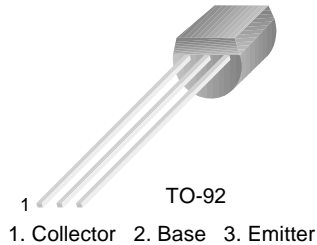


## BC546/547/548/549/550

### Switching and Applications

- High Voltage: BC546,  $V_{CE0}=65V$
- Low Noise: BC549, BC550
- Complement to BC556 ... BC560



### NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage : BC546	80	V
	: BC547/550	50	V
	: BC548/549	30	V
$V_{CEO}$	Collector-Emitter Voltage : BC546	65	V
	: BC547/550	45	V
	: BC548/549	30	V
$V_{EBO}$	Emitter-Base Voltage : BC546/547	6	V
	: BC548/549/550	5	V
$I_C$	Collector Current (DC)	100	mA
$P_C$	Collector Power Dissipation	500	mW
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature	-65 ~ 150	$^\circ C$

#### Electrical Characteristics $T_a=25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=30V, I_E=0$			15	nA
$h_{FE}$	DC Current Gain	$V_{CE}=5V, I_C=2mA$	110		800	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=0.5mA$		90	250	mV
		$I_C=100mA, I_B=5mA$		200	600	mV
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10mA, I_B=0.5mA$		700		mV
		$I_C=100mA, I_B=5mA$		900		mV
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE}=5V, I_C=2mA$	580	660	700	mV
		$V_{CE}=5V, I_C=10mA$			720	mV
$f_T$	Current Gain Bandwidth Product	$V_{CE}=5V, I_C=10mA, f=100MHz$		300		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10V, I_E=0, f=1MHz$		3.5	6	pF
$C_{ib}$	Input Capacitance	$V_{EB}=0.5V, I_C=0, f=1MHz$		9		pF
NF	Noise Figure	: BC546/547/548	$V_{CE}=5V, I_C=200\mu A$	2	10	dB
		: BC549/550	$f=1KHz, R_G=2K\Omega$	1.2	4	dB
		: BC549	$V_{CE}=5V, I_C=200\mu A$	1.4	4	dB
		: BC550	$R_G=2K\Omega, f=30\sim 15000MHz$	1.4	3	dB

### $h_{FE}$ Classification

Classification	A	B	C
$h_{FE}$	110 ~ 220	200 ~ 450	420 ~ 800

# Typical Characteristics

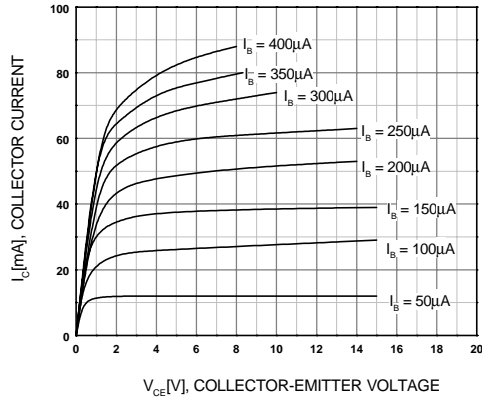


Figure 1. Static Characteristic

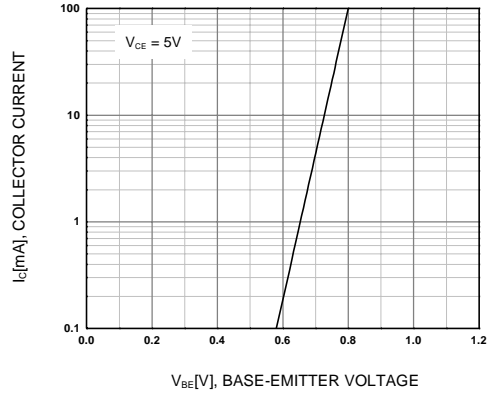


Figure 2. Transfer Characteristic

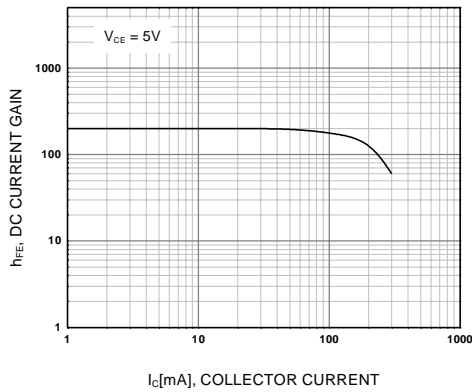


Figure 3. DC current Gain

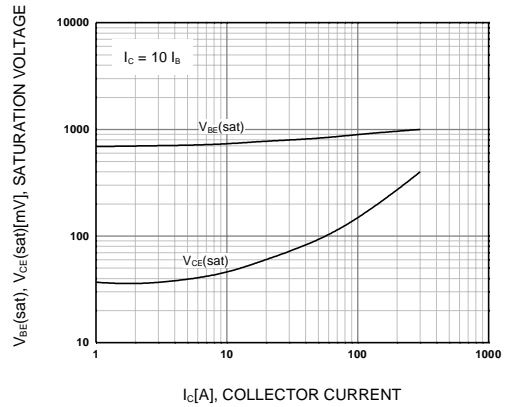


Figure 4. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

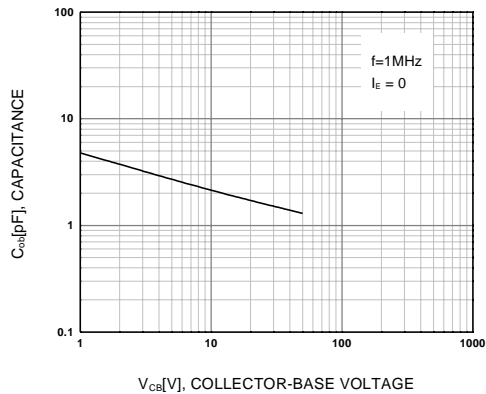


Figure 5. Output Capacitance

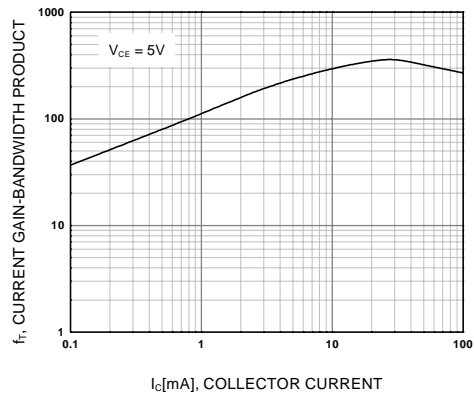
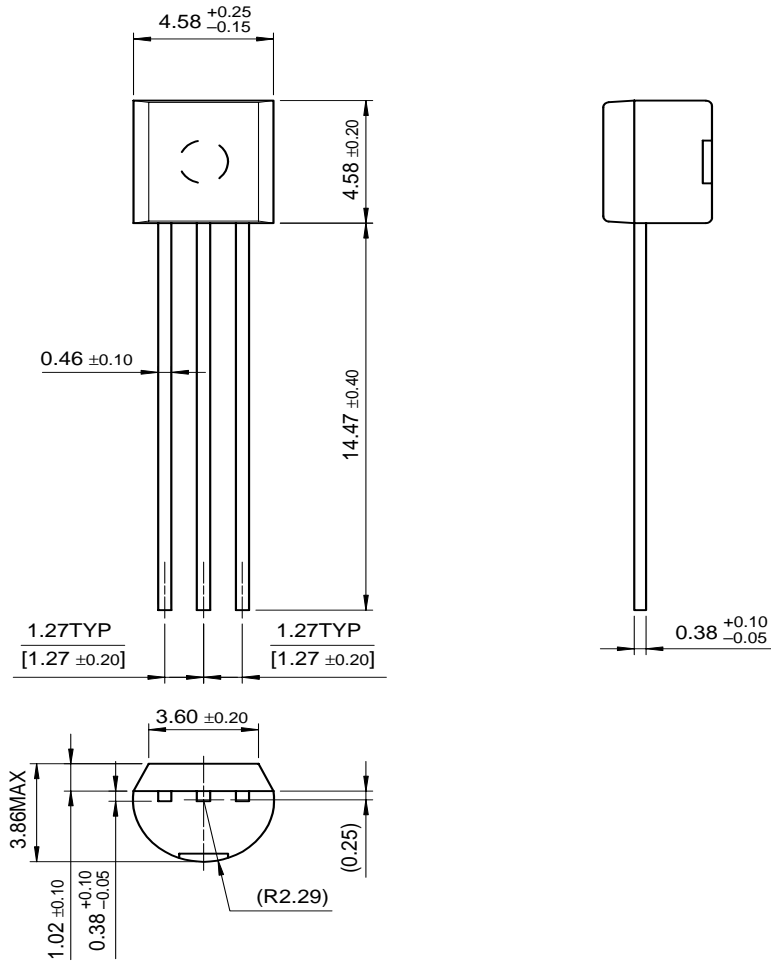


Figure 6. Current Gain Bandwidth Product

# Package Dimensions

## TO-92



Dimensions in Millimeters

BC546/547/548/549/550

## 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
CROSSVOLT <sup>™</sup>	FRFET <sup>™</sup>	MicroPak <sup>™</sup>	QFET <sup>™</sup>	SuperSOT <sup>™</sup> -8
DOMET <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.



BC549ATA	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC549 Line 2: A Line 3: -&3
BC549B	Full Production	 Full Production	\$0.0473	<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: 549B
BC549BBU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC549 Line 2: B Line 3: -&3
BC549BTA	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC549 Line 2: B Line 3: -&3
BC549BTAR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC549 Line 2: B Line 3: -&3
BC549BTF	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC549 Line 2: B Line 3: -&3
BC549BTFR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC549 Line 2: B Line 3: -&3
BC549BU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC549 Line 3: -&3
BC549C	Full Production	 Full Production	\$0.0473	<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: 549C
BC549CBU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC549 Line 2: C Line 3: -&3
BC549CTA	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC549 Line 2: C Line 3: -&3

BC549CTF	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC549 Line 2: C Line 3: -&3
BC549CTFR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC549 Line 2: C Line 3: -&3
BC549TAR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC549 Line 3: -&3
BC549TF	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC549 Line 3: -&3
BC549TFR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	TAPE REEL	Line 1: BC549 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 BC549 is available. [Click here for more information](#).

[back to top](#)

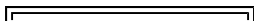
### Models

Package & leads	Condition	Temperature range	Software version	Revision date
<b>PSPICE</b>				
TO-92-3	<a href="#">Electrical/Thermal</a>	-25°C to 100°C	9.2	Apr 12, 2001

[back to top](#)

### Qualification Support

Click on a product for detailed qualification data



Product
<a href="#">BC549</a>
<a href="#">BC549ABU</a>
<a href="#">BC549ATA</a>
<a href="#">BC549B</a>
<a href="#">BC549BBU</a>
<a href="#">BC549BTA</a>
<a href="#">BC549BTAR</a>
<a href="#">BC549BTF</a>
<a href="#">BC549BTFR</a>
<a href="#">BC549BU</a>
<a href="#">BC549C</a>
<a href="#">BC549CBU</a>
<a href="#">BC549CTA</a>
<a href="#">BC549CTF</a>
<a href="#">BC549CTFR</a>
<a href="#">BC549TAR</a>
<a href="#">BC549TF</a>
<a href="#">BC549TFR</a>

[back to top](#)

© 2007 Fairchild Semiconductor

