

SOT-23 Plastic-Encapsulate Transistors

BC817

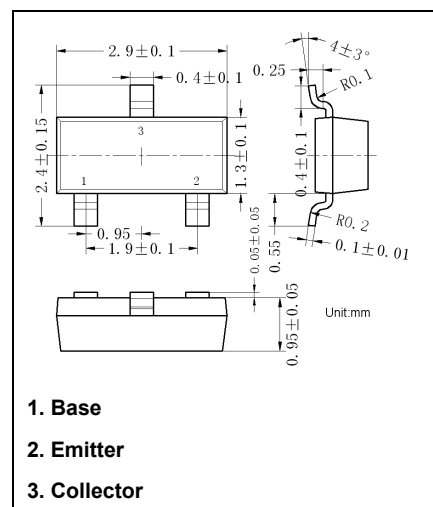
NPN Transistors

Features

- High current (max. 500 mA)
- Low voltage (max. 45 V).
- Complementary types: BC807 (PNP)

Applications

General purpose switching and amplification



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

Symbol	Parameter	Value	Unit
V_{CB0}	Collector Base Voltage	50	V
V_{CEO}	Collector Emitter Voltage	45	V
V_{EBO}	Emitter Base Voltage	5	V
I_c	Collector Current (DC)	500	mA
I_{CM}	Peak Collector Current	1	A
I_{BM}	Peak Base Current	200	mA
P_{tot}	Total Power Dissipation ¹⁾	300	mW
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-65 ~ +150	$^{\circ}\text{C}$
T_{amb}	Operating Ambient Temperature	-65 ~ +150	$^{\circ}\text{C}$

Thermal Characteristics

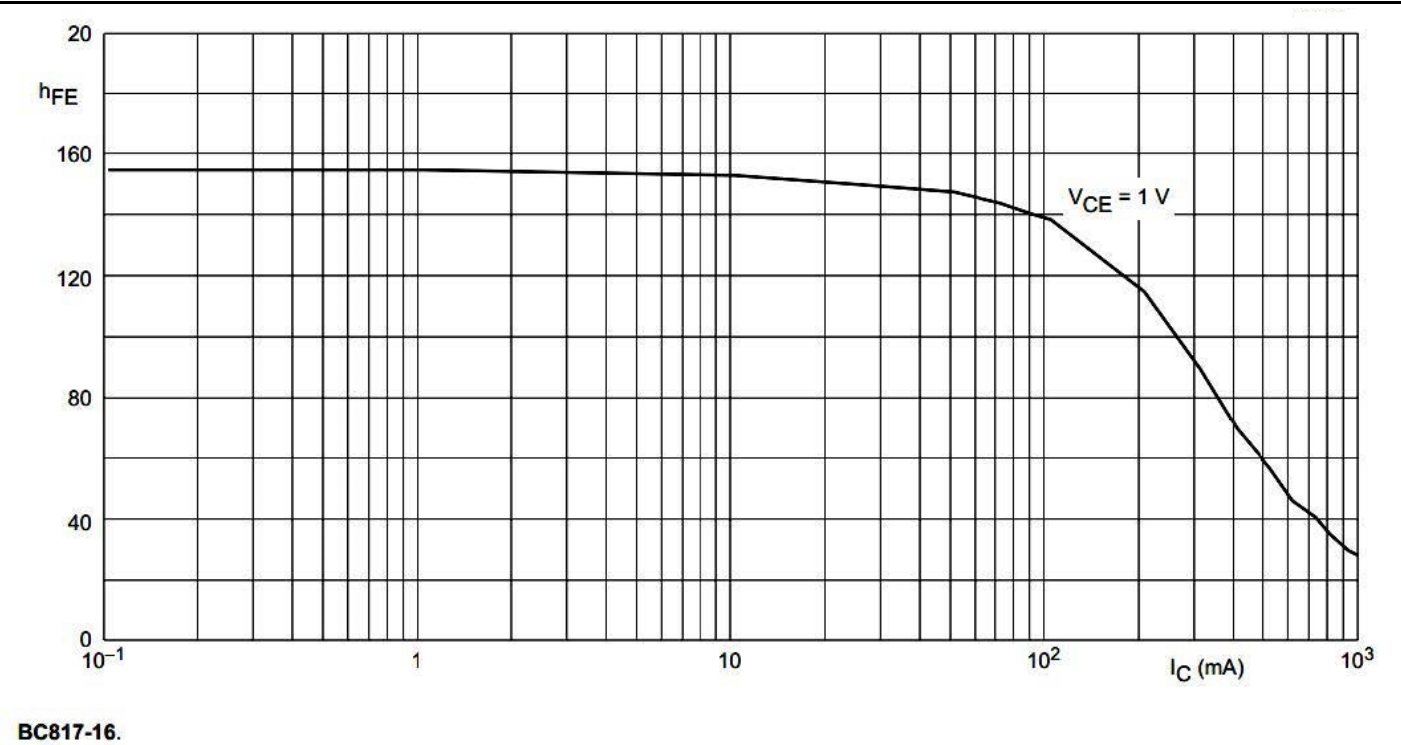
Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	417	$^{\circ}\text{C/W}$

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{CBO}	Collector-base breakdown voltage	$I_C = 10\mu A, I_E = 0$	50			V
V_{CEO}	Collector-emitter breakdown voltage	$I_C = 10mA, I_B = 0$	45			V
V_{EBO}	Emitter-base breakdown voltage	$I_E = 1\mu A, I_C = 0$	5			V
I_{CBO}	Collector cut-off current	$V_{CB} = 45V, I_E = 0$			0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = 4V, I_C = 0$			0.1	μA
$h_{FE(1)}$	DC current gain	$V_{CE} = 1V, I_C = 100mA$	100		600	
$h_{FE(2)}$		$V_{CE} = 1V, I_C = 500mA$	40			
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C = 500mA, I_B = 50mA$			0.7	
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C = 500mA, I_B = 50mA$			1.2	
V_{BE}	Base-emitter voltage	$V_{CE} = 1V, I_C = 500mA$			1.2	
C_{ob}	Collector capacitance	$V_{CB} = 10V, f = 1MHz$		10		pF
f_T	Transition frequency	$V_{CE} = 5V, I_C = 10mA$ $f = 100MHz$	100			MHz

CLASSIFICATION OF $h_{FE(1)}$

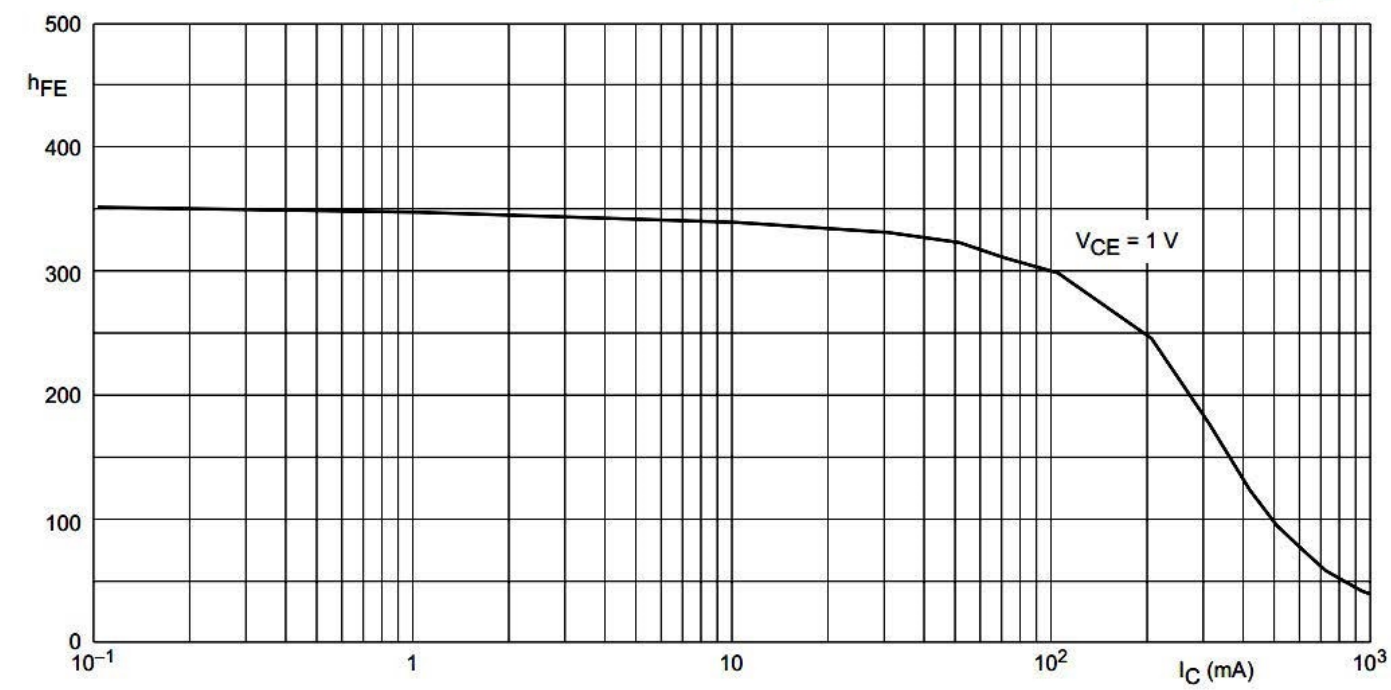
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B	6C

Typical Characteristics



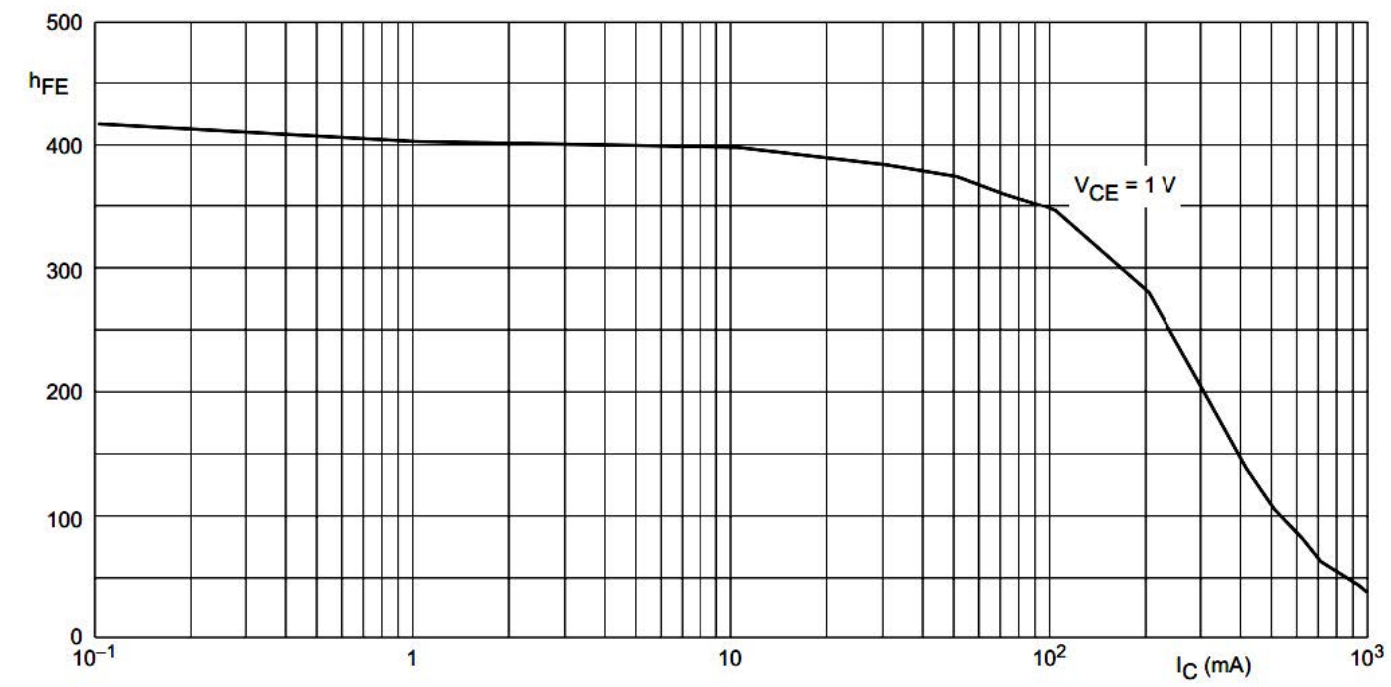
DC current gain; typical values.

Typical Characteristics (Cont.)



BC817-25.

DC current gain; typical values.



BC817-40.

DC current gain; typical values.

Typical Characteristics

