

**REPLACEMENT TYPE : BC546/BC547/BC548**

**FEATURES**

- Low current
- High Voltage
- Complement to HCBC556/HCBC557/HCBC558



TO-92

1: COLLECTOR 2: BASE 3: EMITTER

**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter		Symbol	Value	Unit
Collector-Base Voltage	BC546	V <sub>CBO</sub>	80	V
	BC547		50	
	BC548		30	
Collector-Emitter Voltage	BC546	V <sub>CEO</sub>	65	V
	BC547		45	
	BC548		30	
Emitter-Base Voltage	BC546	V <sub>EBO</sub>	6	V
	BC547		6	V
	BC548		5	V
Collector Current-Continuous		I <sub>C</sub>	0.1	A
Collector Power Dissipation		P <sub>C</sub>	625	mW
Thermal Resistance from Junction to Ambient		R <sub>θJA</sub>	200	°C/W
Junction Temperature		T <sub>j</sub>	150	°C
Storage Temperature		T <sub>stg</sub>	-55~+150	°C

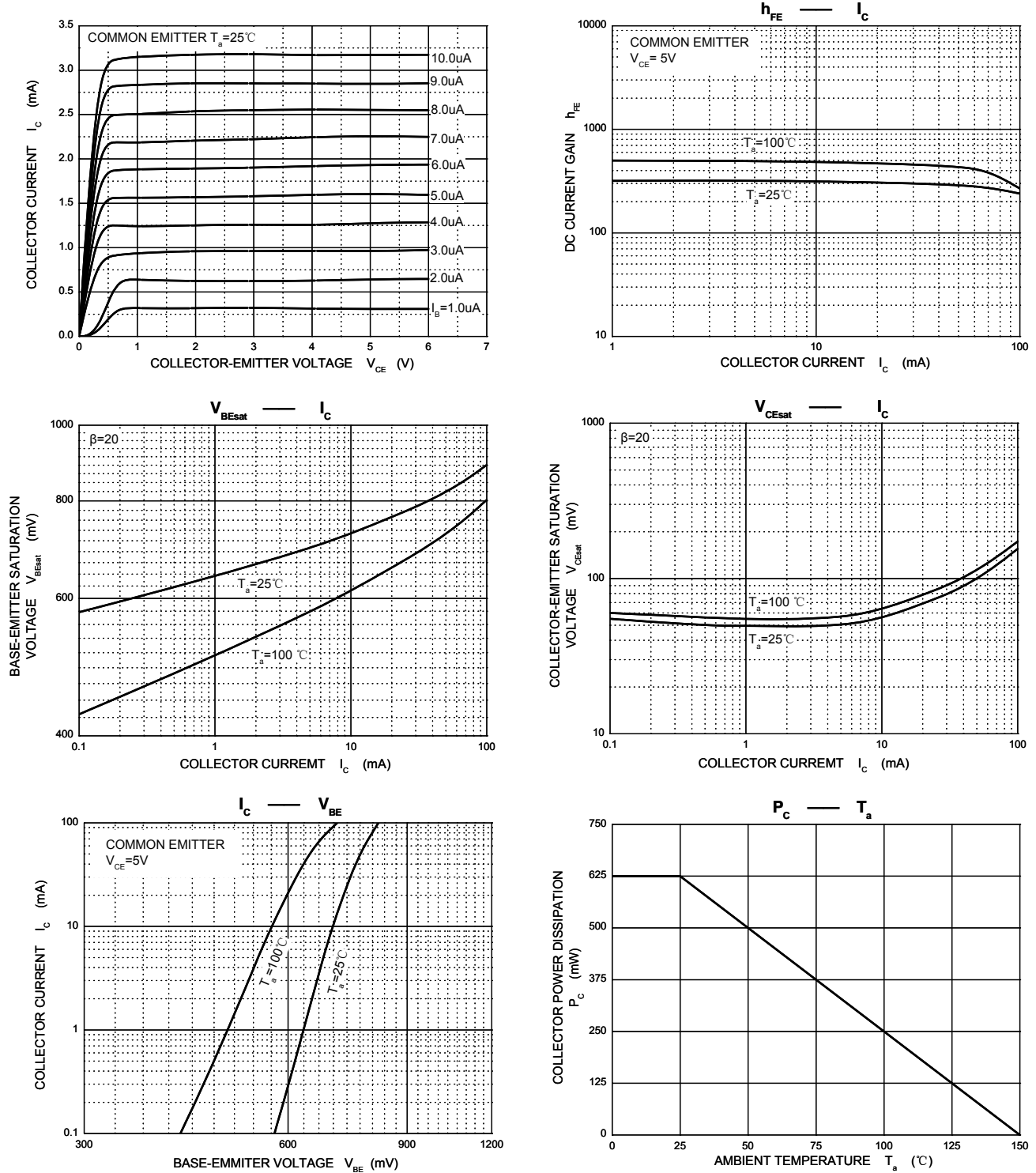
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BC546	I <sub>C</sub> = 0.1mA, I <sub>E</sub> = 0	80			V
	BC547		50			
	BC548		30			
Collector-Emitter Breakdown Voltage	BC546	I <sub>C</sub> = 1mA, I <sub>B</sub> = 0	65			V
	BC547		45			
	BC548		30			
Emitter-Base Breakdown Voltage	BC546	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	6			V
	BC547		6			
	BC548		5			
Collector Cut-off Current	BC546	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	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>E</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			MHz

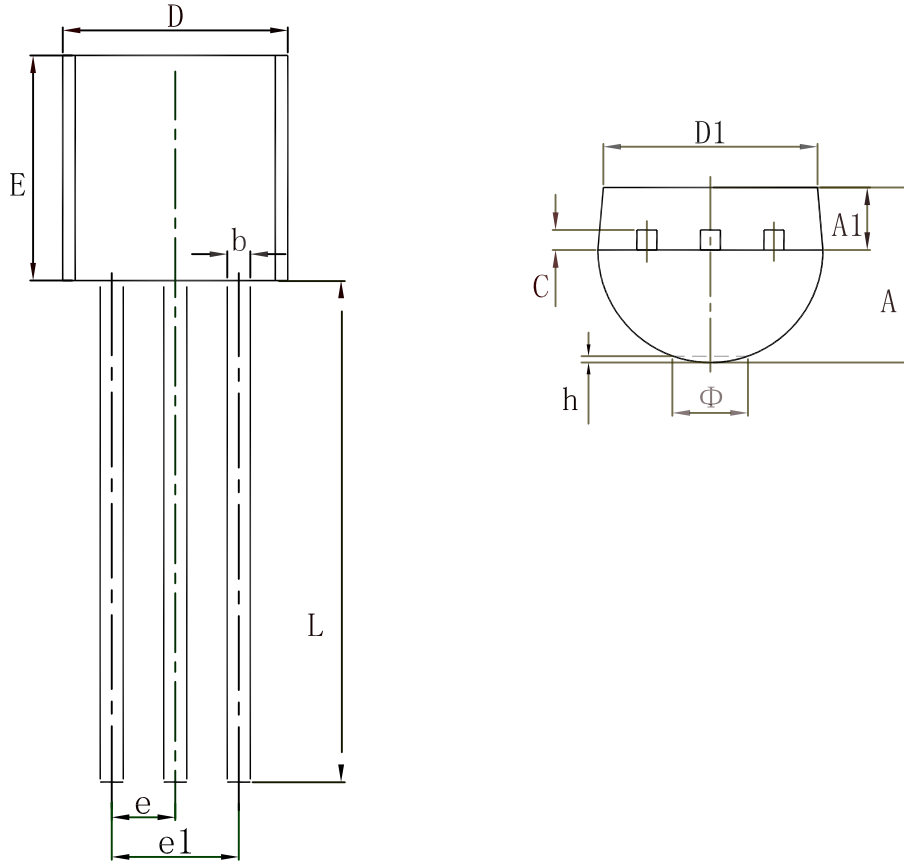
**CLASSIFICATION OF h<sub>FE</sub>**

Rank	546A	547B	548C
Range	110-220	200-450	420-800

**Typical Characteristics**

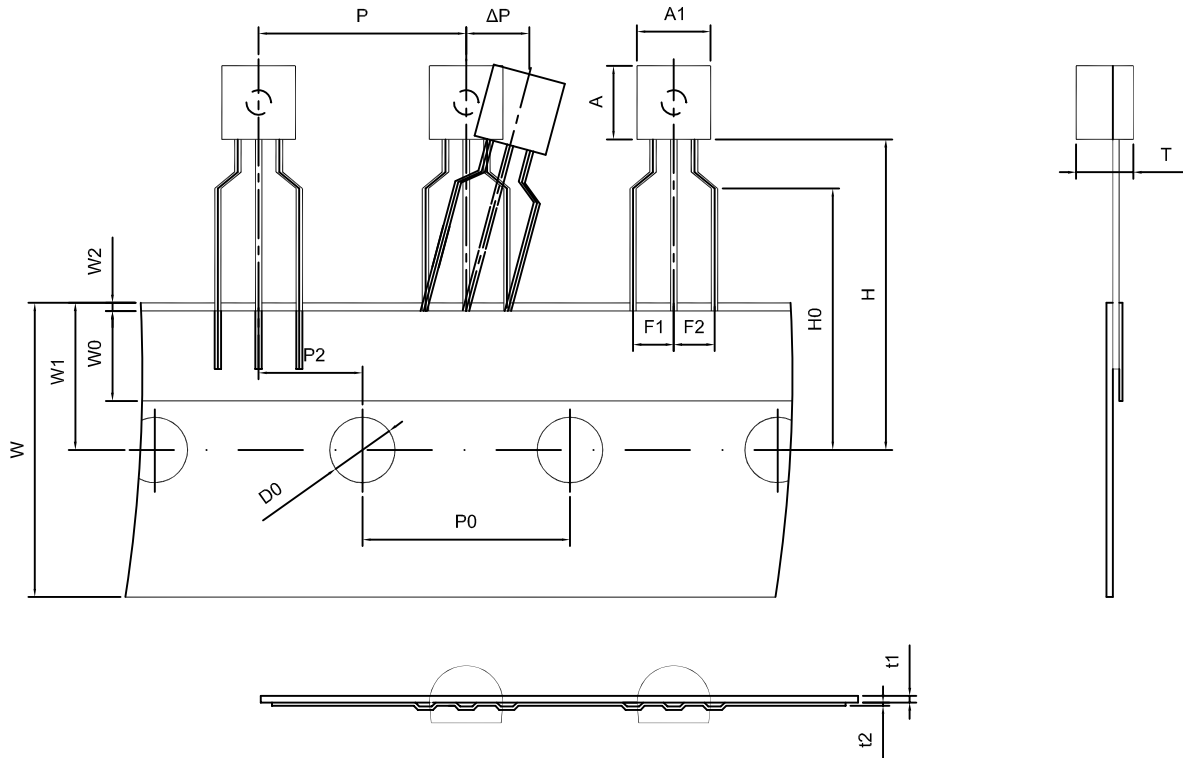


## TO-92 Package Outline Dimensions



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 Package Taping Dimension**



Dimensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5±0.2	4.5±0.2	3.5±0.2	12.7±0.3	12.7±0.2	6.35±0.3	2.5±0.3	2.5±0.3	18.0+1.0/-0.5
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0±0.5	9.0±0.5	1.0 MAX.	19.0±1.0	16.0±0.5	4.0±0.5	0.4±0.05	0.2±0.05	0 ± 1.0

