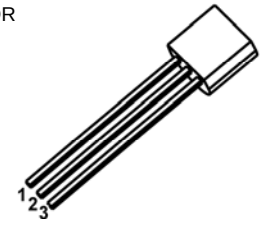
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-92 Plastic-Encapsulate Transistors

BC546 / BC547 / BC548 TRANSISTOR (NPN)

TO-92

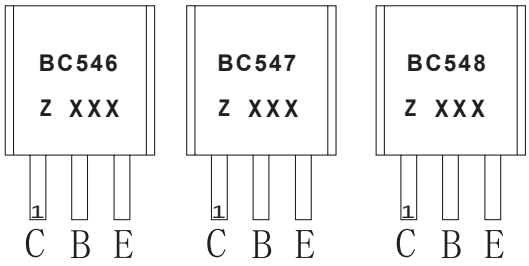
1. COLLECTOR
2. BASE
3. EMITTER



FEATURES

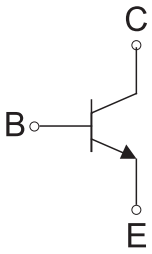
- High Voltage
- Complement to BC556,BC557,BC558

MARKING



BC546,BC547,BC548=Device code
Z=Rank of h_{FE}
XXX=Code
GXX=Green molding compound device
CXX=Normal molding compound device

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BC546	TO-92	Bulk	1000pcs/Bag
BC546-TA	TO-92	Tape	2000pcs/Box
BC547	TO-92	Bulk	1000pcs/Bag
BC547-TA	TO-92	Tape	2000pcs/Box
BC548	TO-92	Bulk	1000pcs/Bag
BC548-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25℃ 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	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range		-55~+150	℃

ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

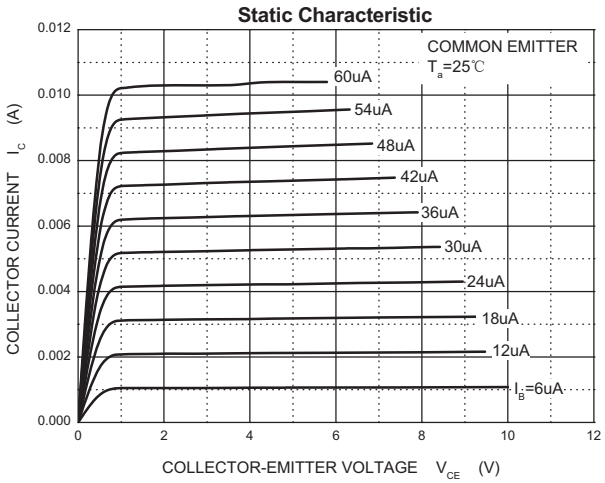
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

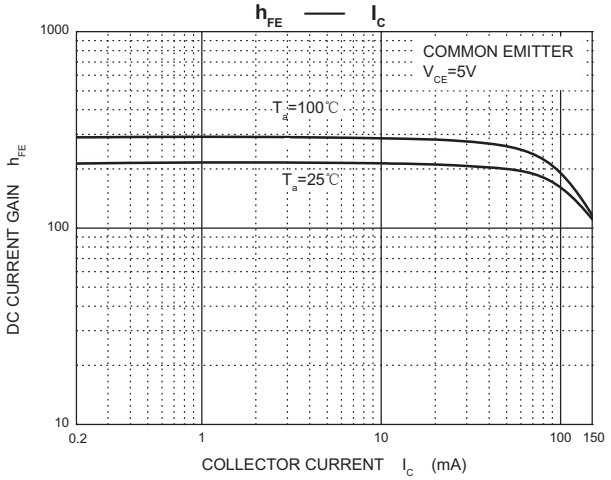
Parameter		Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BC546	$V_{(BR)CBO}$	I_C= 0.1mA,I_E=0	80			V
	BC547			50			
	BC548			30			
Collector-emitter breakdown voltage	BC546	$V_{(BR)CEO}$	I_C=1mA,I_B=0	65			V
	BC547			45			
	BC548			30			
Emitter-base breakdown voltage	BC546	$V_{(BR)EBO}$	I_E=10μA,I_C=0	6			V
	BC547			6			
	BC548			5			
Collector cut-off current	BC546	I_{CBO}	V_{CB}=70V,I_E=0			0.1	μA
	BC547		V_{CB}=50V,I_E=0			0.1	μA
	BC548		V_{CB}=30V,I_E=0			0.1	μA
Collector cut-off current	BC546	I_{CEO}	V_{CE}=60V,I_B=0			0.1	μA
	BC547		V_{CE}=45V,I_B=0			0.1	μA
	BC548		V_{CE}=30V,I_B=0			0.1	μA
Emitter cut-off current		I_{EBO}	V_{EB}=5V,I_C=0			0.1	μA
DC current gain		h_{FE} *	V_{CE}=5V, I_C=2mA	110		800	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=100mA,I_B=5mA			0.3	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=100mA,I_B=5mA			1.1	V
Base-emitter voltage		V_{BE}	V_{CE}=5V, I_C=2mA	0.58		0.7	V
			V_{CE}=5V, I_C=10mA			0.75	V
Collector output capacitance		C_{ob}	V_{CB}=10V,I_E=0, f=1MHz			4.5	pF
Transition frequency		f_T	V_{CE}=5V,I_C=10mA, f=100MHz	150			MH

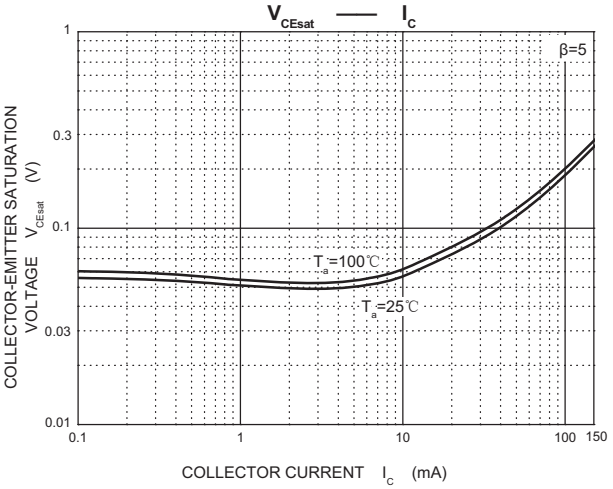
CLASSIFICATION of h_{FE}

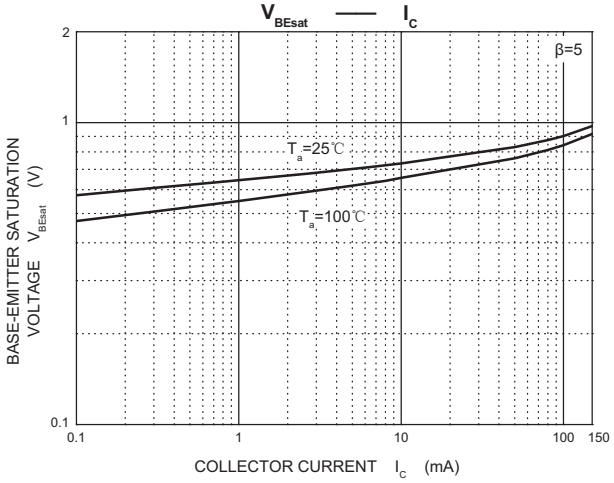
RANK	A	B	C
RANGE	110-220	200-450	420-800

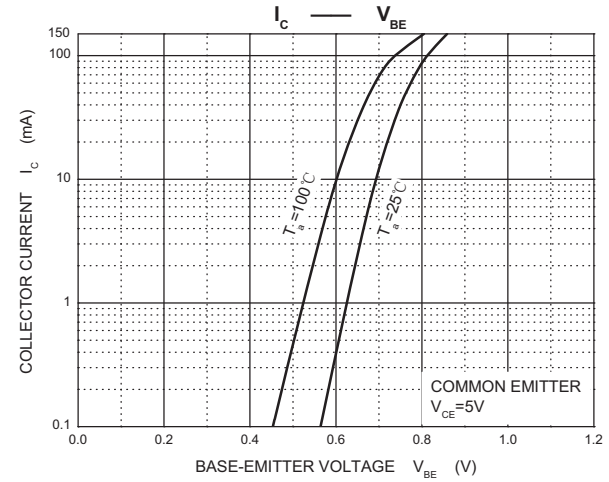
Typical Characteristics

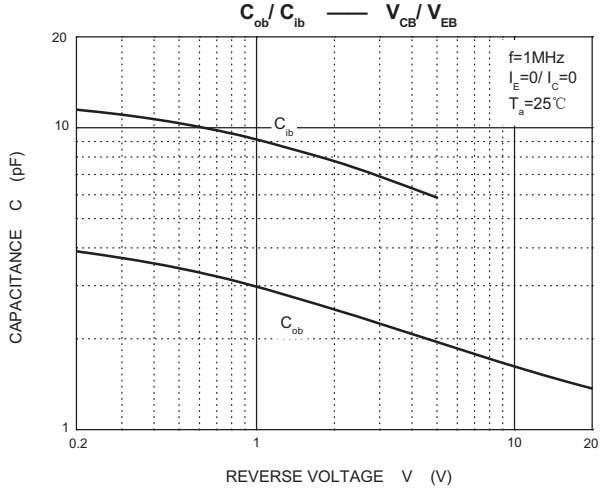


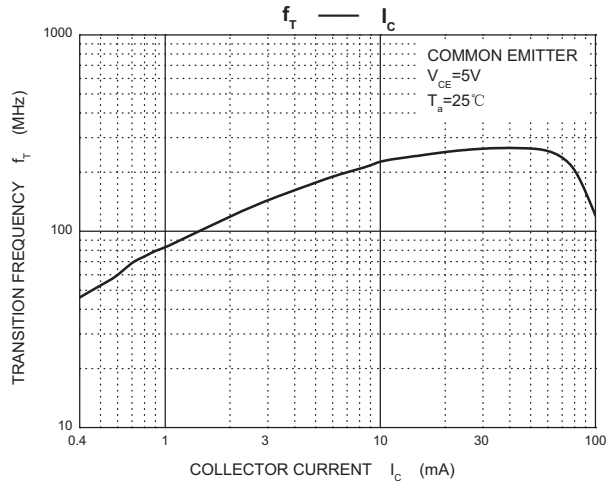


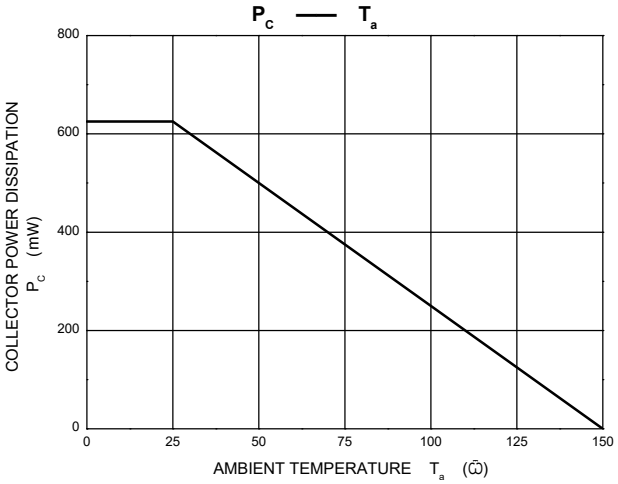




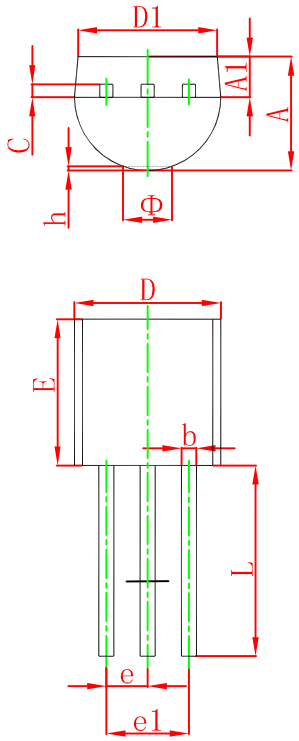






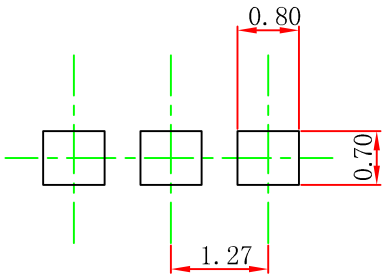


TO-92 Package Outline Dimensions



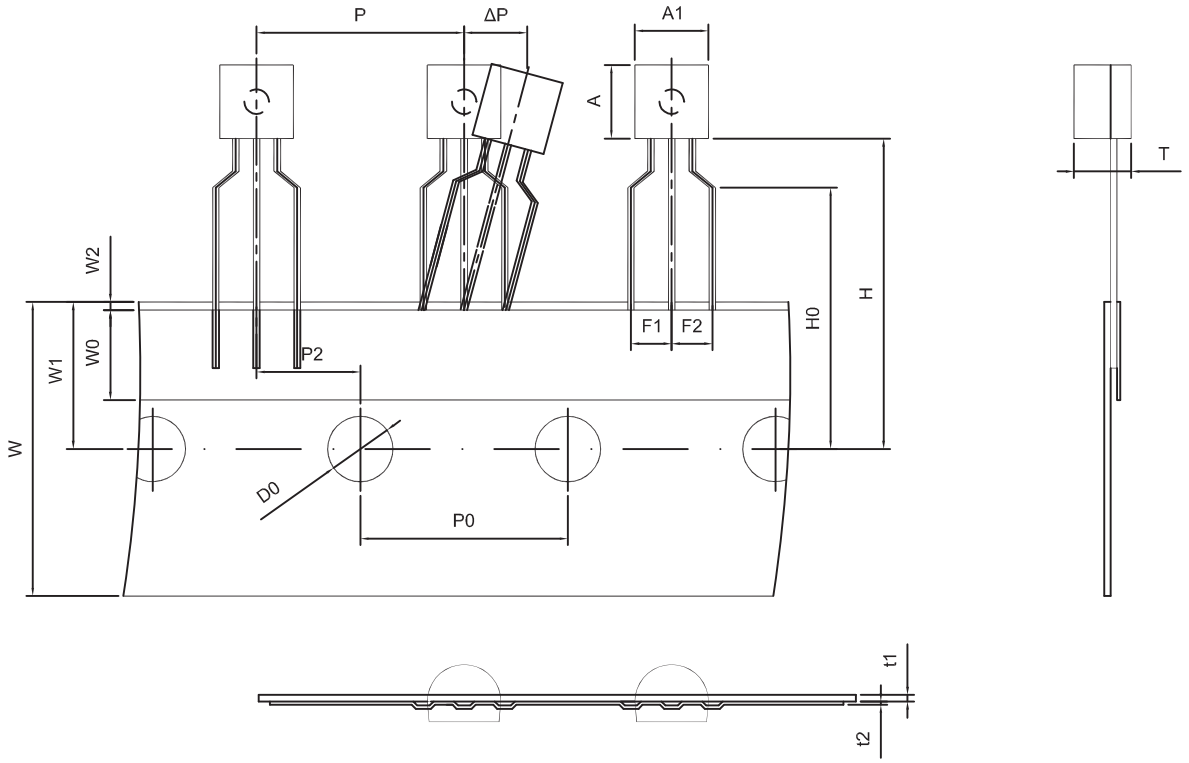
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100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

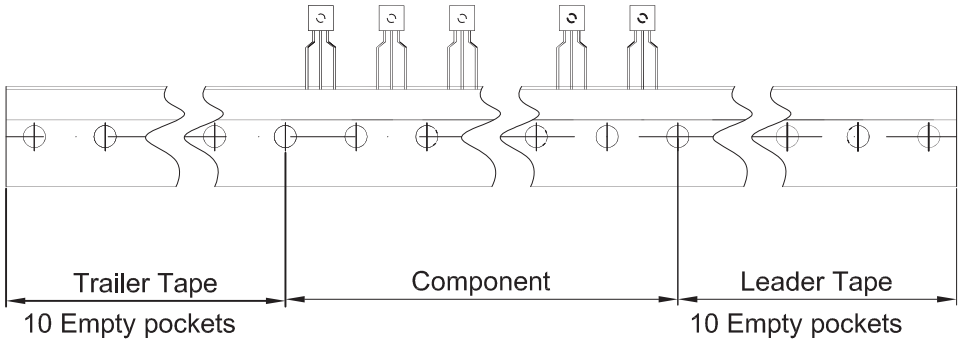


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

TO-92 PACKAGE TAPING 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