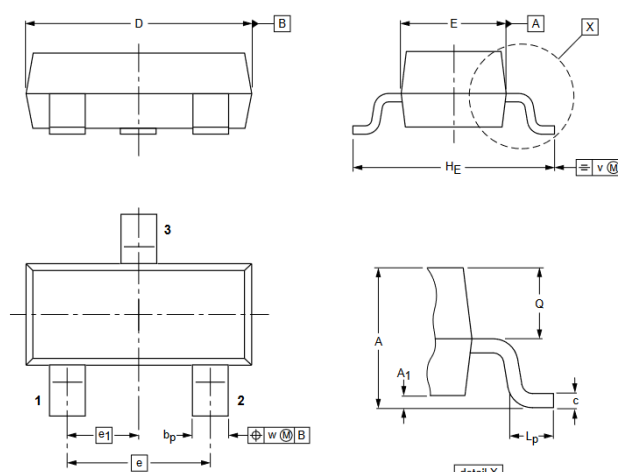


Silicon SMD NPN Epitaxial Transistors

Primary characteristics			
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage	30 ~ 80	V
V_{CEO}	Collector-emitter voltage	30 ~ 65	V
V_{EBO}	Emitter-base voltage	5 ~ 6	V
P_C	Collector power dissipation	300	mW

Features

- **SOT-23** case for easy automatic insertion.
- Pb-free and **RoHS** compliant
- Epitaxial planar die construction
- Complementary **PNP** type available (BC856 ~ BC858)
- For switching and AF amplifier applications

Case dimensions													
 1 – Base; 2 – Emitter; 3 – Collector													
SOT-23 (TO-236AB)													
Unit	A	A ₁ max	b _p	c	D	E	e	e ₁	H _c	L _p	Q	v	w
mm	1.0 ±0.1	0.1	0.43 ±0.05	0.12 ±0.03	2.9 ±0.1	1.3 ±0.1	1.9	0.95	2.3 ±0.2	0.3 ±0.15	0.5 ±0.05	0.2	0.1

Part numbering system

BC84	7	B
↓	↓	↓
Series code	V_{CBO} classification (see: Absolute maximum ratings)	h_{FE} classification (see: Characteristics)

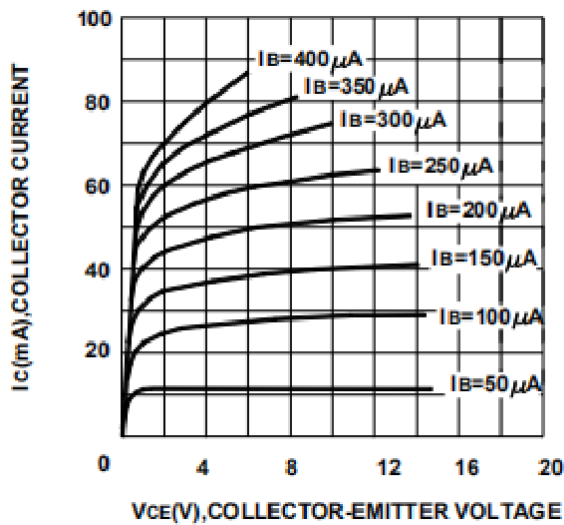
Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	80	V
		50	
		30	
Collector-emitter voltage	V_{CEO}	65	V
		45	
		30	
Emitter-base voltage	V_{EBO}	6	V
		5	
Collector current	I_C	100	mA
Peak collector current	I_{CM}	200	
Power dissipation	P_{tot}	300	mW
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-65 ~ 150	

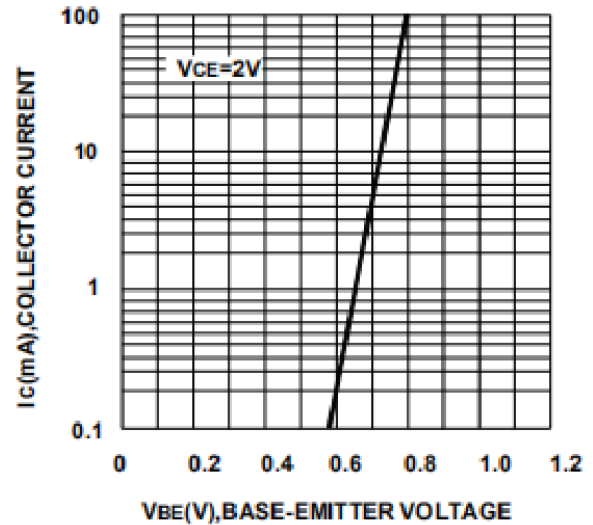
Characteristics (T_a = 25°C)

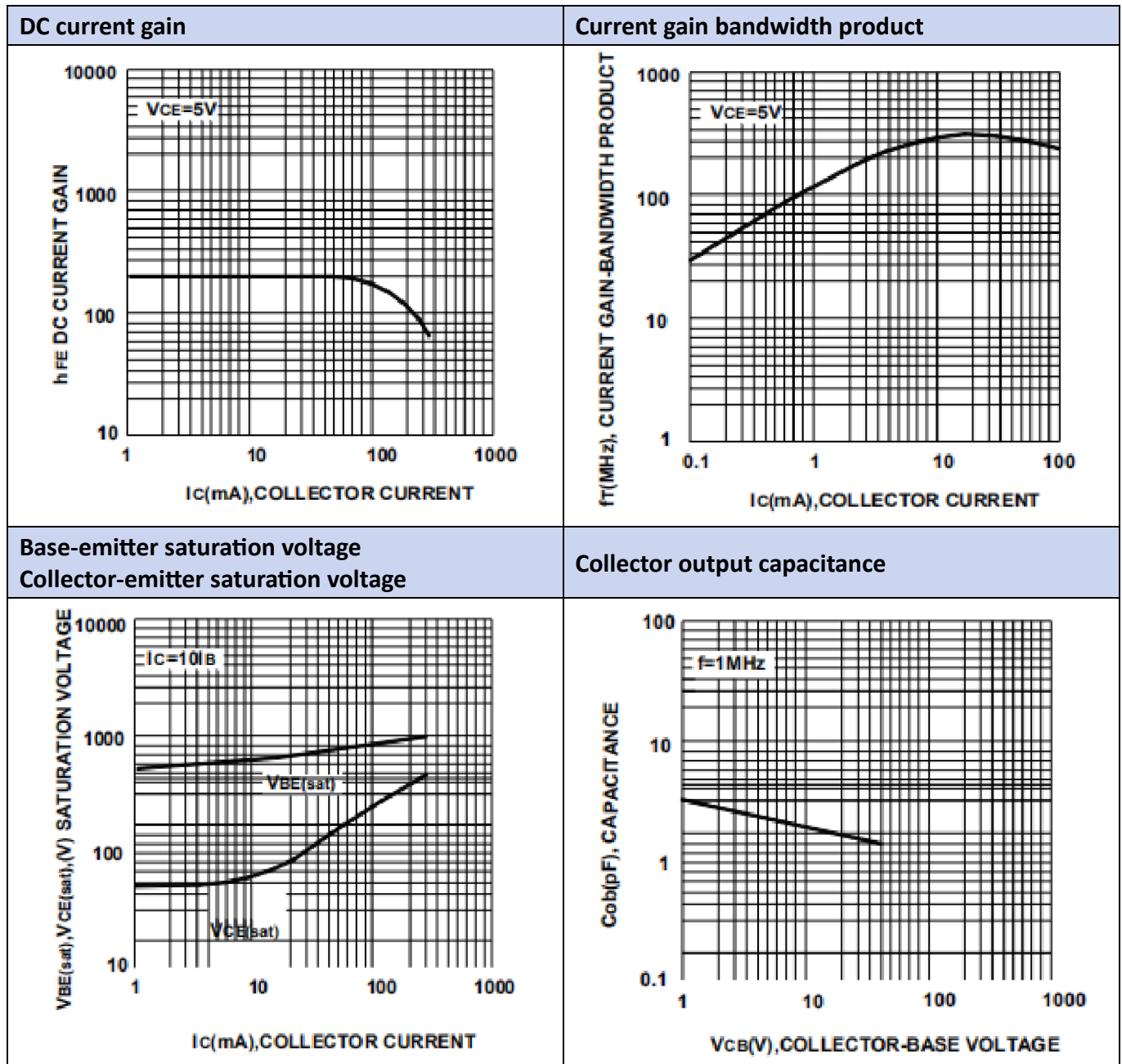
Parameter	Symbol	Test conditions	Value			Unit
			Min	Typ.	Max	
DC current gain	A	V _{CE} =5.0V, I _C =2.0mA	110	-	220	-
	B		200	-	450	
	C		420	-	800	
Collector-base cutoff current	I _{CBO}	V _{CB} =30V	-	-	15	nA
Collector-base breakdown voltage	BC846	I _C =100μA	80	-	-	V
	BC847		50	-	-	
	BC848		30	-	-	
Collector-emitter breakdown voltage	BC846	I _C =2.0mA	65	-	-	V
	BC847		45	-	-	
	BC848		30	-	-	
Emitter-base breakdown voltage	BC846, BC847	I _C =100μA	6.0	-	-	V
	BC848		5.0	-	-	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =10mA, I _B =0.5mA	-	-	250	mV
		I _C =100mA, I _B =5.0mA	-	-	600	
Base emitter on voltage	V _{BE(on)}	V _{CE} =5.0V, I _C =2.0mA	580	-	700	mV
		V _{CE} =5.0V, I _C =10mA	-	-	720	
Transition frequency	f _T	V _{CE} =5.0V, I _C =10mA, f=100MHz	-	300	-	MHz
Output capacitance	C _{ob}	V _{CB} =10V, f=1.0MHz	-	-	6	pF
Input capacitance	C _{ib}	V _{CB} =0.5V, f=1.0MHz	-	9	-	

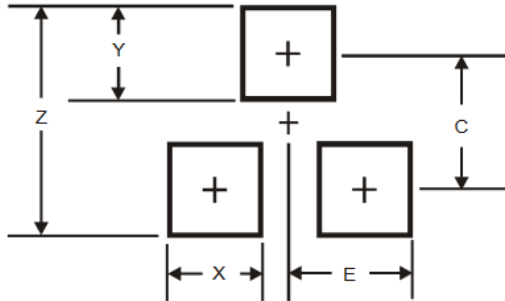
Static characteristic



Base-emitter on voltage





Suggested soldering pad layout					
					
SOT-23 (TO-236AB)					
Pad dimensions					
Unit	Z	X	Y	C	E
mm	2.9	0.8	0.9	2.0	1.35

Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
BC846 ~ BC848	SOT-23 (TO-236AB)	3000 pcs / reel 144 000 pcs / box	--- 400 x 370 x 270 mm

Disclaimer

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