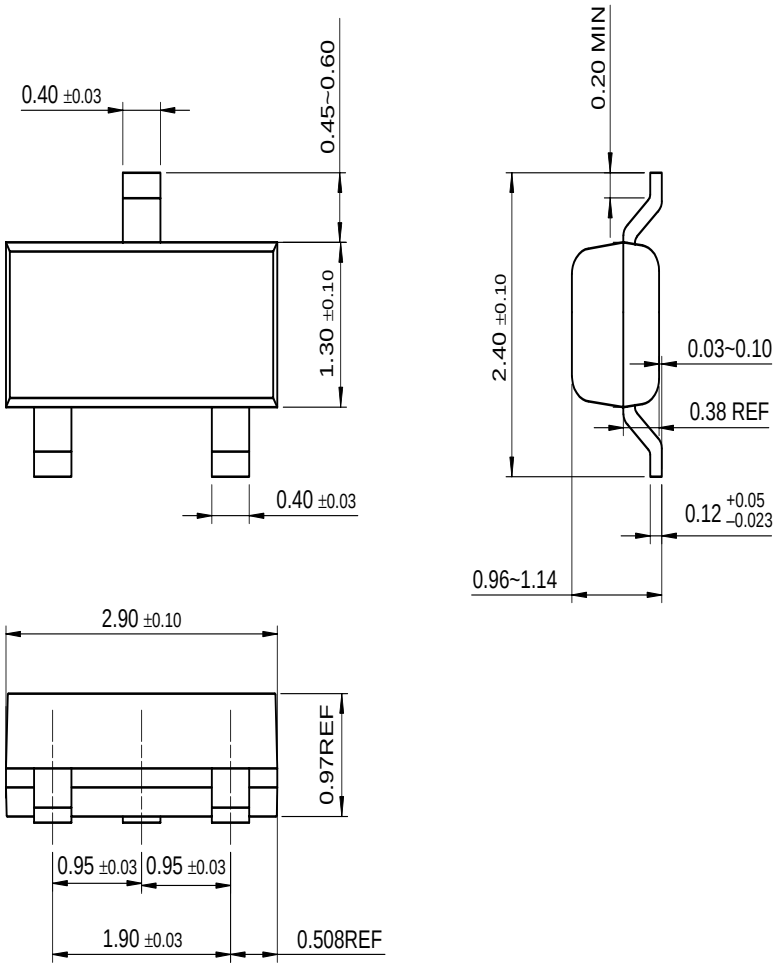
Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	I_C = -10mA, I_B = 0	-80			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = -10µA, I_E = 0	-80			V
$V_{(BR)EBS}$	Emitter-Base Breakdown Voltage	I_C = -10µA, I_C = 0	-5.0			V
I_{CBO}	Collector Cutoff Current	V_{CB} = -50V, I_E = 0 V_{CB} = -50V, I_E = 0, T_A = 75°C			-50 -5.0	nA µA
I_{CES}	Collector Cutoff Current	V_{CB} = -50V, I_E = 0			-50	nA
I_{EBO}	Emitter Cutoff Current	V_{EB} = -4.0V, I_C = 0			-100	µA
On Characteristics						
h_{FE}	DC Current Gain	V_{CE} = -10V, I_C = -100µA V_{CE} = -10V, I_C = -1.0mA V_{CE} = -10V, I_C = -10mA V_{CE} = -10V, I_C = -100mA V_{CE} = -10V, I_C = -500mA	25 40 50 40 30		 250 	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = -150mA, I_B = -15mA I_C = -500mA, I_B = -50mA			-0.15 -0.5	V V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C = -150mA, I_B = -15mA I_C = -500mA, I_B = -50mA			-0.9 -1.1	V V
Small Signal Characteristics						
C_{ob}	Output Capacitance	V_{CB} = -10V, f = 1MHz			30	pF
C_{ib}	Input Capacitance	V_{BE} = -0.5V, f = 1MHz			110	pF
h_{fe}	Small-Signal Current Gain	V_{CE} = -10V, I_C = -50mA, f = 100MHz	1.0		5.0	
NF	Noise Figure	V_{CE} = -10V, I_C = -100µA R_S = 1kΩ, f = 1kHz B_W = 1Hz			3.0	dB
Switching Characteristics						
t_{on}	Turn-On Time	V_{CC} = -30V, I_C = -500mA I_{B1} = I_{B2} = -50mA			100	ns
t_{off}	Turn-Off Time				400	ns

* Pulse Test: Pulse Width ≤ 300µs, Duty ≤ 2.0%

Package Dimensions

SOT-23



Dimensions in Millimeters

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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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