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Fairchild Semiconductor
PN3568

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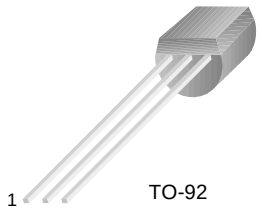
FAIRCHILD SEMICONDUCTOR®

PN3568

NPN General Purpose Amplifier

- This device is designed for general purpose, medium power amplifiers and switches requiring collector currents to 500mA.



TO-92

1. Emitter 2. Base 3. Collector

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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - Continuous	1.0	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	- 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 a 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.	Max.	Units
Off Characteristics					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	I_C = 30mA, I_B = 0	60		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 100μA, I_E = 0	80		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	5.0		V
I_{CBO}	Collector Cut-off Current	V_{CB} = 40V, I_E = 0 V_{CB} = 40V, I_E = 0, T_A = 75°C		50 5.0	nA μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 4V, I_C = 0		25	nA
On Characteristics					
h_{FE}	DC Current Gain	V_{CE} = 1.0V, I_C = 30mA V_{CE} = 1.0V, I_C = 150mA	40 40	 120	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 150mA, I_B = 15mA		0.25	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = 1.0V, I_C = 150mA		1.1	V
Small Signal Characteristics					
C_{ob}	Output Capacitance	V_{CB} = 10V, f = 1.0MHz		20	pF
C_{ib}	Input Capacitance	V_{EB} = 0.5V, f = 1.0MHz		80	
h_{fe}	Small Signal Current Gain	I_C = 50mA, V_{CE} = 10V, f = 20MHz	3.0	30	

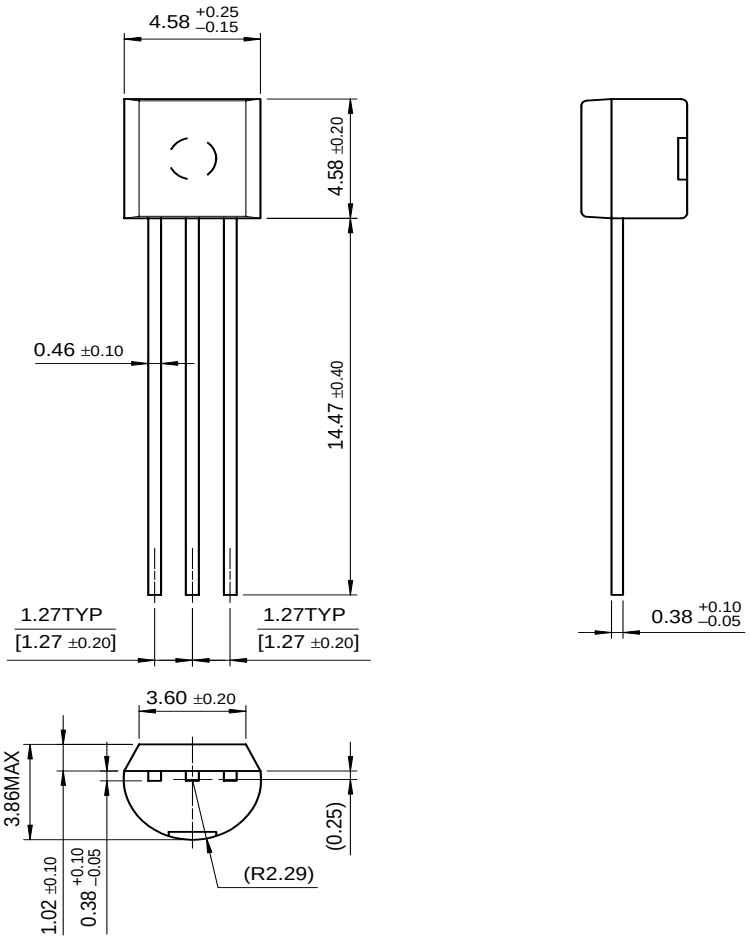
* Pulse Test: Pulse Width ≤ 300ms, Duty Cycle ≤ 2.0%

Thermal Characteristics T_A=25°C unless otherwise noted

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

Package Dimensions

TO-92



Dimensions in Millimeters

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CoolFET™	FASTr™	MicroFET™	PowerTrench®	SuperSOT™-6
CROSSVOLT™	FRFET™	MicroPak™	QFET™	SuperSOT™-8
DOME™	GlobalOptoisolator™	MICROWIRE™	QS™	SyncFET™
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E²CMOS™	HiSeC™	MSXPro™	Quiet Series™	TruTranslation™
EnSigna™	I²C™	OCX™	RapidConfigure™	UHC™
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The Power Franchise™		OPTOLOGIC®	SILENT SWITCHER®	VCX™
Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Definition of Terms

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.
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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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