

**NPN Plastic-Encapsulate Transistor** 

# RoHS Compliant Product A suffix of "-C" specifies halogen & lead-free

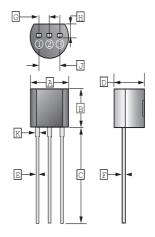
#### **FEATURE**

Power Dissipation

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

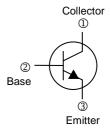
Product-Rank	BC546A	BC546B	BC546C
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Product-Rank	BC548A	BC548B	BC548C
Range	110~220	200~450	420~800





OCollector OBase OEmitter	
	<b>2</b> Base

REF.	Millimeter			
KEF.	Min.	Max.		
Α	4.40	4.70		
В	4.30	4.70		
С	12.70	-		
D	3.30	3.81		
Е	0.36	0.56		
F	0.36	0.51		
G	1.27 TYP.			
Н	1.10	-		
J	2.42	2.66		
K	0.36	0.76		



# **ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^{\circ}C$ unless otherwise specified)

Parameter		Symbol	Ratings	Unit	
	BC546		80		
Collector to Base Voltage	BC547	$V_{CBO}$	50	V	
	BC548		30		
	BC546		65		
Collector to Emitter Voltage	BC547	$V_{\sf CEO}$	45	V	
	BC548		30		
Emitter to Base Voltage		$V_{EBO}$	6	V	
Collector Current - Continuous		Ic	100	mA	
Total Device Dissipation		$P_D$	625	mW	
Junction, Storage Temperature		$T_J$ , $T_{STG}$	150, -55~150	<sub>C</sub>	

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Any changes of specification will not be informed individually.

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# **ELECTRICAL CHARACTERISTICS** ( $T_A = 25^{\circ}C$ unless otherwise specified)

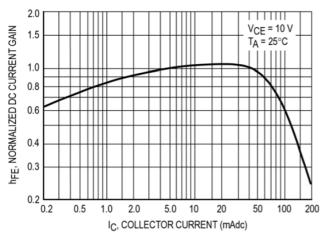
Parameter		Symbol	Min.	Тур.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	BC546	V <sub>(BR)CBO</sub>	80	-	-	V	I <sub>C</sub> =100μA, I <sub>E</sub> =0
	BC547		50	-	-		
	BC548		30	-	-		
Callagtor to Emitter Breakdown	BC546	V <sub>(BR)CEO</sub>	65	-	-	٧	
Collector to Emitter Breakdown Voltage	BC547		45	-	-		I <sub>C</sub> =1mA, I <sub>B</sub> =0
	BC548		30	-	-		
Emitter to Base Breakdown Voltage		$V_{(BR)EBO}$	6	-	-	V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	BC546	I <sub>CBO</sub>	-	-	0.1	μA	$V_{CB}=70V$ , $I_{E}=0$
	BC547		-	-	0.1		$V_{CB}=50V$ , $I_{E}=0$
	BC548		-	-	0.1		$V_{CB}=30V$ , $I_{E}=0$
Collector Cut-Off Current	BC546	I <sub>CEO</sub>	-	-	0.1	μΑ	V <sub>CE</sub> =60V, I <sub>B</sub> =0
	BC547		-	-	0.1		V <sub>CE</sub> =45V, I <sub>B</sub> =0
	BC548		-	-	0.1		$V_{CE}=30V$ , $I_{B}=0$
Emitter Cut-Off Current	BC546	I <sub>EBO</sub>	-	-	0.1	μA	V <sub>EB</sub> =5V, I <sub>C</sub> =0
	BC547		-	-	0.1		
	BC548		-	-	0.1		
DC Current Gain		h <sub>FE</sub>	110	-	800		V <sub>CE</sub> =5V, I <sub>C</sub> =2mA
Collector-Emitter Saturation Voltage		V <sub>CE(sat)</sub>	-	-	0.3	V	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA
Base-Emitter Saturation Voltage		V <sub>BE(sat)</sub>	-	-	1.1	V	I <sub>C</sub> =100mA, I <sub>B</sub> =5mA
Transition Frequency		f <sub>T</sub>	150	-	-	MHz	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz

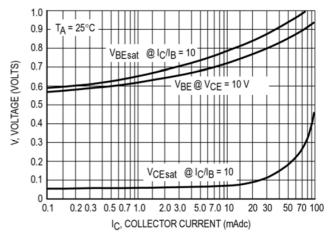
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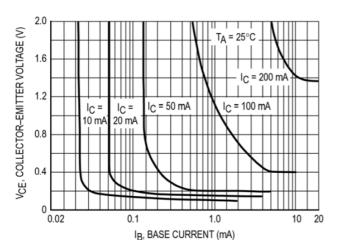
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#### CHARACTERISTIC CURVES

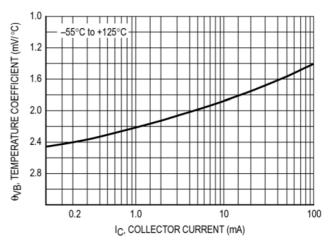




#### **Normalized DC Current Gain**



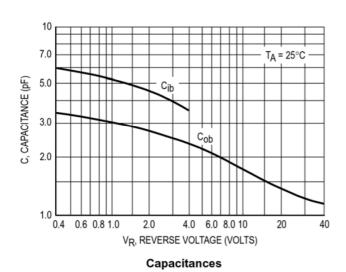
"Saturation" and "On" Voltages

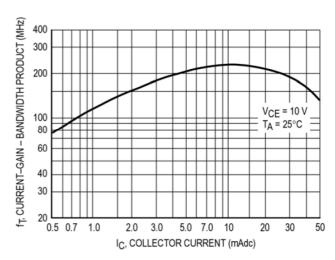


**Collector Saturation Region** 

**Base-Emitter Temperature Coefficient** 

#### BC547/BC548





Current-Gain - Bandwidth Product

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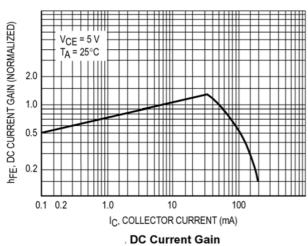
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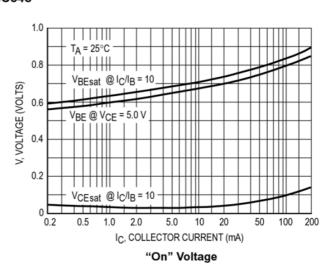


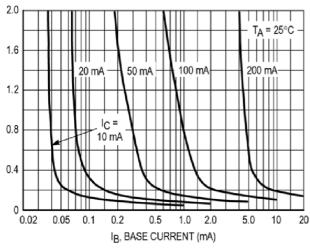
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#### **CHARACTERISTIC CURVES**

#### BC547/BC548





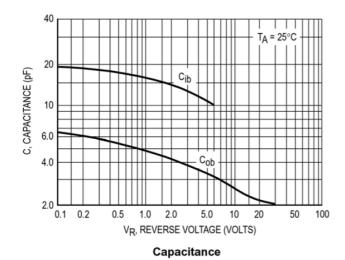


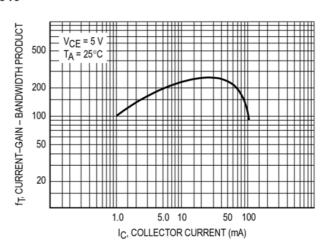
θ<sub>VB</sub>, TEMPERATURE COEFFICIENT (mV/ °C) -1.4-1.8 $\theta_{VB}$  for  $V_{BE}$ -55°C to 125°C -2.2-2.6 0.2 0.5 5.0 100 200 10 IC, COLLECTOR CURRENT (mA)

Collector Saturation Region

**Base-Emitter Temperature Coefficient** 

#### BC546





Current-Gain - Bandwidth Product

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