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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD
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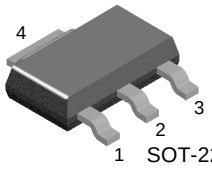
PZTA29
NPN Darlington Transistor

- 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%

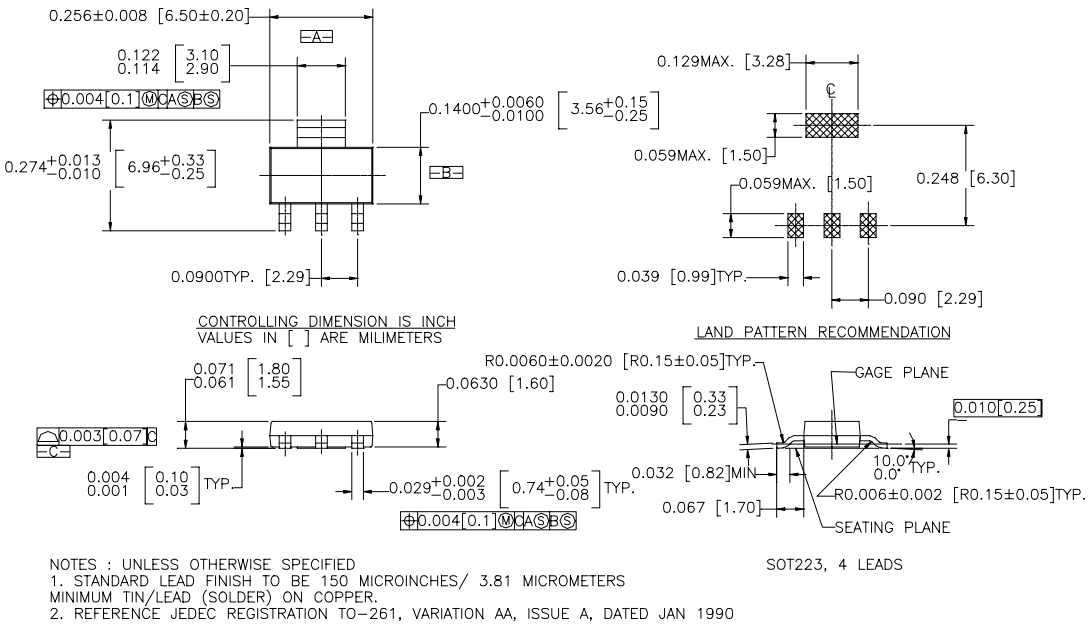
Thermal Characteristics T_a = 25°C unless otherwise noted

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

Dimensions in Millimeters

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Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I15

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