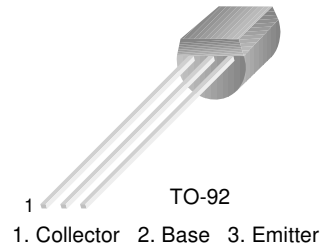


## BC307/308/309

### Switching and Amplifier Applications

- Low Noise: BC309



### PNP Epitaxial Silicon Transistor

#### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CES}$	Collector-Emitter Voltage		
	: BC307	-50	V
	: BC308/309	-30	V
$V_{CEO}$	Collector-Emitter Voltage		
	: BC307	-45	V
	: BC308/309	-25	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current (DC)	-100	mA
$P_C$	Collector Power Dissipation	500	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

**Electrical Characteristics**  $T_a=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage : BC307 : BC308/309	$I_C = -2\text{mA}, I_B = 0$	-45 -25			V V
$BV_{CES}$	Collector-Emitter Breakdown Voltage : BC307 : BC308/309	$I_C = -10\mu\text{A}, V_{BE} = 0$	-50 -30			V V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}, I_C = 0$	-5			V
$I_{CES}$	Collector Cut-off Current : BC307 : BC308/309	$V_{CE} = -45\text{V}, V_{BE} = 0$ $V_{CE} = -25\text{V}, V_{BE} = 0$		-2 -2	-15 -15	nA nA
$h_{FE}$	DC Current Gain	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	120		800	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$		-0.5	-0.3	V V
$V_{BE}(\text{sat})$	Collector-Base Saturation Voltage	$I_C = -10\text{mA}, I_B = -0.5\text{mA}$ $I_C = -100\text{mA}, I_B = -5\text{mA}$		-0.7 -0.85		V V
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE} = -5\text{V}, I_C = -2\text{mA}$	-0.55	-0.62	-0.7	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 50\text{MHz}$		130		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$			6	pF
$C_{ib}$	Input Capacitance	$V_{EB} = -0.5\text{V}, I_C = 0, f = 1\text{MHz}$		12		pF
NF	Noise Figure : BC307/308 : BC309 : BC309	$V_{CE} = -5\text{V}, I_C = -0.2\text{mA},$ $R_G = 2\text{K}\Omega, f = 1\text{KHz}$ $V_{CE} = -5\text{V}, I_C = -0.2\text{mA}$ $R_G = 2\text{K}\Omega, f = 30\sim 15\text{KHz}$		2	10 4 4	dB dB dB

 **$h_{FE}$  Classification**

Classification	A	B	C
$h_{FE}$	120 ~ 220	180 ~ 460	380 ~ 800

# Typical Characteristics

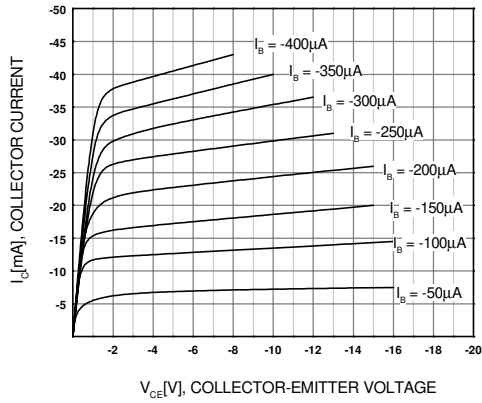


Figure 1. Static Characteristic

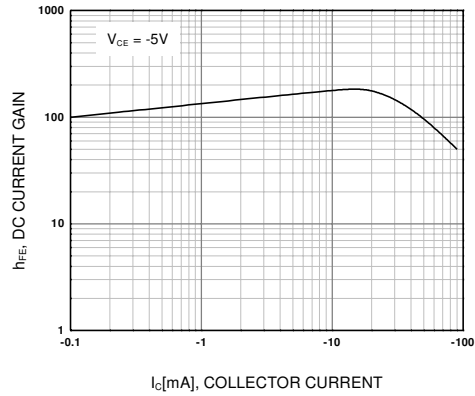


Figure 2. DC current Gain

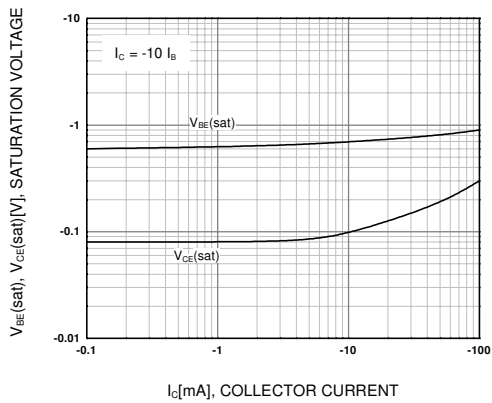


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

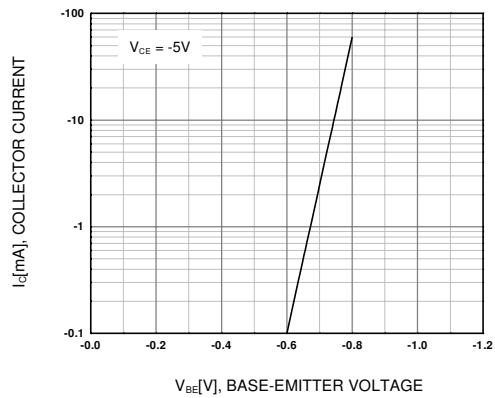


Figure 4. Base-Emitter Capacitance

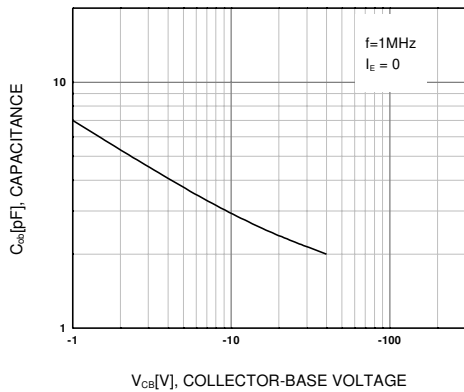


Figure 5. Collector Output Capacitance

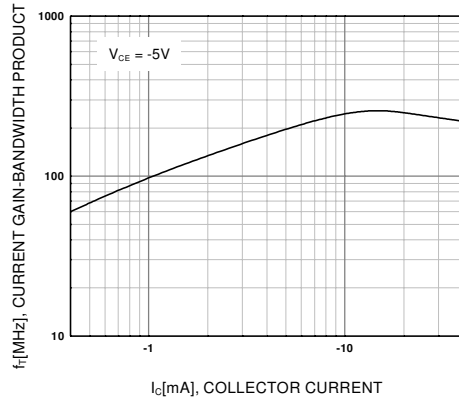
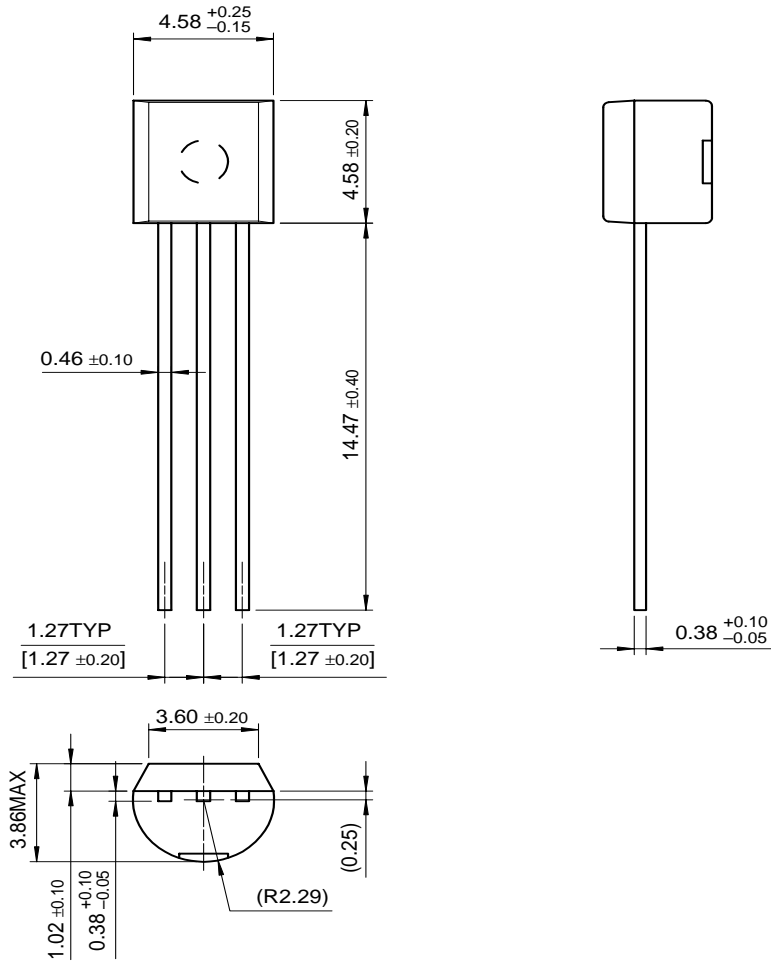


Figure 6. Current Gain Bandwidth Product

# Package Dimensions

BC307/308/309

## TO-92



Dimensions in Millimeters

## 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.

ACE <sup>™</sup>	FACT <sup>™</sup>	ImpliedDisconnect <sup>™</sup>	PACMAN <sup>™</sup>	SPM <sup>™</sup>
ActiveArray <sup>™</sup>	FACT Quiet series <sup>™</sup>	ISOPLANAR <sup>™</sup>	POP <sup>™</sup>	Stealth <sup>™</sup>
Bottomless <sup>™</sup>	FAST <sup>®</sup>	LittleFET <sup>™</sup>	Power247 <sup>™</sup>	SuperSOT <sup>™</sup> -3
CoolFET <sup>™</sup>	FAST <sup>™</sup>	MicroFET <sup>™</sup>	PowerTrench <sup>®</sup>	SuperSOT <sup>™</sup> -6
CROSSVOL <sup>™</sup>	FRFET <sup>™</sup>	MicroPak <sup>™</sup>	QFET <sup>™</sup>	SuperSOT <sup>™</sup> -8
DOME <sup>™</sup>	GlobalOptoisolator <sup>™</sup>	MICROWIRE <sup>™</sup>	QS <sup>™</sup>	SyncFET <sup>™</sup>
EcoSPARK <sup>™</sup>	GTO <sup>™</sup>	MSX <sup>™</sup>	QT Optoelectronics <sup>™</sup>	TinyLogic <sup>™</sup>
E <sup>2</sup> CMOS <sup>™</sup>	HiSeC <sup>™</sup>	MSXPro <sup>™</sup>	Quiet Series <sup>™</sup>	TruTranslation <sup>™</sup>
EnSigna <sup>™</sup>	I <sup>2</sup> C <sup>™</sup>	OCX <sup>™</sup>	RapidConfigure <sup>™</sup>	UHC <sup>™</sup>
Across the board. Around the world. <sup>™</sup>		OCXPro <sup>™</sup>	RapidConnect <sup>™</sup>	UltraFET <sup>®</sup>
The Power Franchise <sup>™</sup>		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER <sup>®</sup>	VCX <sup>™</sup>
Programmable Active Droop <sup>™</sup>		OPTOPLANAR <sup>™</sup>	SMART START <sup>™</sup>	

## 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 >>

## BC308

PNP Epitaxial Silicon Transistor

### Contents

- [Features](#)
- [Product status/pricing/packageing](#)
- [Order Samples](#)
- [Qualification Support](#)

### Features

#### Switching and Amplifier Applications

- Low Noise: BC309

[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**
BC308	Full Production	Full Production	\$0.061	<a href="#">TO-92</a>	3	BULK	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code) &3 (3-Digit Date Code) Line 2: BC308
BC308A	Full Production	Full Production	\$0.062	<a href="#">TO-92</a>	3	BULK	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code) &3 (3-Digit Date Code) Line 2: BC Line 3: 308A
BC308ABU	Full Production	Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC308 Line 2: A Line 3: -&3
BC308ATA	Full Production		\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC308 Line 2: A Line 3: -&3

		 Full Production					
BC308ATF	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC308 Line 2: A Line 3: -&3
BC308ATFR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC308 Line 2: A Line 3: -&3
BC308BBU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC308 Line 2: B Line 3: -&3
BC308BTA	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC308 Line 2: B Line 3: -&3
BC308BU	Full Production	 Full Production	\$0.0275	<a href="#">TO-92</a>	3	BULK	Line 1: BC308 Line 3: -&3
BC308C	Full Production	 Full Production	\$0.06	<a href="#">TO-92</a>	3	BULK	Line 1: <b>\$Y</b> (Fairchild logo) & <b>Z</b> (Asm. Plant Code) & <b>3</b> (3-Digit Date Code) Line 2: BC Line 3: 308C
BC308CBU	Full Production	 Full Production	\$0.0275	<a href="#">TO-92</a>	3	BULK	Line 1: BC308 Line 2: C Line 3: -&3
BC308TA	Full Production	 Full Production	\$0.0275	<a href="#">TO-92</a>	3	AMMO	Line 1: BC308 Line 3: -&3
BC308TAR	Full Production	 Full Production	\$0.0275	<a href="#">TO-92</a>	3	AMMO	Line 1: BC308 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 BC308 is available. [Click here for more information](#).

[back to top](#)

### Qualification Support

Click on a product for detailed qualification data

Product
<a href="#">BC308</a>
<a href="#">BC308A</a>
<a href="#">BC308ABU</a>
<a href="#">BC308ATA</a>
<a href="#">BC308ATF</a>
<a href="#">BC308ATFR</a>
<a href="#">BC308BBU</a>
<a href="#">BC308BTA</a>
<a href="#">BC308BU</a>
<a href="#">BC308C</a>
<a href="#">BC308CBU</a>
<a href="#">BC308TA</a>
<a href="#">BC308TAR</a>

[back to top](#)

© 2007 Fairchild Semiconductor

