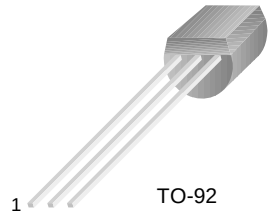
FAIRCHILD
SEMICONDUCTOR®

BC307/308/309

Switching and Amplifier Applications

- Low Noise: BC309



TO-92

1. Collector 2. Base 3. Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°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	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics T_a=25°C unless otherwise noted

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

h_{FE} Classification

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

Typical Characteristics

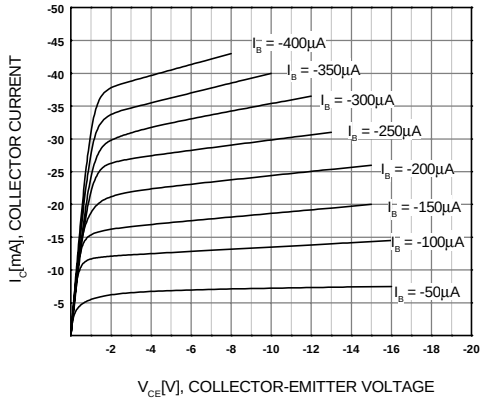


Figure 1. Static Characteristic

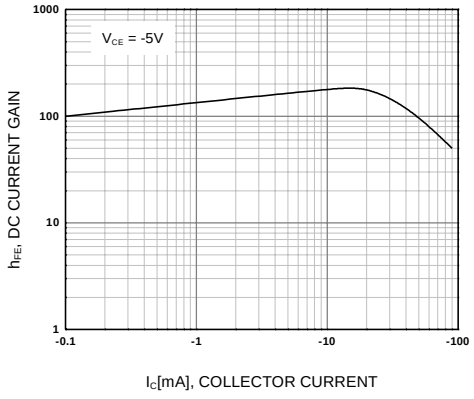


Figure 2. DC current Gain

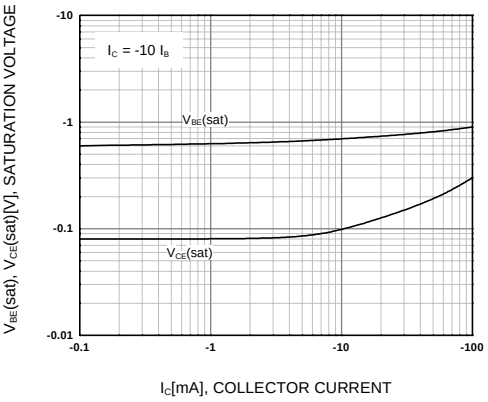


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

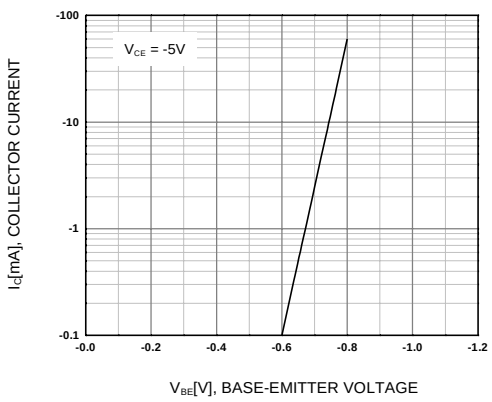


Figure 4. Base-Emitter Capacitance

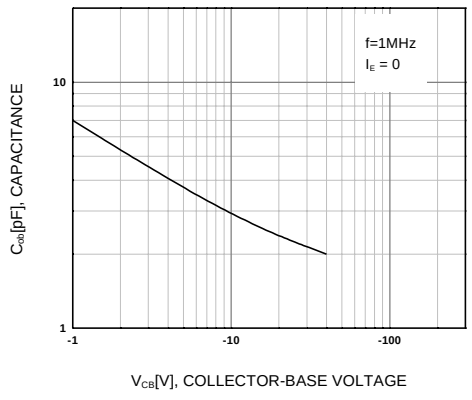


Figure 5. Collector Output Capacitance

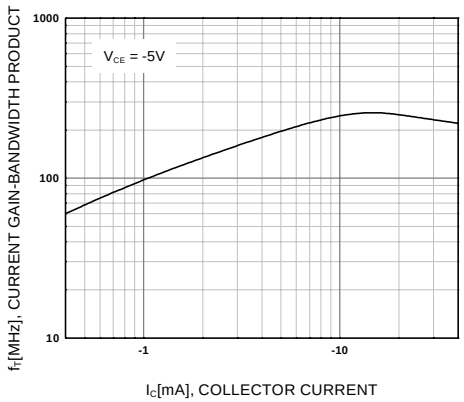
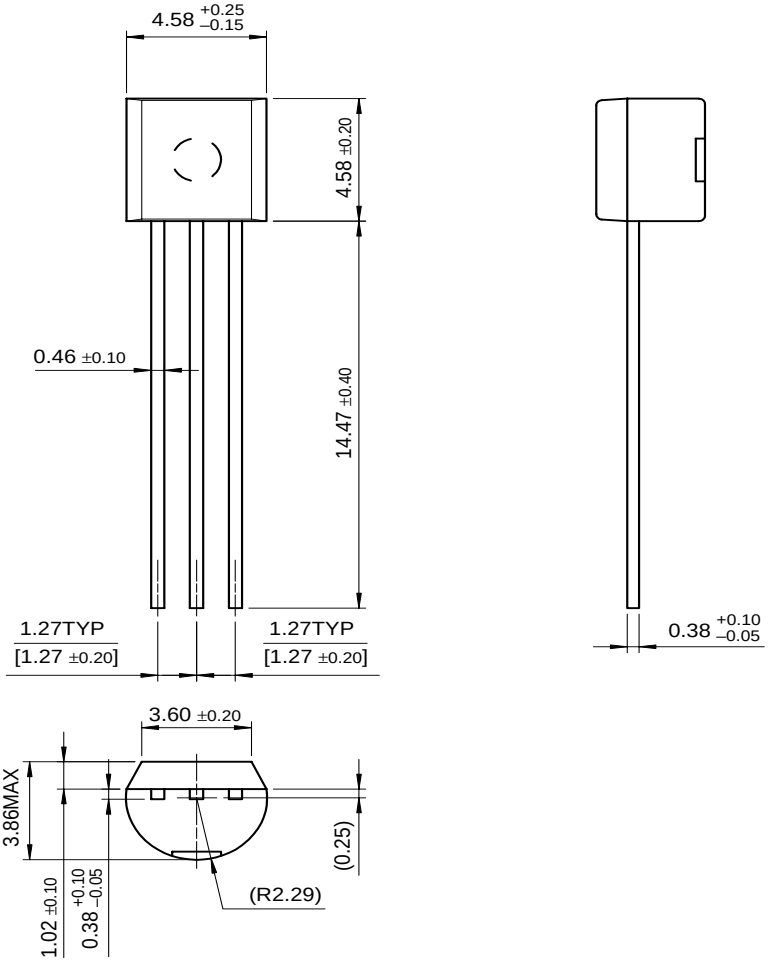


Figure 6. Current Gain Bandwidth Product

Package Dimensions

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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Programmable Active Droop™		OPTOPLANAR™	SMART START™	

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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.
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.

BC307

PNP Epitaxial Silicon Transistor

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BUY

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- Support
- Sales support
- Quality and reliability
- Design center

Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
BC307	Full Production	Full Production	$0.061	TO-92	3	BULK	Line 1: **$Y** (Fairchild logo) &**Z** (Asm. Plant Code) &**3** (3-Digit Date Code) Line 2: BC Line 3: 307
BC307ABU	Full Production	Full Production	$0.0238	TO-92	3	BULK	Line 1: BC307 Line 2: A Line 3: -&3
BC307ATA	Full Production	Full Production	$0.0238	TO-92	3	AMMO	Line 1: BC307 Line 2: A Line 3: -&3
BC307B	Full Production		$0.061	TO-92	3	BULK	Line 1: **$Y** (Fairchild logo) &**Z** (Asm. Plant Code)

		Full Production					&**3** (3-Digit Date Code) Line 2: BC Line 3: 307B
BC307BBU	Full Production	Full Production	$0.0238	TO-92	3	BULK	Line 1: BC307 Line 2: B Line 3: -&3
BC307BTA	Full Production	Full Production	$0.0238	TO-92	3	AMMO	Line 1: BC307 Line 2: B Line 3: -&3
BC307BTF	Full Production	Full Production	$0.0238	TO-92	3	TAPE REEL	Line 1: BC307 Line 2: B Line 3: -&3
BC307BTFR	Full Production	Full Production	$0.0238	TO-92	3	TAPE REEL	Line 1: BC307 Line 2: B Line 3: -&3
BC307BU	Full Production	Full Production	$0.0238	TO-92	3	BULK	Line 1: BC307 Line 2: B Line 3: -&3
BC307CBU	Full Production	Full Production	$0.0238	TO-92	3	BULK	Line 1: BC307 Line 2: C 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 BC307 is available. Click here for more information .

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Qualification Support

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Product
BC307

BC307ABU
BC307ATA
BC307B
BC307BBU
BC307BTA
BC307BTF
BC307BTFR
BC307BU
BC307CBU

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