

# BC546,BC547,BC548 SERIES

## NPN GENERAL PURPOSE TRANSISTOR

**VOLTAGE** 30V/45V/65V **POWER** 625 mWatts

### FEATURES

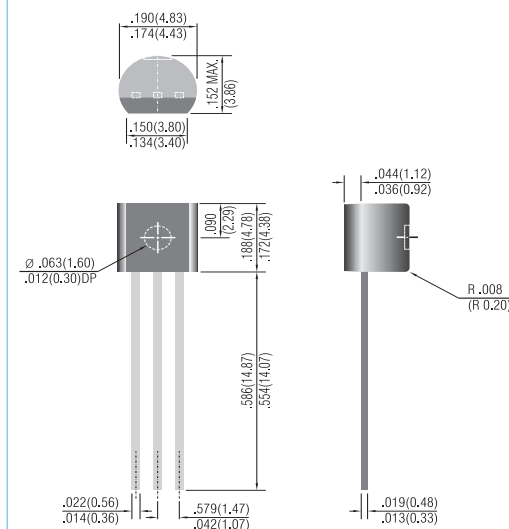
- NPN epitaxial silicon, planar design
- Collector current  $I_C = 100\text{mA}$
- Complimentary (PNP) device:BC556,BC557,BC558 Series
- Pb free product :99% Sn above can meet RoHS environment substance directive request

### MECHANICAL DATA

- Case: TO-92
- Terminals: Solderable per MIL-STD-202, Method 208
- Approx Weight : 0.02grams
- Device Marking :

BC546A=546A	BC546B=546B	-
BC547A=547A	BC547B=547B	BC547C=547C
BC548A=548A	BC548B=548B	BC548C=548C

TO-92 Unit: inch ( mm )



## ABSOLUTE MAXIMUM RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	$V_{CEO}$	65 45 30	V
Collector - Base Voltage	$V_{CBO}$	80 50 30	V
Emitter - Base Voltage	$V_{EBO}$	6.0 6.0 5.0	V
Collector Current - Continuous	$I_C$	100	mA
Max Power Dissipation	$P_{TOT}$	625	mW
Storage Temperature	$T_{STG}$	-55 to 150	°C
Junction Temperature	$T_J$	-55 to 150	°C

## THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Units
Thermal Resistance, Junction to Ambient	$R_{JA}$	200	°C/W



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## ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C, unless otherwise noted)

PARAMETER	Symbol	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage (I <sub>C</sub> =10mA, I <sub>B</sub> =0)	BC546A,B BC547A,B,C BC548A,B,C V <sub>(BR)</sub> CEO	65 45 30	-	-	V
Collector - Base Breakdown Voltage (I <sub>C</sub> =10uA, I <sub>E</sub> =0)	BC546A,B BC547A,B,C BC548A,B,C V <sub>(BR)</sub> CBO	80 50 30	-	-	V
Emitter - Base Breakdown Voltage (I <sub>E</sub> =10uA, I <sub>C</sub> =0)	BC546A,B BC547A,B,C BC548A,B,C V <sub>(BR)</sub> EBO	6.0 6.0 5.0	-	-	V
Emitter-Base Cutoff Current (V <sub>EB</sub> =5V)	I <sub>EBO</sub>	-	-	100	nA
Collector-Base Cutoff Current(V <sub>CB</sub> =30V,I <sub>E</sub> =0)	T <sub>J</sub> =150°C I <sub>CBO</sub>	- -	- -	15 5.0	nA uA
DC Current Gain (I <sub>C</sub> =10uA, V <sub>CE</sub> =5V)	BC546A,B BC547A,B,C BC548A,B,C h <sub>FE</sub>	- - -	90 150 270	- - -	-
(I <sub>C</sub> =2.0mA, V <sub>CE</sub> =5V)	BC546A,B BC547A,B,C BC548A,B,C	110 200 420	180 290 520	220 450 800	-
Collector - Emitter Saturation Voltage (I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA) (I <sub>C</sub> =100mA, I <sub>B</sub> =5.0mA)	V <sub>CE(SAT)</sub>	- -	- -	0.25 0.6	V
Base - Emitter Saturation Voltage (I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA) (I <sub>C</sub> =100mA, I <sub>B</sub> =5.0mA)	V <sub>BE(SAT)</sub>	- -	0.7 0.9	- -	V
Base - Emitter Voltage (I <sub>C</sub> =2mA, V <sub>CE</sub> =0.5mA) (I <sub>C</sub> =10mA, V <sub>CE</sub> =5.0mA)	V <sub>BE(SAT)</sub>	0.58 -	0.660 -	0.70 0.77	V
Collector - Base Capacitance (V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz)	C <sub>CBO</sub>	-	-	4.5	pF

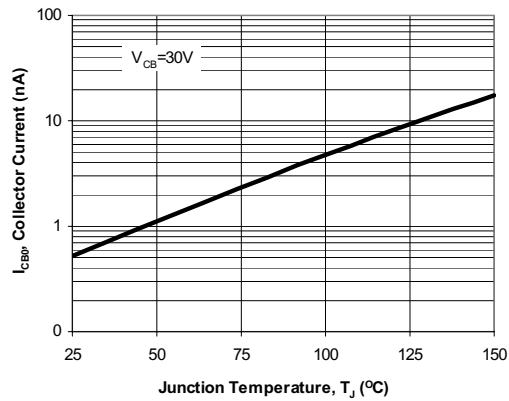
## LEGAL STATEMENT

### Copyright PanJit International, Inc 2005

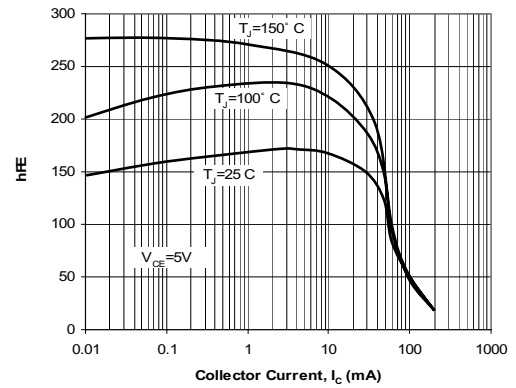
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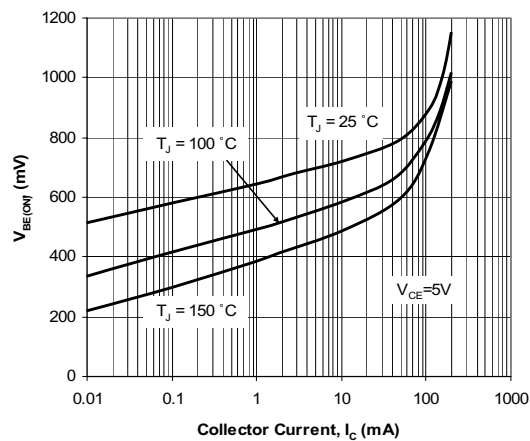
ELECTRICAL CHARACTERISTICS CURVE BC546A,BC547A,BC548A ONLY



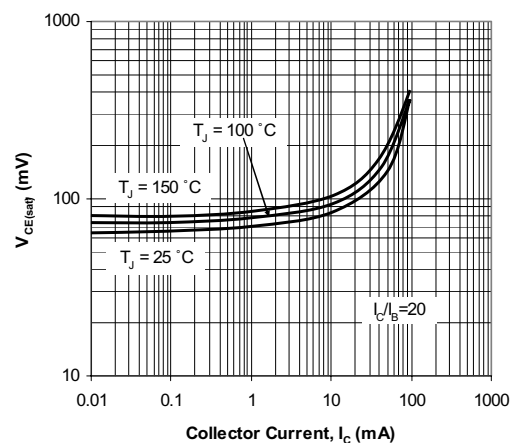
**Fig. 1. Typical  $I_{CBO}$  vs.**



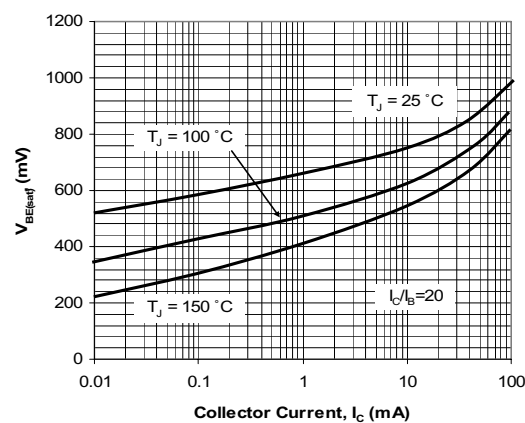
**Fig. 2. Typical  $h_{FE}$  vs.**



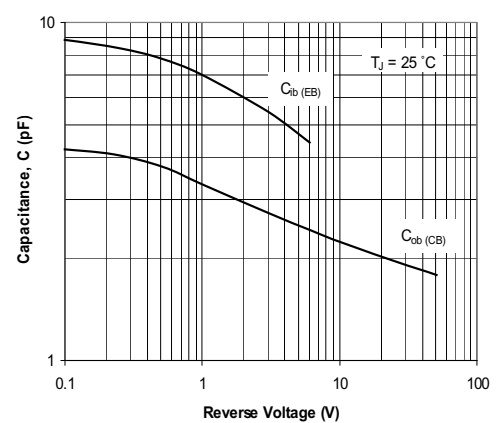
**Fig. 3. Typical  $V_{BE(ON)}$  vs.**



**Fig. 4. Typical  $V_{CE(SAT)}$  vs.**



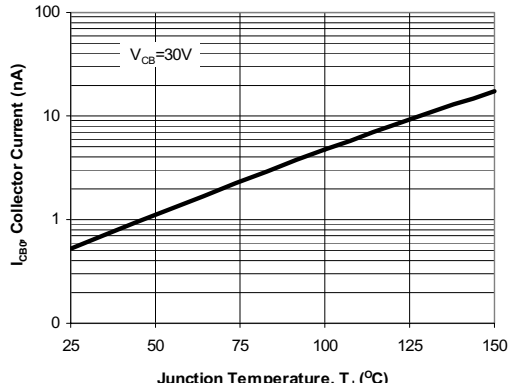
**Fig. 5. Typical  $V_{BE(SAT)}$  vs.**



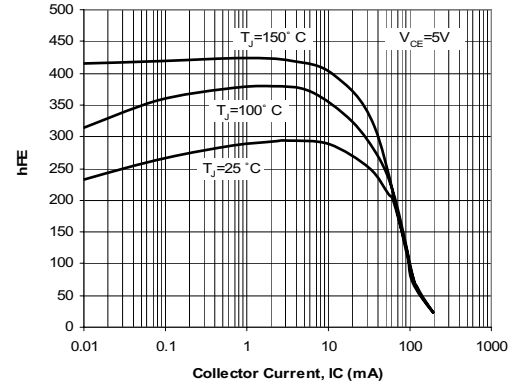
**Fig. 6. Typical Capacitances vs.**

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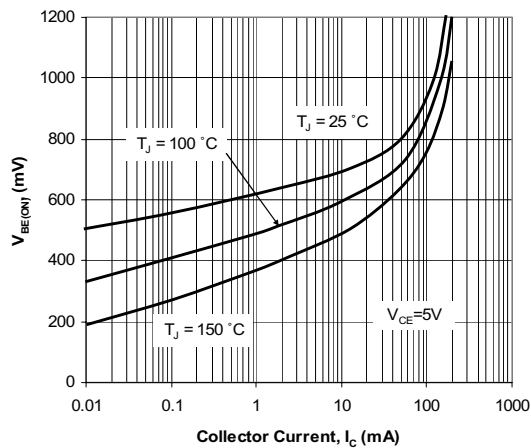
ELECTRICAL CHARACTERISTICS CURVE BC546B,BC547B,BC548B ONLY



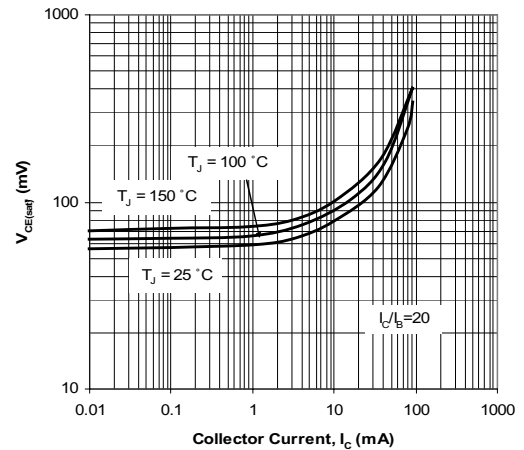
**Fig. 1. Typical  $I_{CBO}$  vs. Junction Temperature**



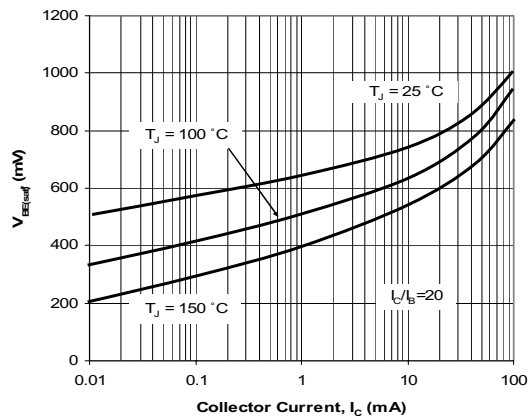
**Fig. 2. Typical  $h_{FE}$  vs. Collector Current**



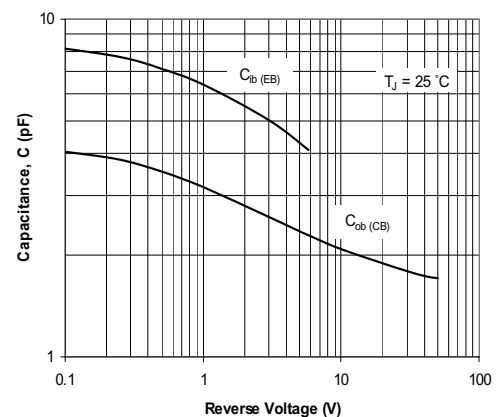
**Fig. 3. Typical  $V_{BE(ON)}$  vs. Collector Current**



**Fig. 4. Typical  $V_{CE(SAT)}$  vs. Collector Current**



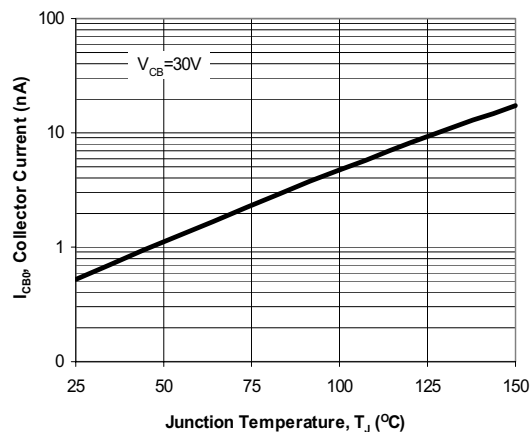
**Fig. 5. Typical  $V_{BE(SAT)}$  vs. Collector Current**



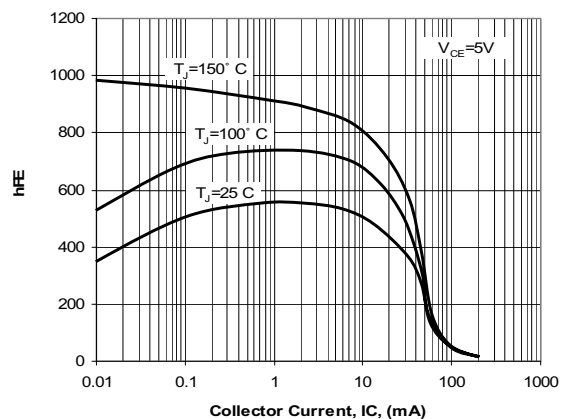
**Fig. 6. Typical Capacitances vs. Reverse Voltage**

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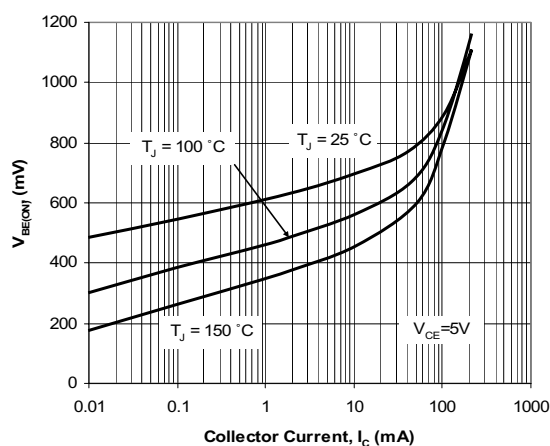
## ELECTRICAL CHARACTERISTICS CURVE BC547C,BC548C ONLY



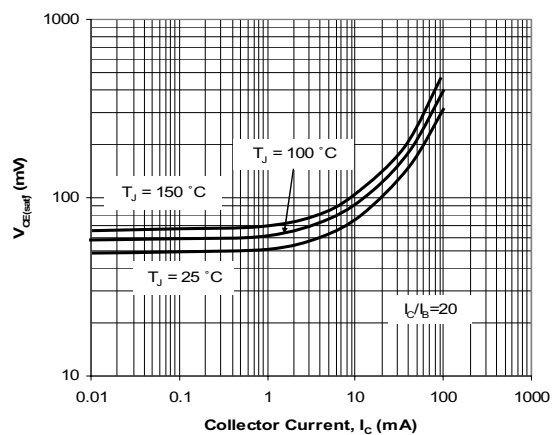
**Fig. 1. Typical  $I_{CBO}$  vs. Junction**



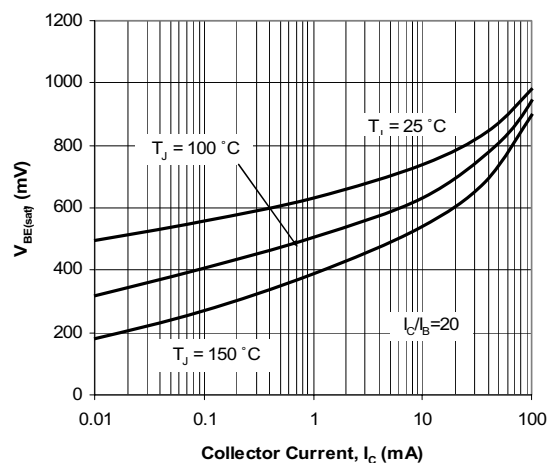
**Fig. 2. Typical  $h_{FE}$  vs. Collector**



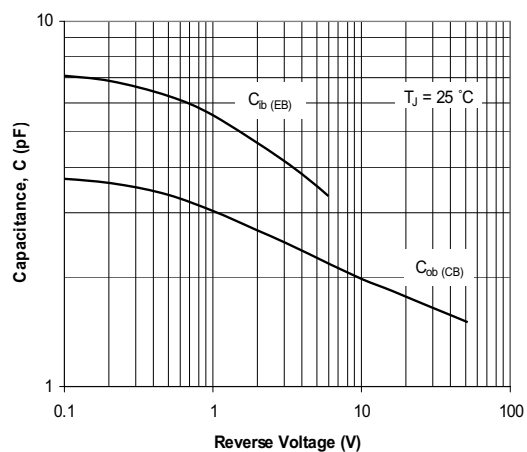
**Fig. 3. Typical  $V_{BE(ON)}$  vs. Collector Current**



**Fig. 4. Typical  $V_{CE(SAT)}$  vs. Collector**



**Fig. 5. Typical  $V_{BE(SAT)}$  vs. Collector**



**Fig. 6. Typical Capacitances vs. Reverse**