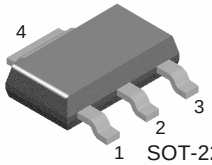
FAIRCHILD SEMICONDUCTOR®

PZTA29
NPN Darlington Transistor

- This device designed for applications requiring extremely high current gain at collector currents to 500mA.
- Sourced from process 03.



SOT-223

1. Base 2.4. Collector 3. Emitter

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

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage	100	V
V_{CBO}	Collector-Base Voltage	100	V
V_{EBO}	Emitter-Base Voltage	12	V
I_C	Collector Current - Continuous	800	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +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 limits. The factory should be consulted on application involving pulsed or low duty cycle operations

Electrical Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max	Units
Off Characteristics					
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	I_C = 100µA, V_{BE} = 0	100		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100µA, I_E = 0	100		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10µA, I_C = 0	12		V
I_{CBO}	Collector Cutoff Current	V_{CB} = 80V, I_E = 0		100	nA
I_{CES}	Collector Cutoff Current	V_{CE} = 80V, V_{BE} = 0		500	nA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 10V, I_C = 0		100	nA
On Characteristics					
h_{FE}	DC Current Gain	V_{CE} = 5.0V, I_C = 10mA V_{CE} = 5.0V, I_C = 100mA	10,000 10,000		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10mA, I_B = 0.01mA I_C = 100mA, I_B = 0.1mA		1.2 1.5	V V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C = 100mA, V_{CE} = 5.0V		2.0	V
Small Signal characteristics					
f_T	Current Gain Bandwidth Product	I_C = 10mA, V_{CE} = 5.0V, f = 100MHz	125		MHz
C_{obo}	Output Capacitance	V_{CB} = 1.0V, I_E = 0, f = 1.0MHz		8.0	pF

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

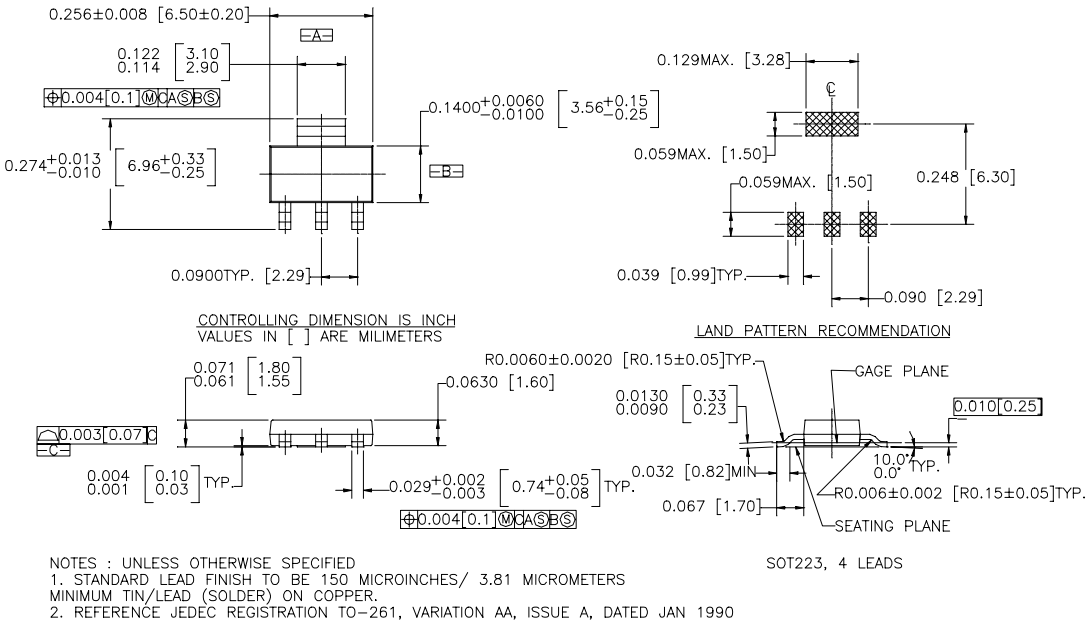
Thermal Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	1,000 8.0	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	125	°C/W

* Device mounted on FR-4PCB 36mm × 18mm × 1.5mm; mounting pad for the collector lead min. $6cm^2$

Mechanical Dimensions

SOT-223



NOTES : UNLESS OTHERWISE SPECIFIED
1. STANDARD LEAD FINISH TO BE 150 MICROINCHES/ 3.81 MICROMETERS MINIMUM TIN/LEAD (SOLDER) ON COPPER.
2. REFERENCE JEDEC REGISTRATION TO−261, VARIATION AA, ISSUE A, DATED JAN 1990

SOT223, 4 LEADS

Dimensions in Millimeters

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Rev. I15