

## 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



BC546/547/548/549/550

Dimensions in Millimeters

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## 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.
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BC550ATA	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC550 Line 2: A Line 3: -&3
BC550B	Full Production	 Full Production	\$0.0473	<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: 550B
BC550BBU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC550 Line 2: B Line 3: -&3
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BC550BTAR	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	AMMO	Line 1: BC550 Line 2: B Line 3: -&3
BC550BU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC550 Line 3: -&3
BC550CBU	Full Production	 Full Production	\$0.0238	<a href="#">TO-92</a>	3	BULK	Line 1: BC550 Line 2: C Line 3: -&3
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\* 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 BC550 is available. [Click here for more information](#).

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## 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

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### Qualification Support

Click on a product for detailed qualification data

Product
<a href="#">BC550</a>
<a href="#">BC550ABU</a>
<a href="#">BC550ATA</a>
<a href="#">BC550B</a>
<a href="#">BC550BBU</a>
<a href="#">BC550BTA</a>
<a href="#">BC550BTAR</a>
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