

SOT-23 Plastic-Encapsulate Transistors

BC817

BC817 TRANSISTOR (NPN)

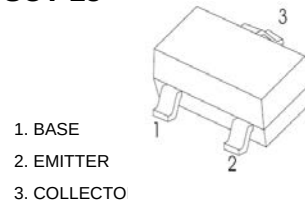
FEATURES

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC807 (PNP)

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

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
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	$^\circ\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^\circ\text{C}$

SOT-23



ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

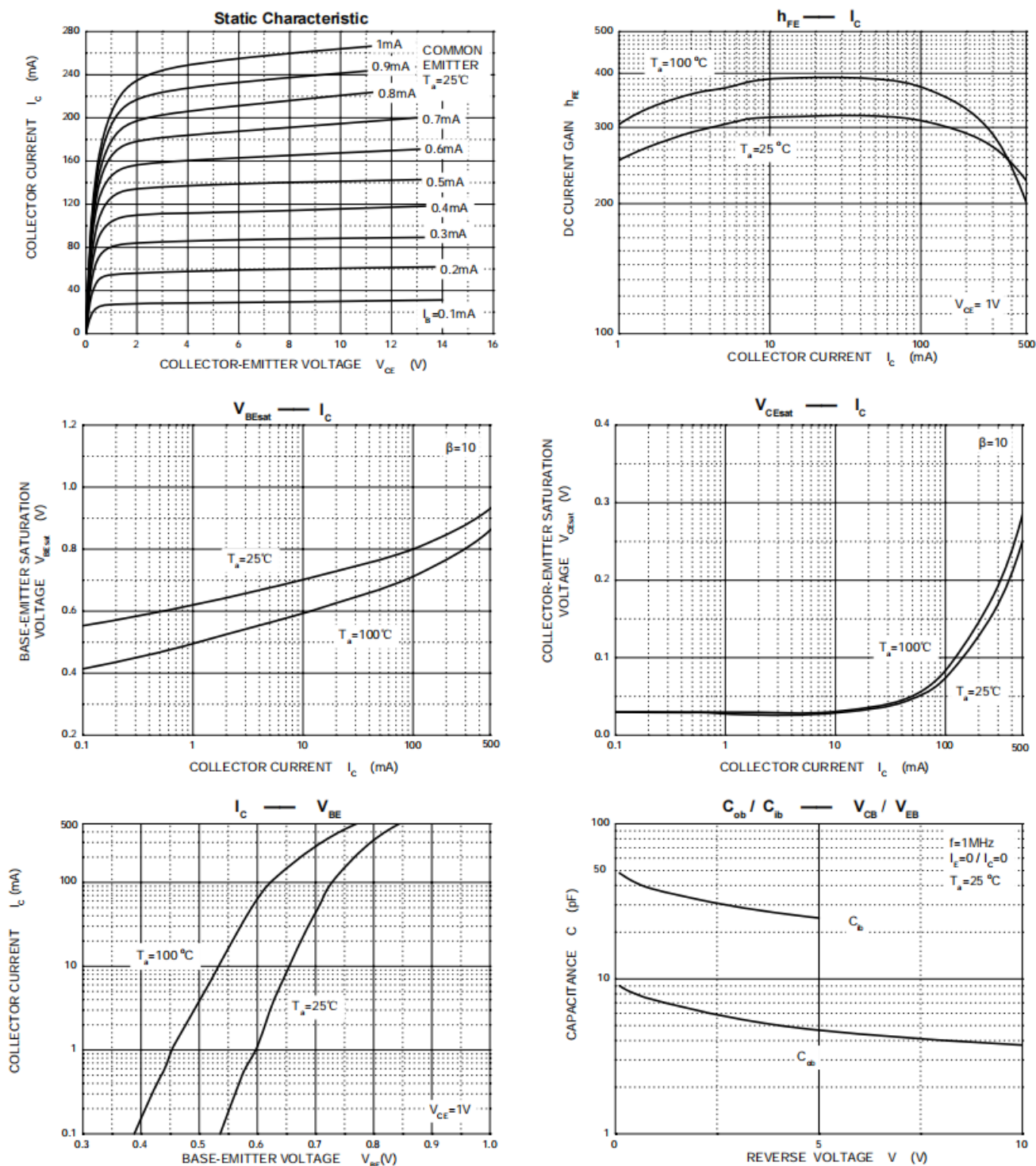
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	50			V
Collector-emitter breakdown voltage	V_{CEO}	$I_C = 10\text{mA}, I_B = 0$	45			V
Emitter-base breakdown voltage	V_{EBO}	$I_E = 1\mu\text{A}, I_C = 0$	5			V
Collector cut-off 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
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
Base-emitter voltage	V_{BE}	$V_{CE} = 1\text{V}, I_C = 500\text{mA}$			1.2	V
Collector capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		10		pF
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$ $f = 100\text{MHz}$	100			MHz

CLASSIFICATION OF $h_{FE(1)}$

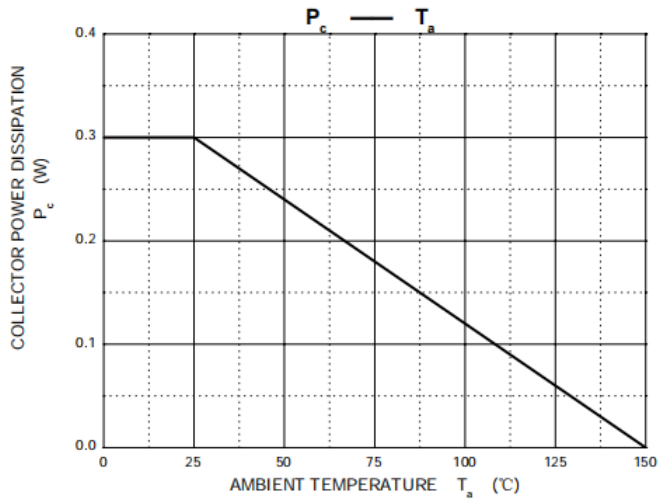
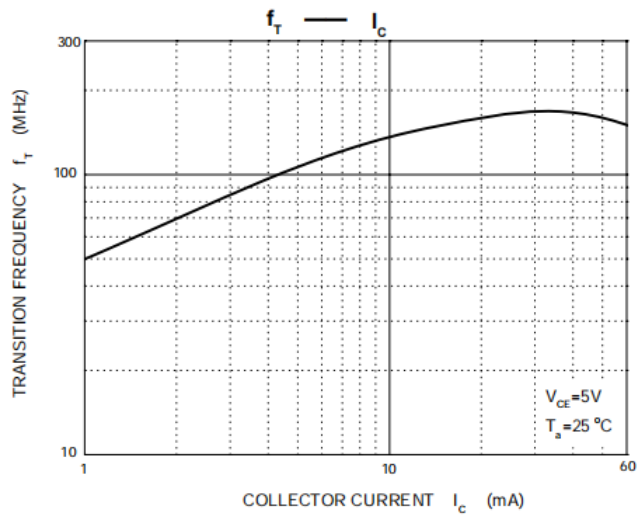
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B	6C

SOT-23 Plastic-Encapsulate Transistors BC817

Typical Characteristics

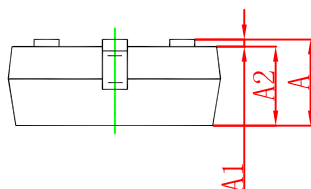
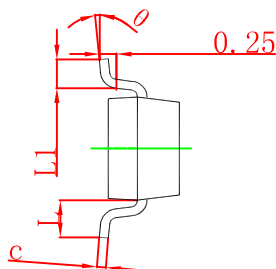
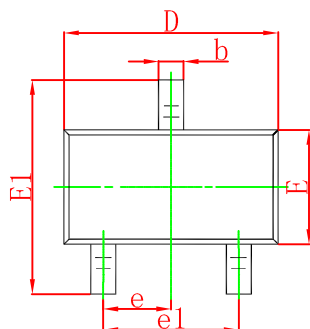


SOT-23 Plastic-Encapsulate Transistors BC817



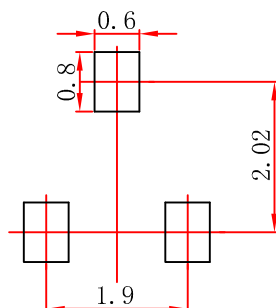
SOT-23 Plastic-Encapsulate Transistors BC817

SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.