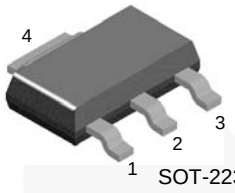
FAIRCHILD SEMICONDUCTOR®

January 2014

FZT749
PNP Low Saturation Transistor

Description

These devices are designed with high-current gain and low saturation voltage with collector currents up to 3 A continuous.



SOT-223

1. Base 2,4. Collector 3. Emitter

Ordering Information

Part Number	Marking	Package	Packing Method
FZT749	749	SOT-223 4L	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 Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter Voltage	-25	V
V_{CBO}	Collector-Base Voltage	-35	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current - Continuous	-3	A
T_J, T_{STG}	Operating and Storage Junction 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 application involving pulsed or low-duty cycle operation.

Thermal Characteristics[3]

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

Symbol	Parameter	Max.	Unit
P_D	Total Device Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62.5	°C/W

Note:

3. PCB size: FR-4 76 x 114 x 1.57 mm^3 (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

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

Symbol	Parameter	Conditions	Min.	Max.	Unit
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = -10 mA	-25		V
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = -100 µA	-35		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = -100 µA	-5		V
I_{CBO}	Collector-Base Cut-Off Current	V_{CB} = -30 V		-100	nA
		V_{CB} = -30 V, T_A = 100°C		-10	µA
I_{EBO}	Emitter-Base Cut-Off Current	V_{EB} = -4 V		-100	nA
h_{FE}	DC Current Gain[4]	I_C = -50 mA, V_{CE} = -2 V	70		
		I_C = -1 A, V_{CE} = -2 V	100	300	
		I_C = -2 A, V_{CE} = -2 V	75		
		I_C = -6 A, V_{CE} = -2 V	15		
$V_{CE}(sat)$	Collector-Emitter Saturation Voltage[4]	I_C = -1 A, I_B = -100 mV		-300	mV
		I_C = -3 A, I_B = -300 mV		-600	
$V_{BE}(sat)$	Base-Emitter Saturation Voltage[4]	I_C = -1 A, I_B = -100 mV		-1.25	V
$V_{BE}(on)$	Base-Emitter On Voltage[4]	I_C = -1 A, V_{CE} = -2 V		-1	V
C_{ob}	Output Capacitance	V_{CB} = -10 V, I_E = 0, f = 1 MHz		100	pF
f_T	Transition Frequency	I_C = -100 mA, V_{CE} = -5 V, f = 100 MHz	100		MHz

Note:

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

Physical Dimensions

SOT-223

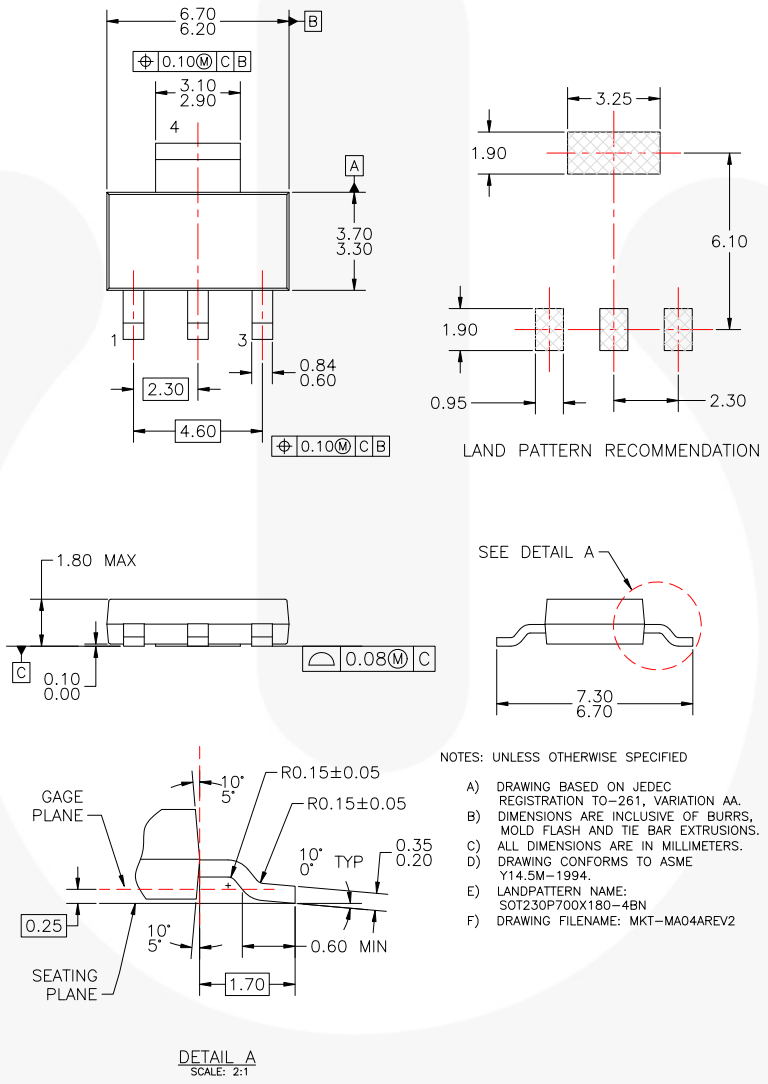


Figure 1. MOLDED PACKAGE, SOT-223, 4 LEAD (ACTIVE)

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