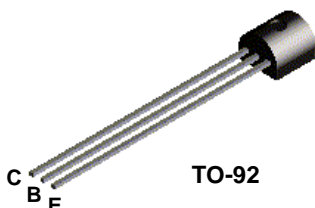


## 2N4125



### PNP General Purpose Amplifier

This device is designed for use as general purpose amplifiers and switches requiring collector currents of 10  $\mu$ A to 100 mA.

#### Absolute Maximum Ratings\* TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>CB0</sub>	Collector-Base Voltage	30	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Collector Current - Continuous	200	mA
T <sub>J</sub> , T <sub>stg</sub>	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 state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

#### Thermal Characteristics TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		2N4125	
P <sub>D</sub>	Total Device Dissipation	625	mW
	Derate above 25°C	5.0	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	83.3	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	200	°C/W

# PNP General Purpose Amplifier

(continued)

2N4125

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
--------	-----------	-----------------	-----	-----	-------

### OFF CHARACTERISTICS

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 1.0 \text{ mA}, I_B = 0$	30		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \text{ } \mu\text{A}, I_E = 0$	30		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \text{ } \mu\text{A}, I_C = 0$	4.0		V
$I_{CBO}$	Collector-Cutoff Current	$V_{CB} = 20 \text{ V}, I_E = 0$		50	nA
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 3.0 \text{ V}, I_C = 0$		50	nA

### ON CHARACTERISTICS\*

$h_{FE}$	DC Current Gain	$V_{CE} = 1.0 \text{ V}, I_C = 2.0 \text{ mA}$ $V_{CE} = 1.0 \text{ V}, I_C = 50 \text{ mA}$	50 25	150	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$		0.4	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$		0.95	V

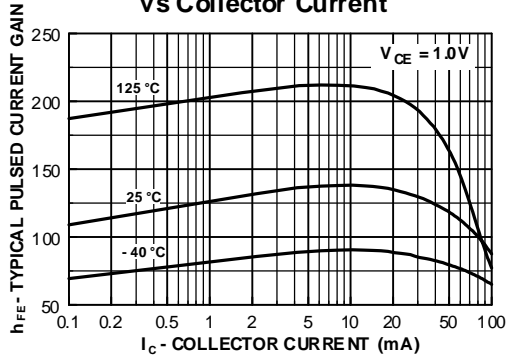
### SMALL SIGNAL CHARACTERISTICS

$C_{ob}$	Output Capacitance	$V_{CB} = 5.0 \text{ V}, f = 100 \text{ kHz}$		4.5	pF
$C_{ib}$	Input Capacitance	$V_{BE} = 0.5 \text{ V}, f = 100 \text{ kHz}$		10	pF
$h_{fe}$	Small-Signal Current Gain	$I_C = 2.0 \text{ mA}, V_{CE} = 10 \text{ V},$ $f = 1.0 \text{ kHz}$ $I_C = 10 \text{ mA}, V_{CE} = 20 \text{ V},$ $f = 100 \text{ MHz}$	50 2.0	200	
NF	Noise Figure	$V_{CE} = 5.0 \text{ V}, I_C = 100 \text{ } \mu\text{A},$ $R_S = 1.0 \text{ k}\Omega,$ $f = 10 \text{ Hz to } 15.7 \text{ kHz},$		5.0	dB

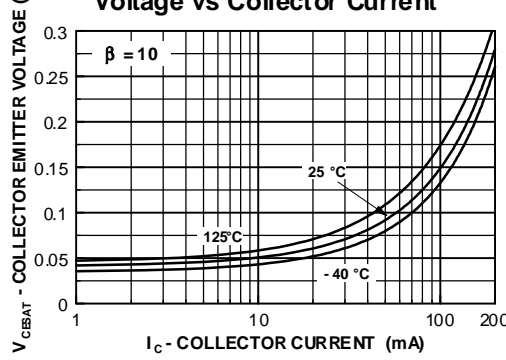
\* Pulse Test: Pulse Width  $\leq 300 \text{ } \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

Typical Characteristics

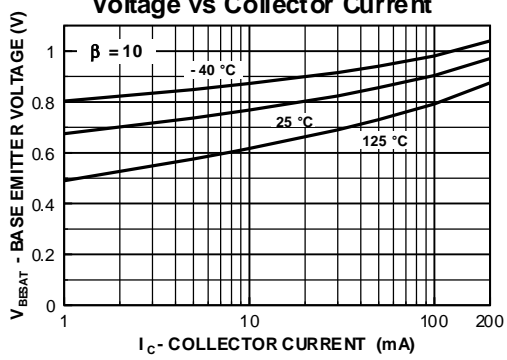
Typical Pulsed Current Gain vs Collector Current



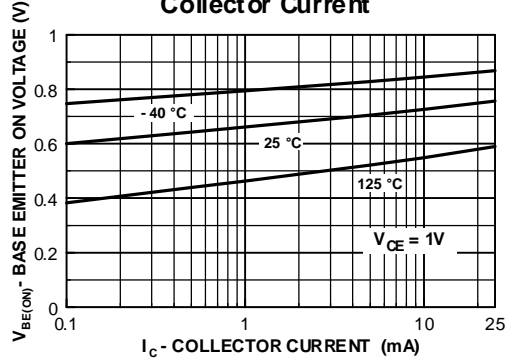
Collector-Emitter Saturation Voltage vs Collector Current



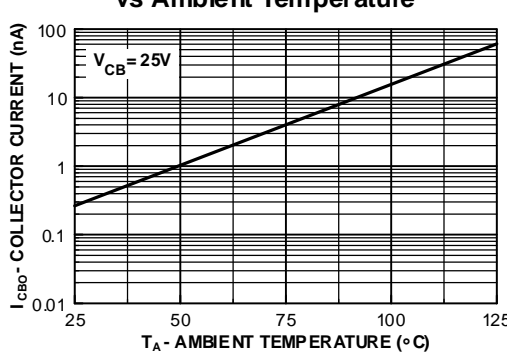
Base-Emitter Saturation Voltage vs Collector Current



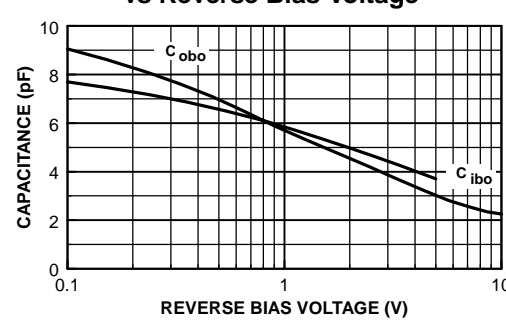
Base Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature

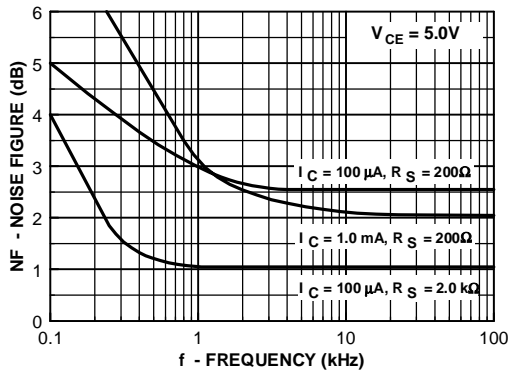


Common-Base Open Circuit Input and Output Capacitance vs Reverse Bias Voltage

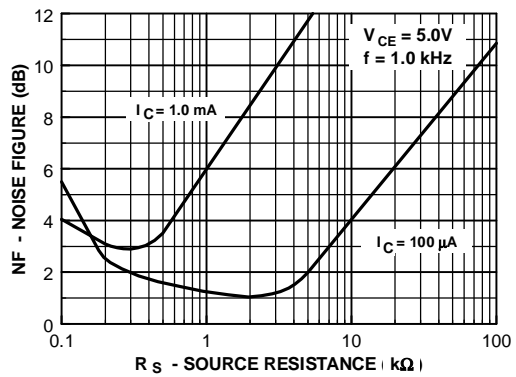


Typical Characteristics (continued)

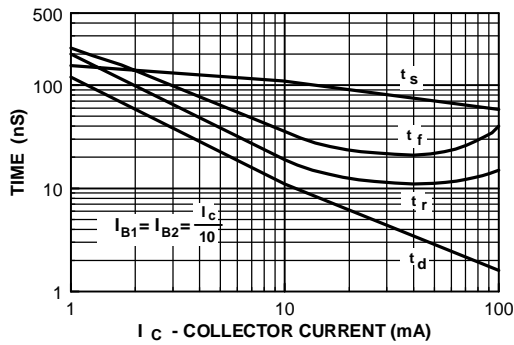
Noise Figure vs Frequency



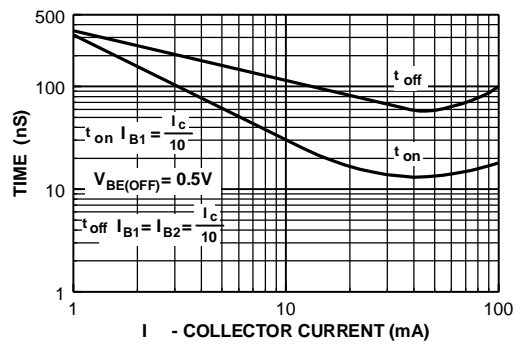
Noise Figure vs Source Resistance



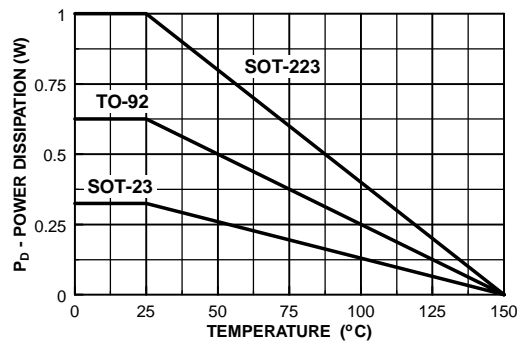
Switching Times vs Collector Current



Turn On and Turn Off Times vs Collector Current

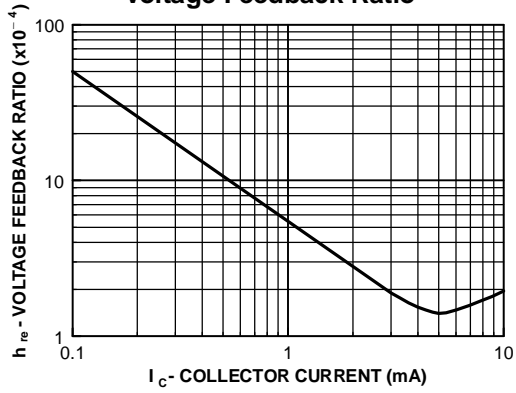


Power Dissipation vs Ambient Temperature

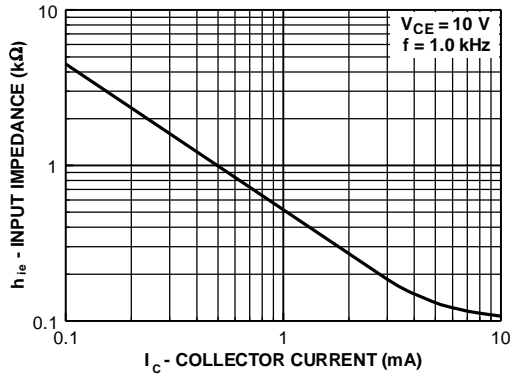


Typical Characteristics (continued)

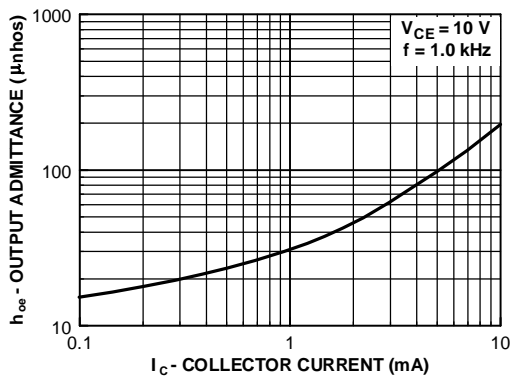
Voltage Feedback Ratio



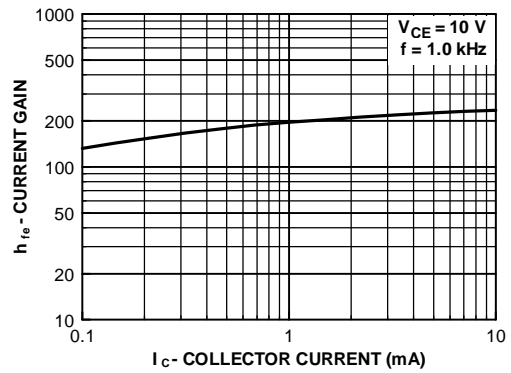
Input Impedance



Output Admittance



Current Gain



## TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	FASTr™	PowerTrench®	SyncFET™
Bottomless™	GlobalOptoisolator™	QFET™	TinyLogic™
CoolFET™	GTO™	QS™	UHC™
CROSSVOLT™	HiSeC™	QT Optoelectronics™	VCX™
DOME™	ISOPLANAR™	Quiet Series™	
E <sup>2</sup> CMOS™	MICROWIRE™	SILENT SWITCHER®	
EnSigna™	OPTOLOGIC™	SMART START™	
FACT™	OPTOPLANAR™	SuperSOT™-3	
FACT Quiet Series™	PACMAN™	SuperSOT™-6	
FAST®	POP™	SuperSOT™-8	

## DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

## LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
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.

## PRODUCT STATUS DEFINITIONS

### 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.
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.

Home >> Find products >>

## 2N4125

PNP General Purpose Amplifier

### Contents

- [General description](#)
- [Product status/pricing/packageing](#)
- [Order Samples](#)
- [Models](#)

•[Qualification Support](#)

### General description

This device is designed for use as general purpose amplifiers and switches requiring collector currents of 10  $\mu$ A to 100 mA.

[back to top](#)

### Product status/pricing/packageing

**BUY**

**BUY**

### Datasheet

[Download this datasheet](#)



[e-mail this datasheet](#)



### This page

[Print version](#)

### Related Links

[Request samples](#)

[How to order products](#)

[Product Change Notices \(PCNs\)](#)



[Support](#)

[Sales support](#)

[Quality and reliability](#)

[Design center](#)

Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
2N4125BU	Full Production	Full Production	\$0.025	<a href="#">TO-92</a>	3	BULK	Line 1: 2N Line 2: 4125 Line 3: -&3
2N4125TA	Full Production	Full Production	\$0.025	<a href="#">TO-92</a>	3	AMMO	Line 1: 2N Line 2: 4125 Line 3: -&3
2N4125TAR	Full Production	Full Production	\$0.025	<a href="#">TO-92</a>	3	AMMO	Line 1: 2N Line 2: 4125 Line 3: -&3
2N4125TF	Full Production		\$0.025	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: 2N Line 2: 4125 Line 3: -&3

		 Full Production					
2N4125TFR	Full Production	 Full Production	\$0.025	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: 2N Line 2: 4125 Line 3: -&3

\* Fairchild 1,000 piece Budgetary Pricing

\*\* A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please contact a [Fairchild distributor](#) to obtain samples



Indicates product with Pb-free second-level interconnect. For more information [click here](#).

Package marking information for product 2N4125 is available. [Click here for more information](#).

[back to top](#)

### Models

Package & leads	Condition	Temperature range	Software version	Revision date
<b>PSPICE</b>				
TO-92-3	<a href="#">Electrical</a>	25°C	N/A	N/A

[back to top](#)

### Qualification Support

Click on a product for detailed qualification data

Product
<a href="#">2N4125BU</a>
<a href="#">2N4125TA</a>
<a href="#">2N4125TAR</a>
<a href="#">2N4125TF</a>
<a href="#">2N4125TFR</a>

[back to top](#)



