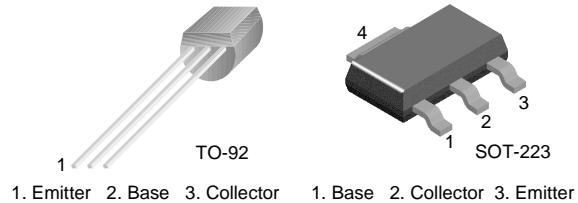


# MPSA27/PZTA27

## 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.



## Absolute Maximum Ratings\* $T_A=25^\circ\text{C}$ 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	$^\circ\text{C}$

\* 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 $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	$I_C = 100\mu\text{A}, V_{BE} = 0$	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}, I_E = 0$	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_C = 0$	10			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 50\text{V}, I_E = 0$			100	nA
$I_{CES}$	Collector Cutoff Current	$V_{CE} = 50\text{V}, V_{BE} = 0$			500	nA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 10\text{V}, I_C = 0$			100	nA
<b>On Characteristics</b>						
$h_{FE}$	DC Current Gain	$I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 100\text{mA}, V_{CE} = 5.0\text{V}$	10000 10000			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 0.1\text{mA}$			1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = 100\text{mA}, V_{CE} = 5.0\text{V}$			2.0	V
<b>Small Signal Characteristics</b>						
$f_T$	Current Gain Bandwidth Product	$I_C = 10\text{mA}, V_{CE} = 5.0\text{V},$ $f = 100\text{MHz}$	125			MHz

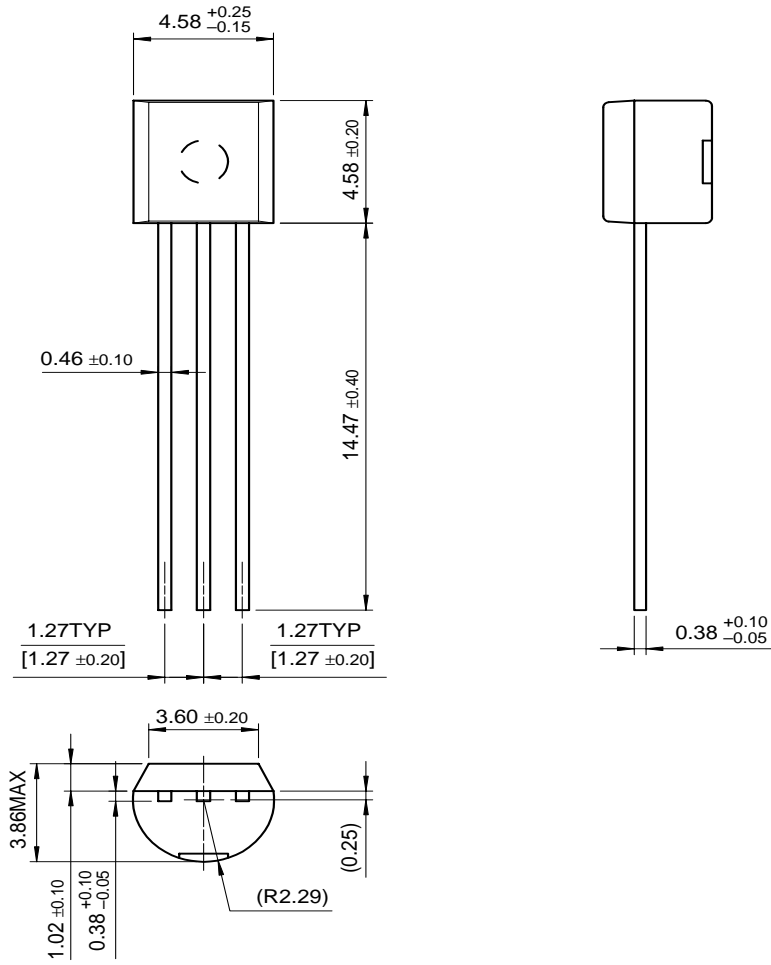
## Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

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

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

# Package Dimensions

## TO-92

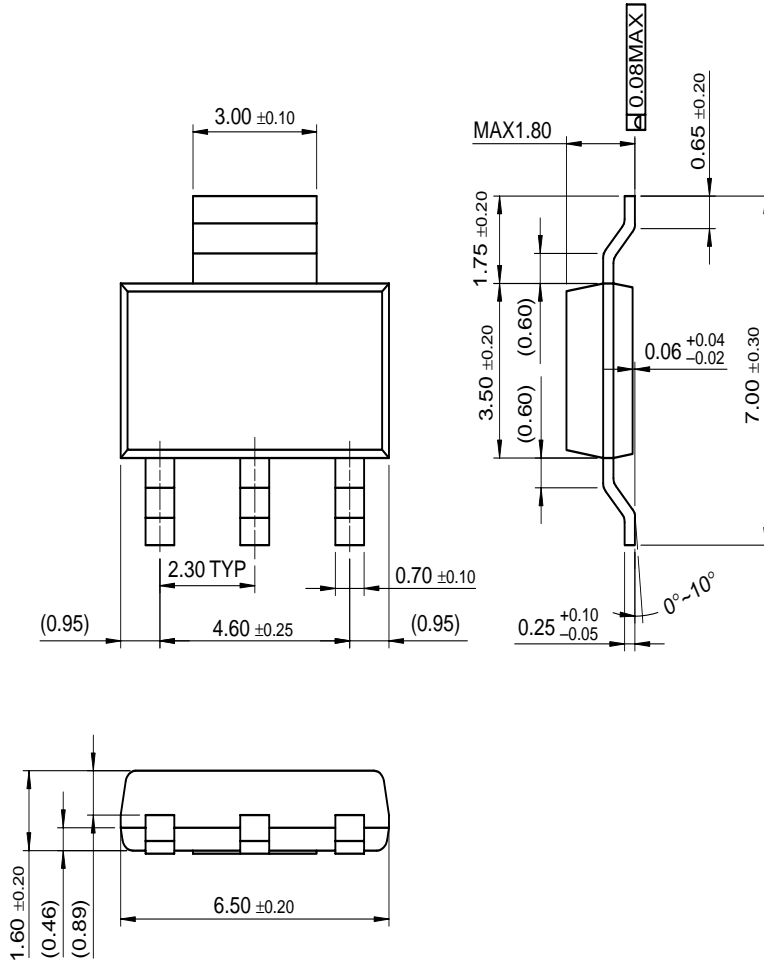


Dimensions in Millimeters

# Package Dimensions (Continued)

MPSA27/PZTA27

## SOT-223



Dimensions in Millimeters

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EcoSPARK <sup>™</sup>	GTO <sup>™</sup>	MSX <sup>™</sup>	QT Optoelectronics <sup>™</sup>	TinyLogic <sup>™</sup>
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## PRODUCT STATUS DEFINITIONS

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Datasheet Identification	Product Status	Definition
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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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