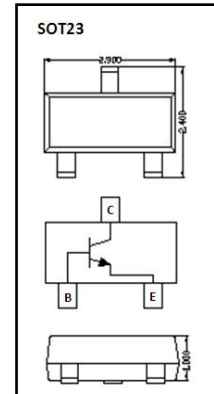


## DATA SHEET

### BC846; BC847; BC848; BC849

- ◇ Capable of 200mWatts of Power Dissipation
- ◇ Operating and Storage Junction Temperatures:  $-55^{\circ}\text{C}$  to  $150^{\circ}\text{C}$
- ◇ Surface Mount SOT-23 Package
- ◇ RoHS compliant / Green EMC



#### DEVICE MARKING

BC846A	BC846B	BC847A	BC847B	BC847C	BC848A	BC848B	BC848C	BC849B	BC849C
1A	1B	1E	1F	1G	1J	1K	1L	49B	49C

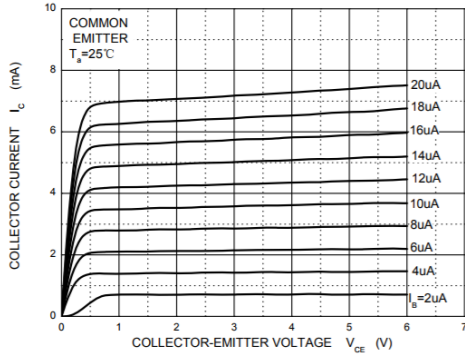
#### MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	BC846	80
		BC847	50
		BC848 BC849	30
V <sub>CEO</sub>	Collector-Emitter Voltage	BC846	65
		BC847	45
		BC848 BC849	30
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current	100	mA
P <sub>C</sub>	Collector Power Dissipation	200	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	625	°C/W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

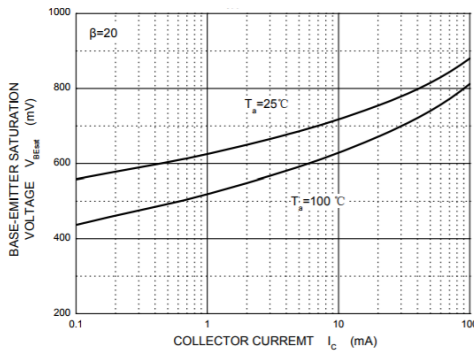
**ELECTRICAL CHARACTERISTICS @ 25° C Unless Otherwise Specified**

Symbol	Parameter	Test Conditions	Min	Max	Units
$V_{CE0}$	Collector-Emitter Breakdown Voltage	$I_C=10mA, I_B=0$ BC846 BC847 BC848 BC849	65 45 30		V
$V_{CB0}$	Collector-Base Breakdown Voltage	$I_C=10\mu A, I_E=0$ BC846 BC847 BC848 BC849	80 50 30		V
$V_{EB0}$	Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	6.0		V
$I_{CBO}$	Collector Cutoff Current	BC846 ( $V_{CB}=70V, I_E=0V$ ) BC847 ( $V_{CB}=50V, I_E=0V$ ) BC848 BC849 ( $V_{CB}=30V, I_E=0V$ )		100	nA
$I_{EBO}$	Emitter cut-off current	$V_{EB}=5V, I_C=0$		100	nA
$I_{CEO}$	Collector Cutoff Current	BC846 ( $V_{CE}=60V, I_B=0$ ) BC847 ( $V_{CE}=45V, I_B=0$ ) BC848, BC849 ( $V_{CE}=30V, I_B=0$ )		100	nA
$h_{FE}$	DC Current Gain*	$V_{CE}=5V, I_C=2mA$ BC846A, BC847A, BC848A BC846B, BC847B, BC848B, BC849B BC847C, BC848C, BC849C	110 200 420	220 450 800	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=100mA, I_B=5mA$		0.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=100mA, I_B=5mA$		1.1	V
fT	Transition frequency	$I_C=10mA, V_{CE}=5V, f=100MHz$	100		MHZ

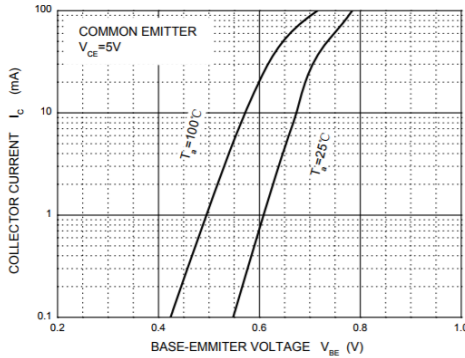
Typical Characteristics



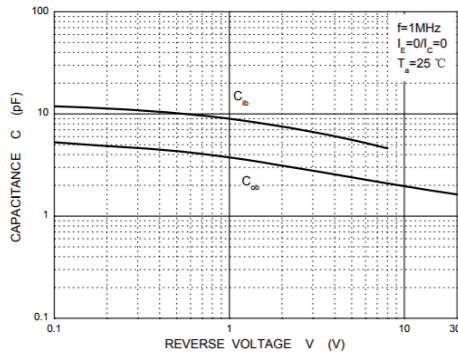
Static Characteristic



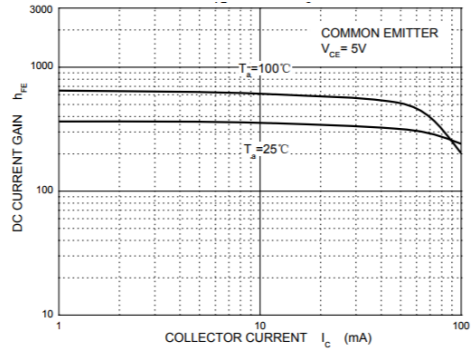
$V_{BEsat} - I_c$



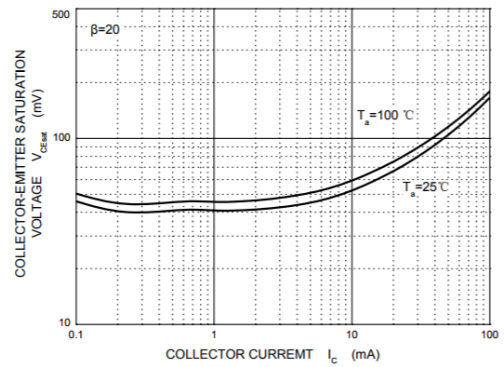
$I_c - V_{BE}$



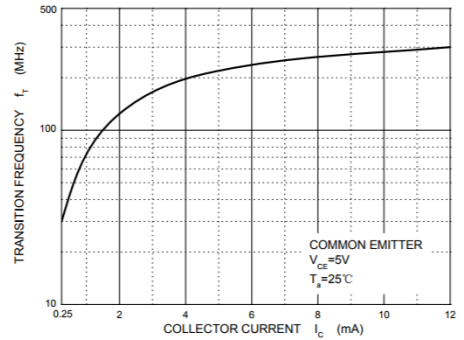
$C_{ob}/C_{ib} - V_{CB}/V_{EB}$



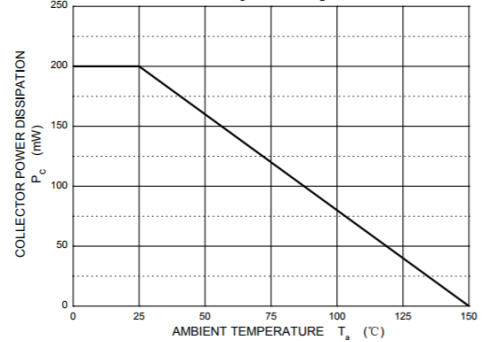
$h_{FE} - I_c$



$V_{CEsat} - I_c$



$f_T - I_c$



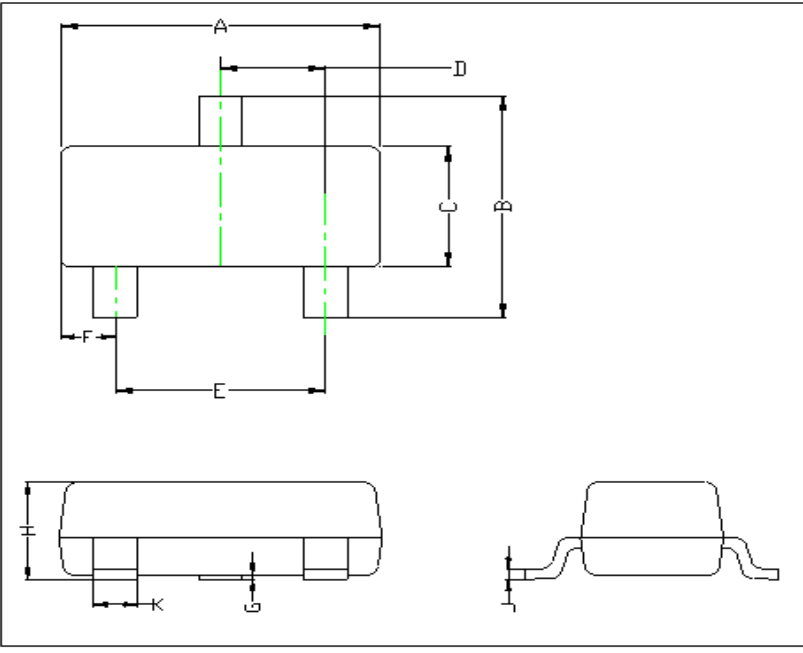
$P_c - T_a$

ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
BC846 thru BC848	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

**Package Outline : SOT23**



The diagram shows three views of the SOT23 package: a top view with dimensions A, B, C, D, E, and F; a side view with dimension H; and a bottom view with dimension K. A dashed green line indicates the center of the package.

Symbol	Dimensions in mm	
	Min.	Max.
A	2.800	3.040
B	2.100	2.640
C	1.200	1.400
D	0.890	1.030
E	1.780	2.050
F	0.450	0.600
G	0.013	0.100
H	0.900	1.110
J	0.090	0.180
K	0.370	0.510

**SOT23 Package Outline**

Note:  
 1. Halogen free ,EMC  
 2. Pb free solder  
 3: Lead thickness solder plating  
 4. Lead frame CAC-5  
 5. Other Tolerance  $\pm 0.05$   
 6. Dimensions are exclusive of Burrs Mold Flash and Tie Bar extrusions  
 7. Unit :mm