



## NPN General Purpose Amplifier

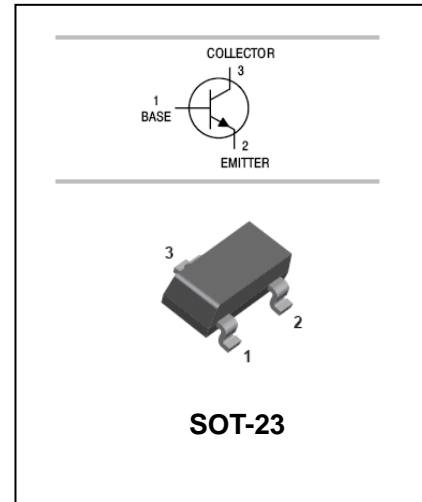
## BC817-16/-25/-40

### FEATURES

- For general AF application.
- Complementary PNP type available BC807.
- High collector current, high current gain.
- Low collector-emitter saturation voltage.



Lead-free



### ORDERING INFORMATION

Type No.	Marking	Package Code
BC817-16	6A	SOT-23
BC817-25	6B	SOT-23
BC817-40	6C	SOT-23

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

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 -Continuous	500	mA
$P_C$	Collector Dissipation	300	mW
$T_j, T_{stg}$	Junction and Storage Temperature	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



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Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA I_B=0$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=25V I_E=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V I_C=0$			0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=1V I_C=100mA$	100 160 250		250 400 600	
		$V_{CE}=1V I_C=300mA$	60 100 170			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA I_B=50mA$			0.7	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA I_B=50mA$			1.2	V
Collector capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		6		pF
Transition frequency	$f_T$	$V_{CE}=5V I_C=50mA$ $f=100MHz$		170		MHz

**CLASSIFICATION OF  $H_{FE(1)}$**

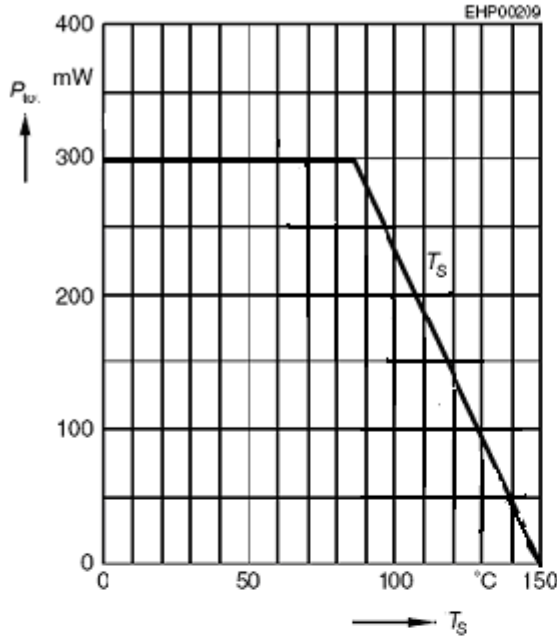
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B*	6C

**TYPICAL CHARACTERISTICS @  $T_a=25^\circ C$  unless otherwise specified**

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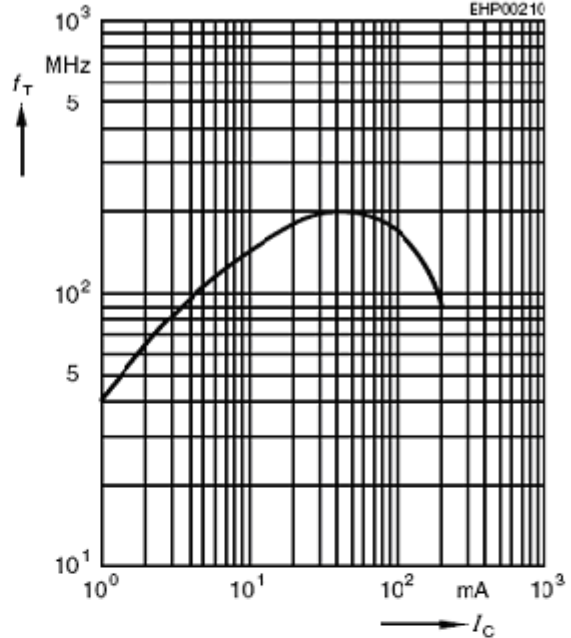
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Total power dissipation  $P_{tot} = f(T_S)$



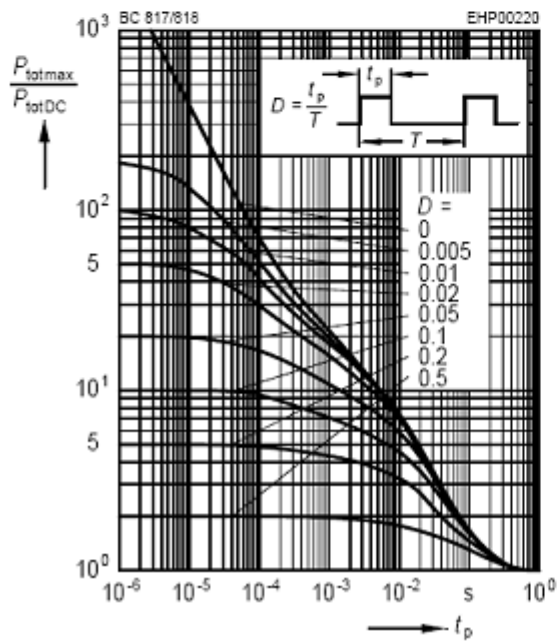
Transition frequency  $f_T = f(I_C)$

$V_{CE} = 5V$



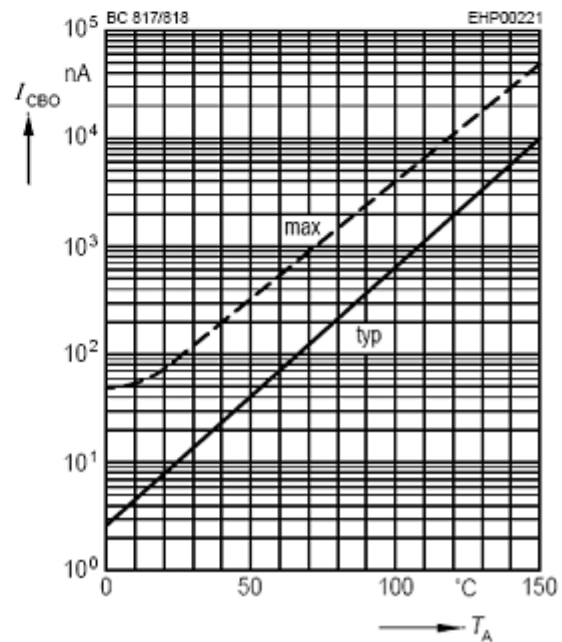
Permissible pulse load

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



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

$V_{CBO} = 25V$

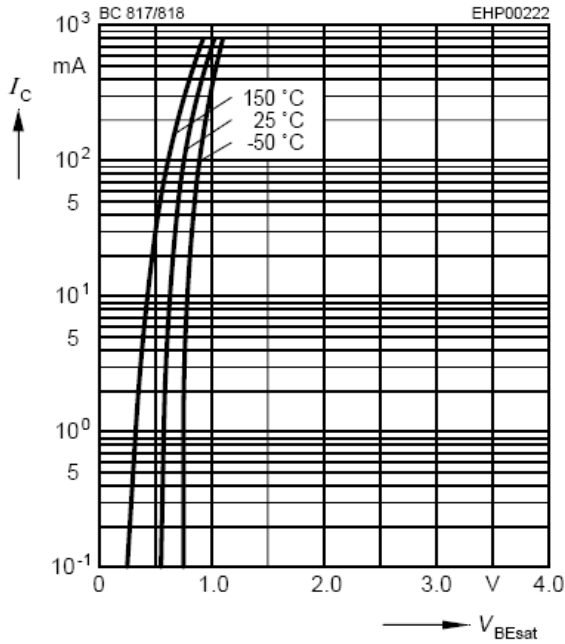


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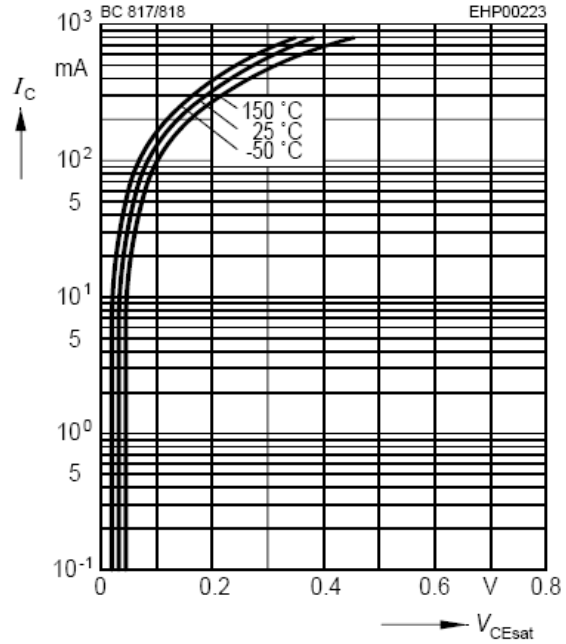
**Base-emitter saturation voltage**

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



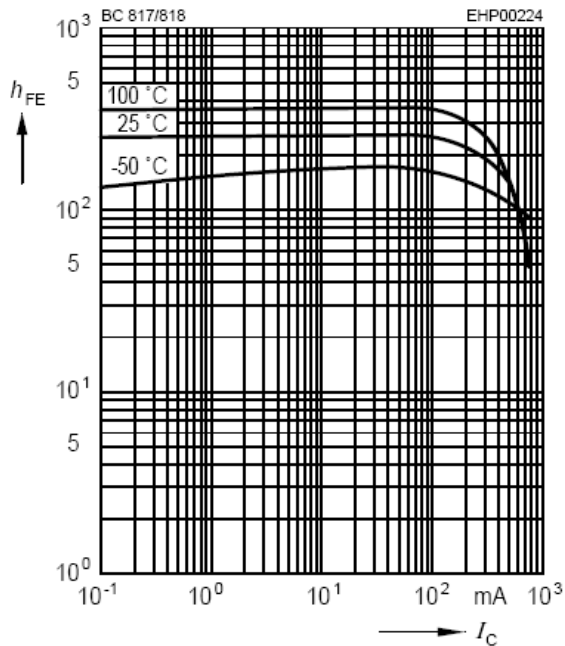
**Collector-emitter saturation voltage**

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



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

$V_{CE} = 1V$



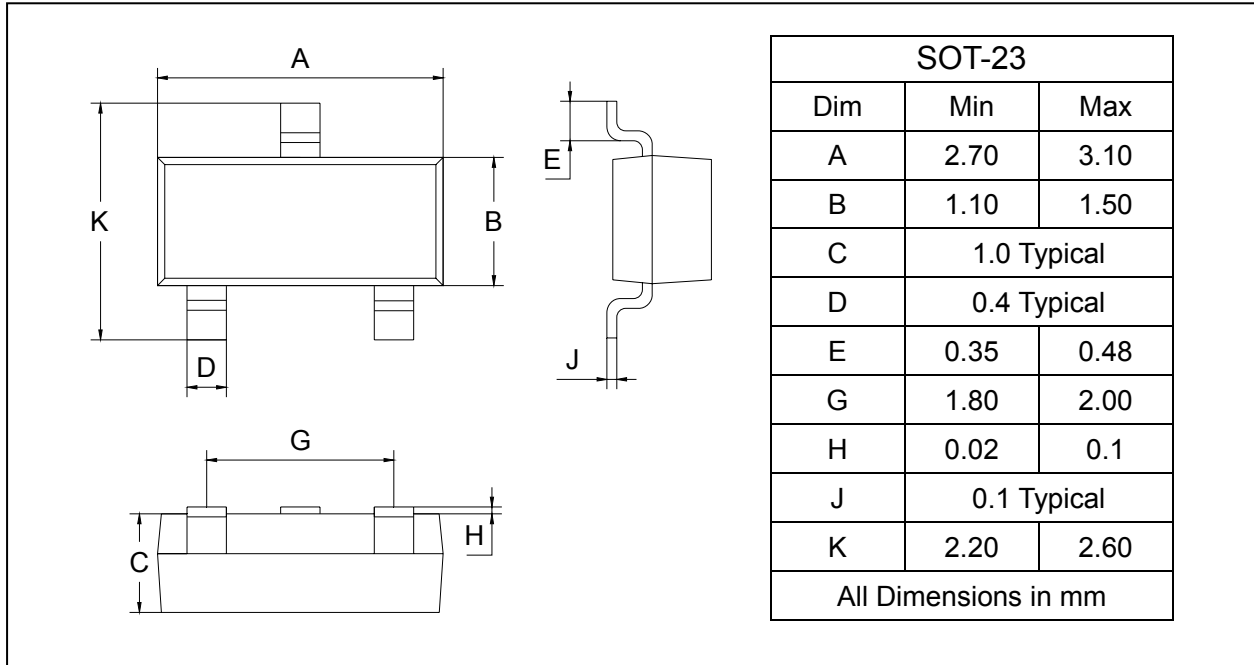
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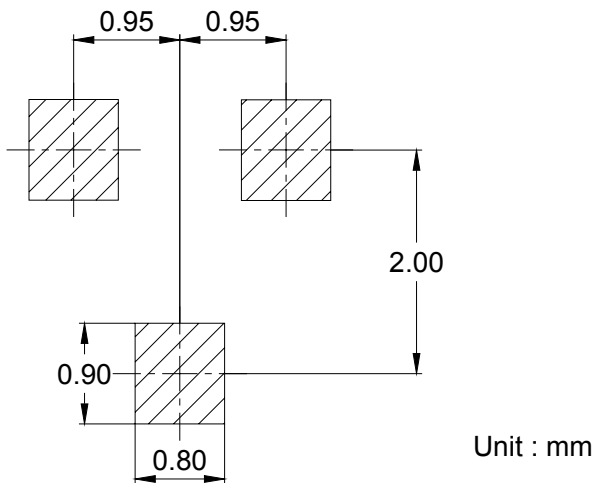
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
BC817-16/-25/-40	SOT-23	3000/Tape&Reel