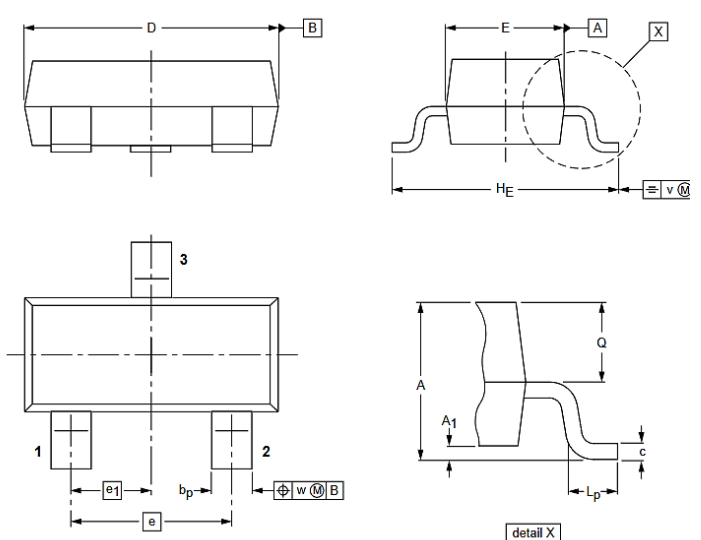


Silicon SMD NPN Epitaxial Transistors

Primary characteristics			
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage	50	V
V_{CEO}	Collector-emitter voltage	45	V
V_{EBO}	Emitter-base voltage	5	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 (**BC807**)

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 _E	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

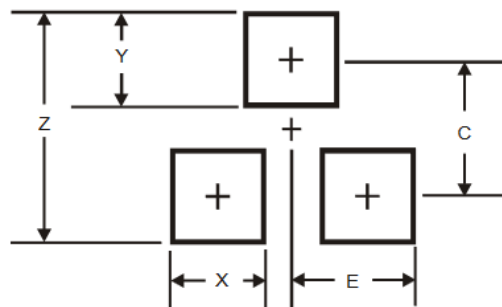
Electrical characteristics and maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test conditions	Value		Unit
			Min	Max	
Collector-base voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	50		V
Collector-emitter voltage	V_{CEO}	$I_C = 10\mu\text{A}, I_B = 0$	45		V
Emitter-base voltage	V_{EBO}	$I_E = 1\mu\text{A}, I_C = 0$	5		V
Collector cut-off current	I_{CBO}	$V_{CB} = 45\text{V}, I_E = 0$		0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$		0.1	μA
Collector current	I_C			500	mA
Collector power dissipation	P_C			300	mW
DC current gain	$h_{FE(1)}$	$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	100	600	
	$h_{FE(2)}$	$V_{CE} = 1\text{V}, I_C = 500\text{mA}$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		1.2	V
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	100		MHz
Junction temperature	T_j			150	$^\circ\text{C}$
Storage temperature range	T_s		-55	150	$^\circ\text{C}$
Thermal resistance junction to ambient air ¹⁾	R_{thA}			417	$^\circ\text{C/W}$

Classification of $h_{FE(1)}$ / marking

Part number	Range		Marking
	Min	Max	
BC817-16	100	250	6A
BC817-25	160	400	6B
BC817-40	250	600	6C

Suggested soldering pad layout

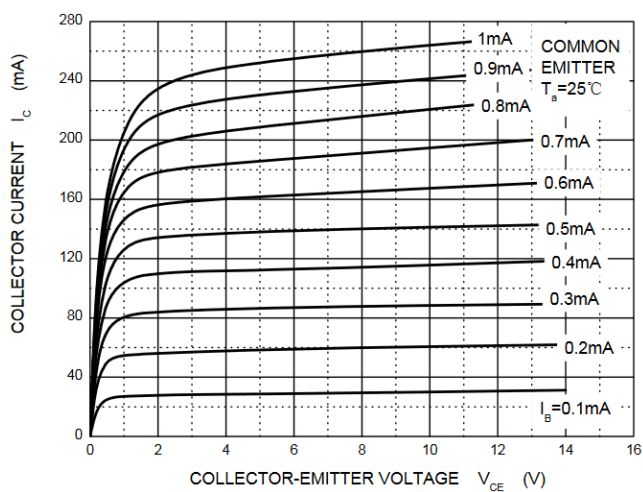


SOT-23 (TO-236AB)

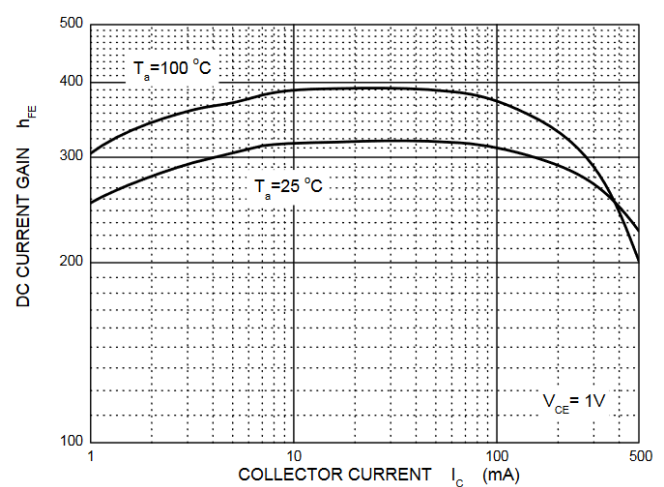
Pad dimensions

Unit	Z	X	Y	C	E
mm	2.9	0.8	0.9	2.0	1.35

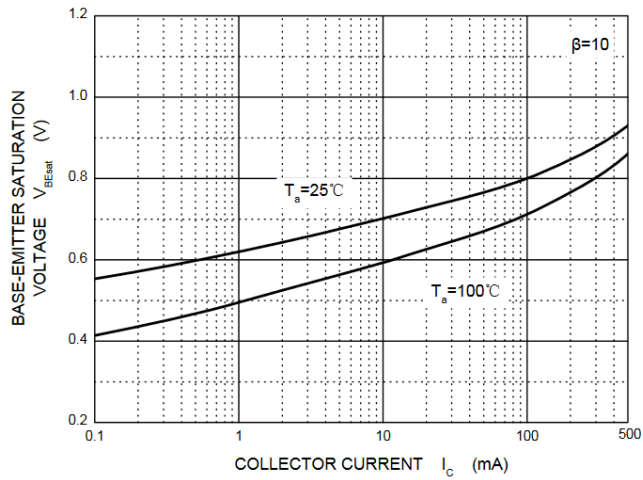
Static characteristic



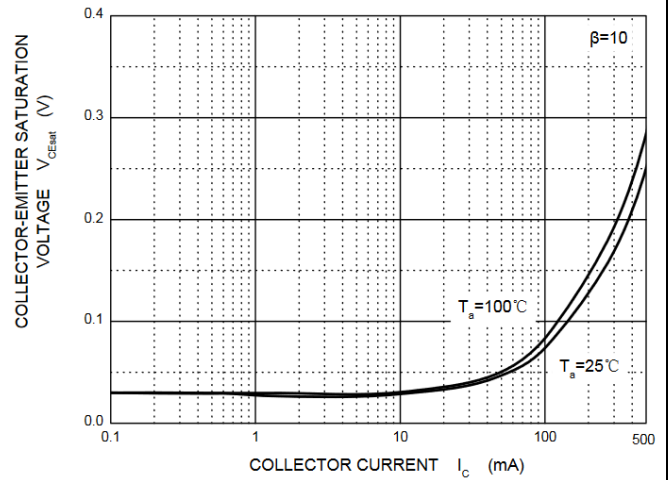
$H_{FE} - I_c$



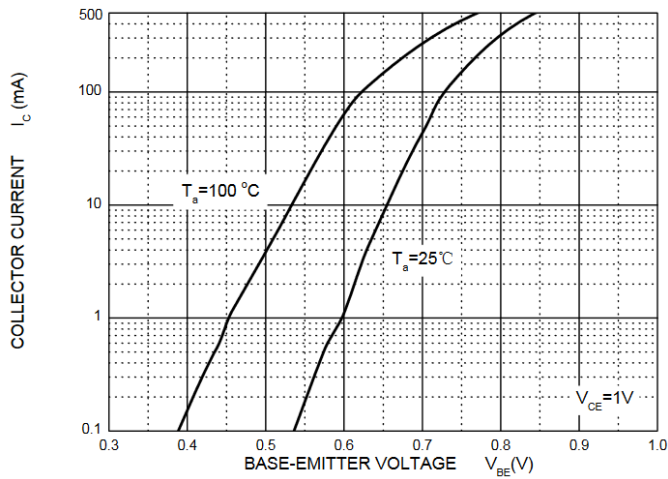
$V_{BE(sat)} - I_C$



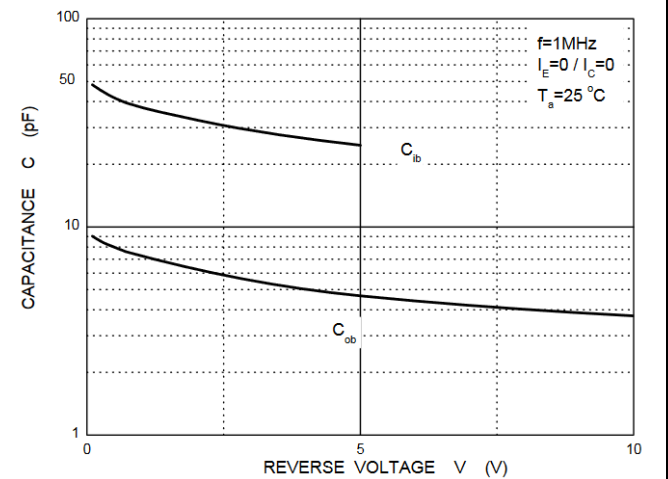
$V_{CE(sat)} - I_C$



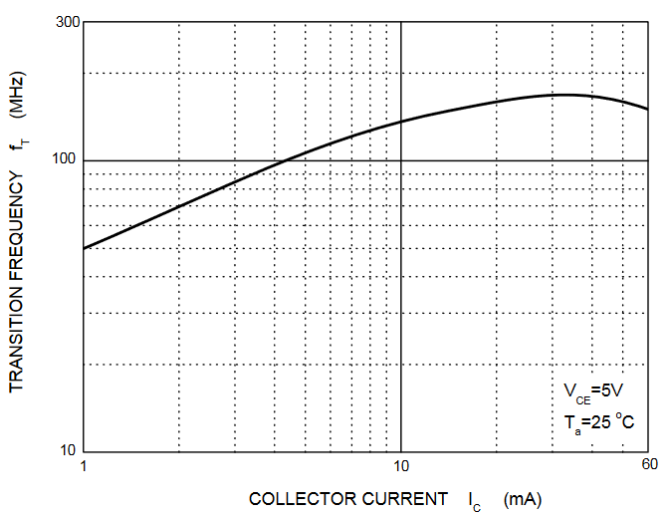
$I_C - V_{BE}$



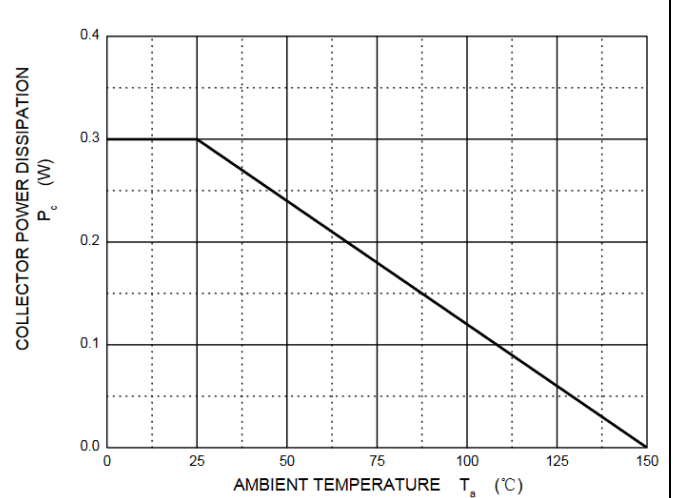
$C_{ob} / C_{ib} - V_{CB} / V_{EB}$



$f_T - I_C$



$P_C - T_a$



Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
BC817-16 ~ BC817-40	SOT-23 (TO-236AB)	3000 pcs / reel	---

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