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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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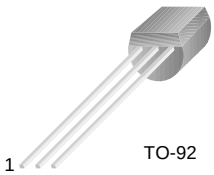
MPSA27/PZTA27

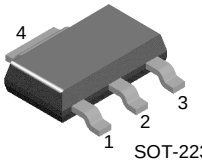
NPN General Purpose Amplifier

- This device is designed for applications requiring extremely high current gain at collector currents to 500mA.
- Sourced from process 03.
- See MPSA28 for characteristics.



TO-92

1. Emitter 2. Base 3. Collector



SOT-223

1. Base 2. Collector 3. Emitter

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

Symbol	Parameter	Value	Units
V_{CES}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	10	V
I_C	Collector current - Continuous	800	mA
T_J, T_{stg}	Operating and Storage Junction Temperature	-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 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.

Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	I_C = 100µA, V_{BE} = 0	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10µA, I_C = 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_C = 100µA, I_C = 0	10			V
I_{CBO}	Collector Cutoff Current	V_{CB} = 50V, I_E = 0			100	nA
I_{CES}	Collector Cutoff Current	V_{CE} = 50V, V_{BE} = 0			500	nA
I_{EBO}	Emitter Cutoff Current	V_{EB} = 10V, I_C = 0			100	nA
On Characteristics						
h_{FE}	DC Current Gain	I_C = 10mA, V_{CE} = 5.0V I_C = 100mA, V_{CE} = 5.0V	10000 10000			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 100mA, I_B = 0.1mA			1.5	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

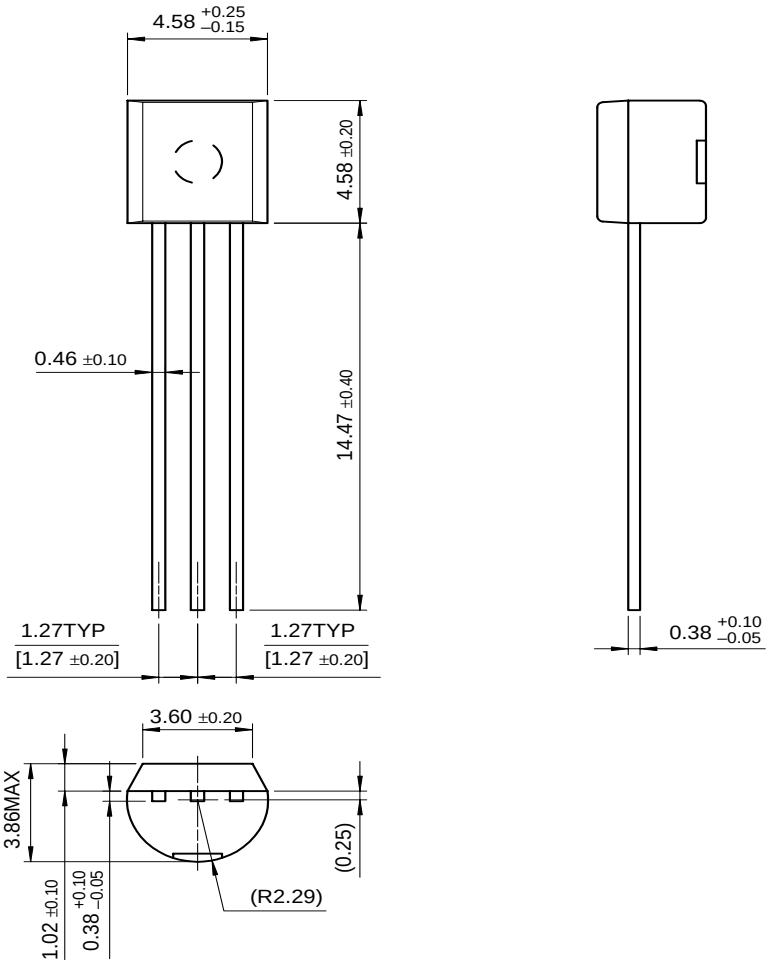
Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.		Units
		MPSA27	*PZTA27	
P_D	Total Device Dissipation Derate above 25°C	625 5.0	1000 8.0	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	125	°C/W

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

Package Dimensions

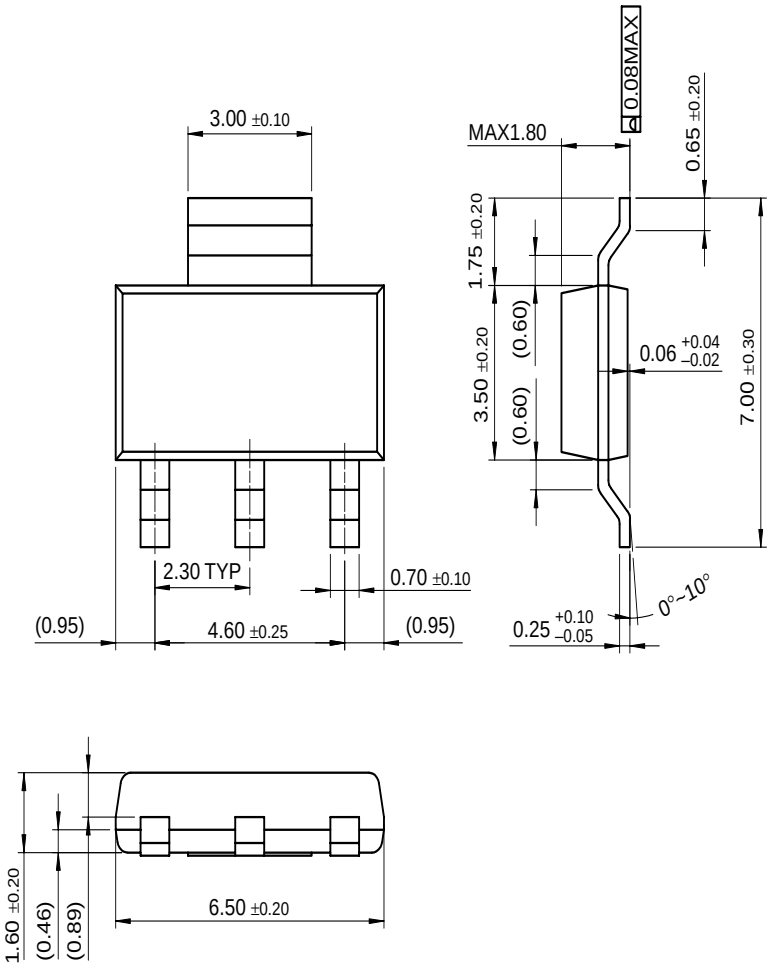
TO-92



Dimensions in Millimeters

Package Demensions (Continued)

SOT-223



Dimensions in Millimeters

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Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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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.
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