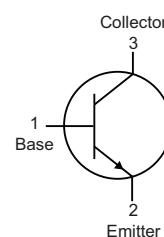
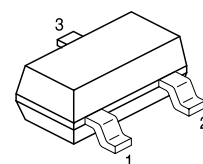


NPN General Purpose Amplifier



Features:

- For general AF applications
- Complementary PNP type available BC807
- High collector current
- High current gain
- Low collector-emitter saturation voltage

Applications:

- General purpose medium power amplifier
- Switching requiring collector currents up to 1.2mA

Pin Configuration:

1. Base
2. Emitter
3. Collector

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector - Base Voltage	V_{CBO}	50	V
Collector - Emitter Voltage	V_{CEO}	45	
Emitter - Base Voltage	V_{ebo}	5	
Collector Current Continuous	I_C	500	mA
Collector Dissipation	P_C	300	mW
Junction and Storage Temperature	T_j, T_{stg}	-65 to +150	°C

NPN General Purpose Amplifier

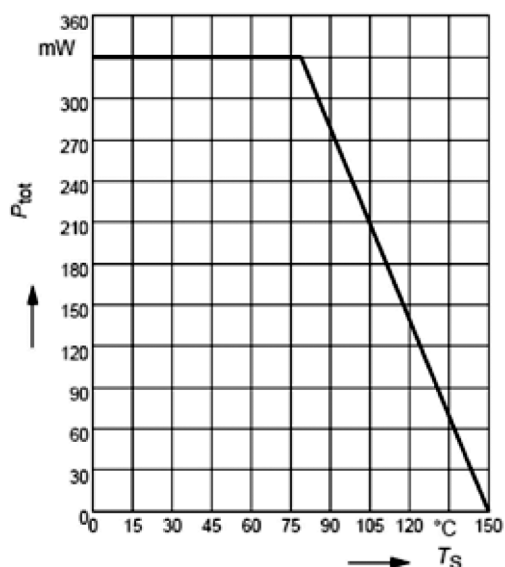
Electrical Characteristics ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	45			
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	5			
Collector Cut-off Current	I_{CBO}	$V_{CB}=25\text{V}, I_E=0$			-0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{CE}=4\text{V}, I_E=0$			-0.1	
DC Current Gain	BC817 BC817-16 BC817-25 BC817-40	h_{FE}	$V_{CE}=1\text{V}, I_C=-100\text{mA}$	100 100 160 250	600 250 400 600	
DC Current Gain	BC817 BC817-16 BC817-25 BC817-40	h_{FE}	$V_{CE}=1\text{V}, I_C=-300\text{mA}$	40 60 100 170		
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	
Output Capacitance	C_{obo}	$V_{CB}=10\text{V}, f=1\text{MHz}$		6		pF
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=50\text{mA}$ $f=100\text{MHz}$		170		MHz

Typical Characteristics: $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified

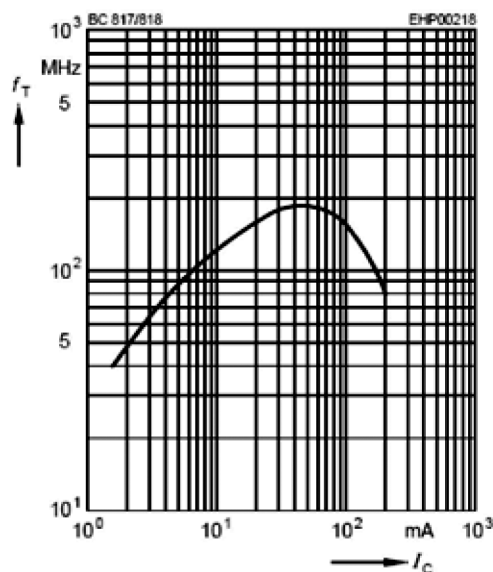
Ratings & Characteristic Curves

Total power dissipation $P_{tot} = f(T_S)$



Transition frequency $f_T = f(I_C)$

$V_{CE} = 5\text{V}$



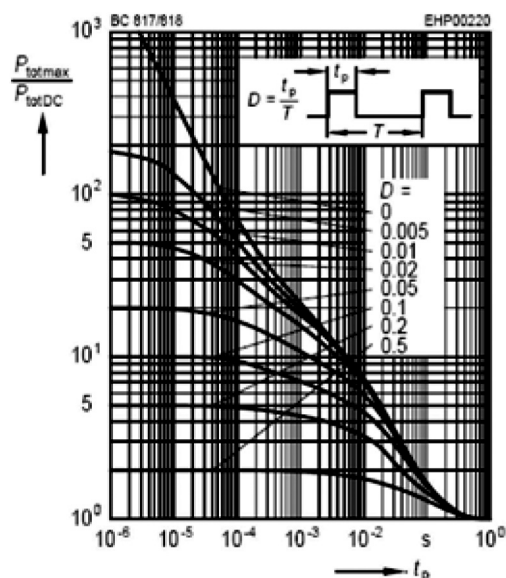
NPN General Purpose Amplifier

Typical Characteristics: $T_{amb} = 25^\circ\text{C}$ unless otherwise specified

Ratings & Characteristic Curves

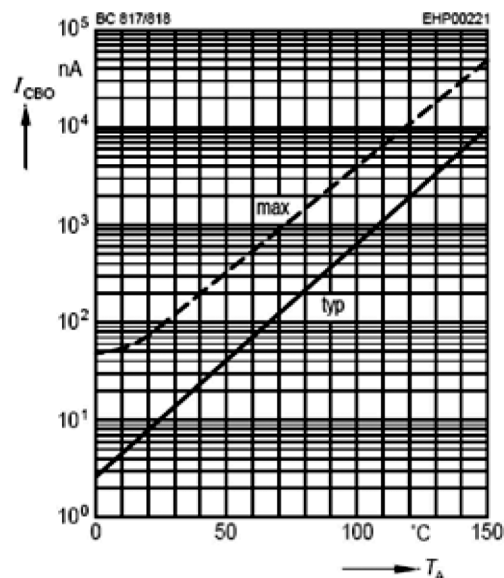
Permissible pulse load

$$P_{totmax} / P_{totDC} = f(t_p)$$



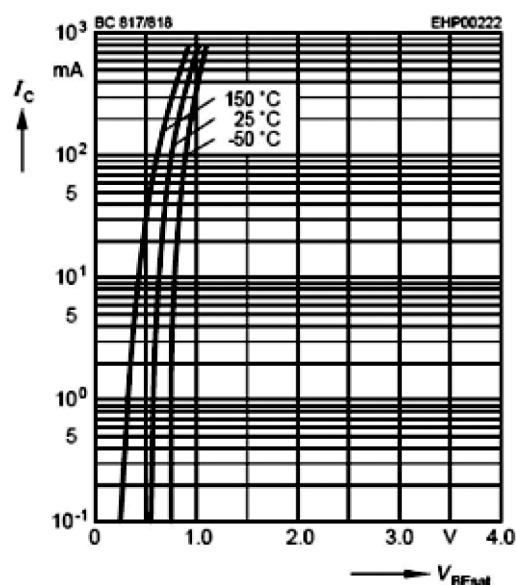
Collector cutoff current $I_{CBO} = f(T_A)$

$$V_{CBO} = 25\text{V}$$



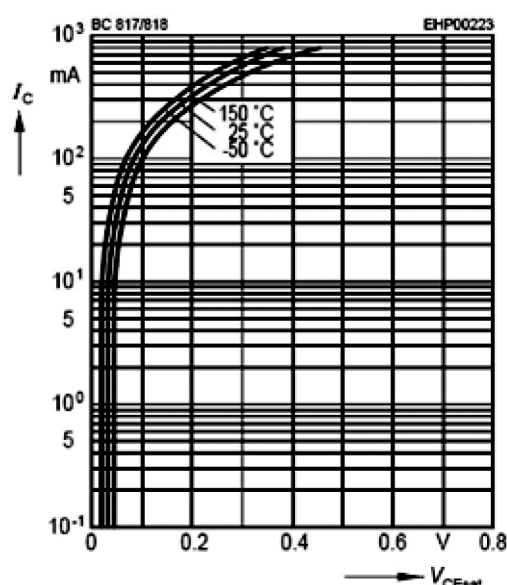
Base-emitter saturation voltage

$$I_C = f(V_{BEsat}), h_{FE} = 10$$



Collector-emitter saturation voltage

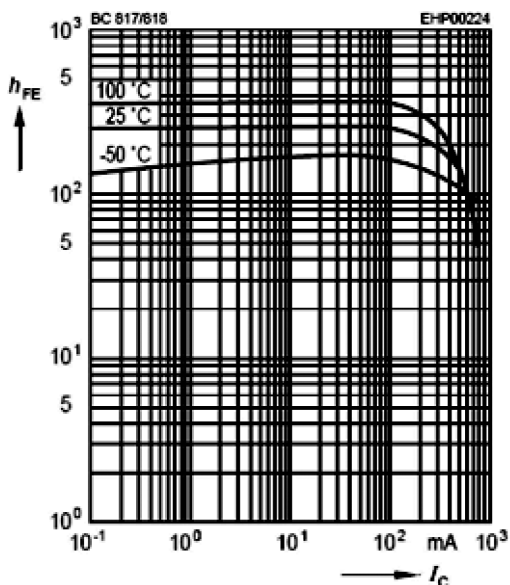
$$I_C = f(V_{CEsat}), h_{FE} = 10$$



NPN General Purpose Amplifier

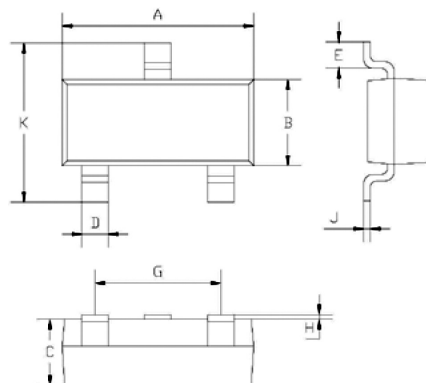
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 1V$



Package Outline

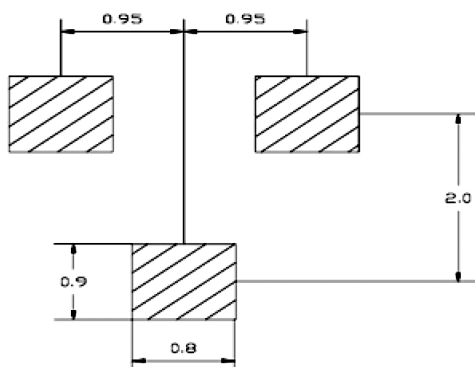
Plastic surface mounted package



Dimensions	Min.	Max.
A	1.8	2.2
B	1.15	1.35
C	1 Typical	
D	0.15	0.35
E	0.25	0.4
G	1.2	1.4
H	0.02	0.1
J	0.1 Typical	
K	2.1	2.3

Dimensions : Millimetres

Soldering Footprint



Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, 0.5A, 45V, SOT23	BC817
	BC817-16
	BC817-25
	BC817-40

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