

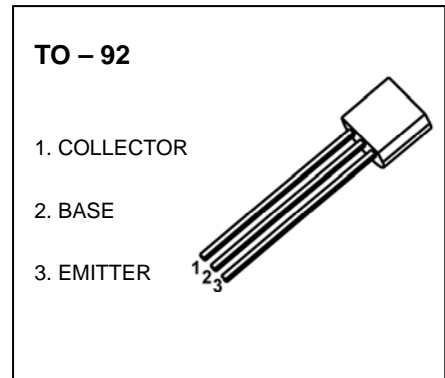
## TO-92 Plastic-Encapsulate Transistors

### **BC546/BC547/BC548** TRANSISTOR (NPN)

#### FEATURES

- High Voltage
- Complement to BC556,BC557,BC558

#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)



Symbol	Parameter	Value	Unit	
$V_{CBO}$	Collector-Base Voltage	BC546	80	V
		BC547	50	
		BC548	30	
$V_{CEO}$	Collector-Emitter Voltage	BC546	65	V
		BC547	45	
		BC548	30	
$V_{EBO}$	Emitter-Base Voltage	BC546	6	V
		BC547	6	V
		BC548	5	V
$I_C$	Collector Current-Continuous	0.1	A	
$P_C$	Collector Power Dissipation	625	mW	
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	$^{\circ}\text{C}/\text{W}$	
$T_j$	Junction Temperature	150	$^{\circ}\text{C}$	
$T_{stg}$	Storage Temperature	-55~+150	$^{\circ}\text{C}$	

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter		Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BC546	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 0.1mA, I <sub>E</sub> =0	80			V
	BC547			50			
	BC548			30			
Collector-emitter breakdown voltage	BC546	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	65			V
	BC547			45			
	BC548			30			
Emitter-base breakdown voltage	BC546	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	6			V
	BC547			6			
	BC548			5			
Collector cut-off current	BC546	I <sub>CBO</sub>	V <sub>CB</sub> =70V, I <sub>E</sub> =0			0.1	μA
	BC547		V <sub>CB</sub> =50V, I <sub>E</sub> =0			0.1	μA
	BC548		V <sub>CB</sub> =30V, I <sub>E</sub> =0			0.1	μA
Collector cut-off current	BC546	I <sub>CEO</sub>	V <sub>CE</sub> =60V, I <sub>B</sub> =0			0.1	μA
	BC547		V <sub>CE</sub> =45V, I <sub>B</sub> =0			0.1	μA
	BC548		V <sub>CE</sub> =30V, I <sub>B</sub> =0			0.1	μA
Emitter cut-off current		I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			0.1	μA
DC current gain		h <sub>FE</sub> *	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	110		800	
Collector-emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA			0.3	V
Base-emitter saturation voltage		V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA			1.1	V
Base-emitter voltage		V <sub>BE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	0.58		0.7	V
			V <sub>CE</sub> =5V, I <sub>C</sub> =10mA			0.75	V
Collector output capacitance		C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz			4.5	pF
Transition frequency		f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz	150			MH

**CLASSIFICATION of h<sub>FE</sub>**

RANK	A	B	C
RANGE	110-220	200-450	420-800

## TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

## TO-92 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250