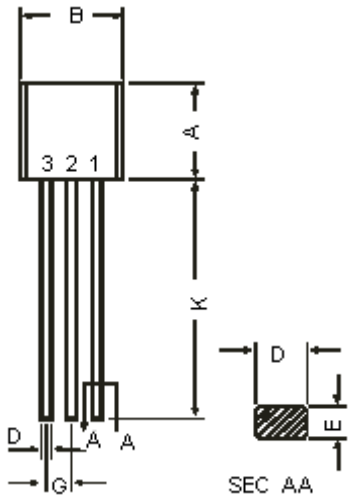
BC547B

General Purpose Transistor

Feature:

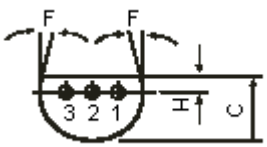
- NPN general purpose transistors, especially suited for use in driver stages of audio amplifiers, low noise input stages of tape recorders, HI-FI amplifiers, signal processing circuits of television receivers.

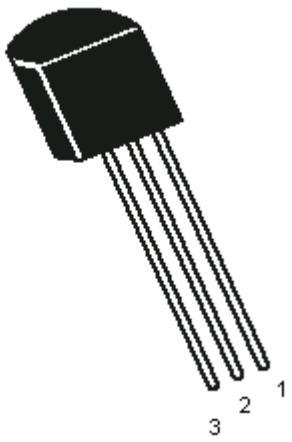
TO-92 Plastic Package



Dimensions	Minimum	Maximum
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5°	
G	1.14	1.40
H		1.53
K	12.70	-

Dimensions : Millimetres





Pin Configuration
1. Collector
2. Base
3. Emitter

Absolute Maximum Ratings (T_a = 25°C unless otherwise specified)

Parameters	Symbol	Value	Unit
Collector Emitter Voltage	V_{CEO}	45	V
Collector Emitter Voltage	V_{CES}	50	
Collector Base Voltage	V_{CBO}		
Emitter Base Voltage	V_{EBO}	6.0	
Collector Current Continuous Peak	I_C I_{CM}	100 200	mA
Base Current Peak	I_{BM}	200	
Emitter Current Peak	I_{EM}		
Power Dissipation at T_a = 25°C Derate above 25°C	P_{TA}	500 4.0	mW mW/°C
Storage Temperature	T_{stg}	-65 to +150	°C
Junction Temperature	T_j	150	
Thermal Resistance			
Junction to Ambient	$R_{th(j-a)}$	250	°C/W

Electrical Characteristics (T_a = 25°C unless otherwise specified)

Parameters	Symbol	Test Condition	Value	Unit
Collector Emitter Voltage	V_{CEO}	I_C = 1mA, I_B = 0	>45	V
Collector Base Voltage	V_{CBO}	I_C = 10µA, I_E = 0	>50	
Emitter Base Voltage	V_{EBO}	I_E = 10µA, I_C = 0	>6.0	
Collector Cut off Current	I_{CBO}	V_{CB} = 30V, I_E = 0 T_J = 150°C V_{CB} = 30V, I_E = 0	<50 <5.0	nA µA
	I_{CES}	V_{CE} = 50V, V_{BE} = 0 T_J = 125°C	<15	nA
Collector Cut off Current	I_{CES}	V_{CE} = 50V, V_{BE} = 0	<4.0	µA
DC Current Gain	h_{FE}	I_C = 2mA, V_{CE} = 5V	200	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5mA	<0.25 <0.60	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 10mA, I_B = 0.5mA I_C = 100mA, I_B = 5mA	Typical 0.70 Typical 0.90	
Base Emitter On Voltage	$V_{BE(on)}$	I_C = 2mA, V_{CE} = 5V I_C = 10mA, V_{CE} = 5V	0.55 - 0.70 <0.72	

Electrical Characteristics (T_a = 25°C unless otherwise specified)

Parameters	Symbol	Test Condition	Value	Unit
Dynamic Characteristics				
Transition Frequency	f_T	I_C = 10mA, V_{CE} = 5V f = 100MHz	Typical 300	MHz
Collector Output Capacitance	C_{cbo}	V_{CB} = 10V, f = 1MHz	<4.50	pF
Emitter Input Capacitance	C_{ib}	V_{EB} = 0.5V, f = 1MHz	Typical 9.0	
Noise Figure	NF	I_C = 0.2mA, V_{CE} = 5V R_s = 1kΩ, f = 200Hz	<10	dB
Small Signal Current Gain	h_{fe}	I_C = 2mA, V_{CE} = 5V	Typical 330	-
Input Impedance	h_{ie}		3.2 - 8.5	kΩ
Voltage Feedback Ratio	h_{re}		Typical 2.0	x'10-4
Output Impedance	h_{oe}		<60	µΩ

Specifications

V_{CEO} (V)	V_{CBO} maximum (V)	I_C (A)	h_{FE} minimum at I_C = 2mA	f_T (Typical) MHz	P_{tot} (mW)	Package	Part Number
45	50	0.1	200	300	625	TO-92	BC547B

BC547B

General Purpose Transistor

Notes:

International Sales Offices:

AUSTRALIA – Farnell InOne
Tel No: ++ 61 2 9645 8888
Fax No: ++ 61 2 9644 7898

FINLAND – Farnell InOne
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411

NETHERLANDS – Farnell InOne
Tel No: ++ 31 30 241 7373
Fax No: ++ 31 30 241 7333

SWITZERLAND – Farnell InOne
Tel No: ++ 41 1 204 64 64
Fax No: ++ 41 1 204 64 54

AUSTRIA – Farnell InOne
Tel No: ++ 43 662 2180 680
Fax No: ++ 43 662 2180 670

FRANCE – Farnell InOne
Tel No: ++ 33 474 68 99 99
Fax No: ++ 33 474 68 99 90

NEW ZEALAND – Farnell InOne
Tel No: ++ 64 9 357 0646
Fax No: ++ 64 9 357 0656

UK – Farnell InOne
Tel No: ++ 44 8701 200 200
Fax No: ++ 44 8701 200 201

BELGIUM – Farnell InOne
Tel No: ++ 32 3 475 2810
Fax No: ++ 32 3 227 3648

GERMANY – Farnell InOne
Tel No: ++ 49 89 61 39 39 39
Fax No: ++ 49 89 613 59 01

NORWAY – Farnell InOne
Tel No: ++ 45 44 53 66 66
Fax No: ++ 45 44 53 66 02

UK – BuckHickman InOne
++ 44 8450 510 150
++ 44 8450 510 130

BRAZIL – Farnell-Newark InOne
Tel No: ++ 55 11 4066 9400
Fax No: ++ 55 11 4066 9410

HONG KONG – Farnell-Newark InOne
Tel No: ++ 852 2268 9888
Fax No: ++ 852 2268 9899

PORTUGAL – Farnell InOne
Tel No: ++ 34 93 475 8804
Fax No: ++ 34 93 474 5288

UK – CPC
++ 44 8701 202 530
++ 44 8701 202 531

CHINA – Farnell-Newark InOne
Tel No: ++86 10 6238 5152
Fax No: ++86 10 6238 5022

IRELAND – Farnell InOne
Tel No: ++ 353 1 830 9277
Fax No: ++ 353 1 830 9016

SINGAPORE – Farnell-Newark InOne
Tel No: ++ 65 6788 0200
Fax No: ++ 65 6788 0300

EXPORT – Farnell InOne
Tel No: ++ 44 8701 200 208
Fax No: ++ 44 8701 200 209
For enquiries from all other markets

DENMARK – Farnell InOne
Tel No: ++ 45 44 53 66 44
Fax No: ++ 45 44 53 66 06

ITALY – Farnell InOne
Tel No: ++ 39 02 93 995 200
Fax No: ++ 39 02 93 995 300

SPAIN – Farnell InOne
Tel No: ++ 34 93 475 8805
Fax No: ++ 34 93 474 5107

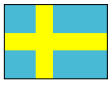
http://www.farnellinone.com

http://www.buckhickmaninone.com

http://www.cpc.co.uk

ESTONIA – Farnell InOne
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411

MALAYSIA – Farnell-Newark InOne
Tel No: ++ 60 3 7873 8000
Fax No: ++ 60 3 7873 7000



SWEDEN – Farnell InOne
Tel No: ++ 46 8 730 50 00
Fax No: ++ 46 8 83 52 62