

NPN General Purpose Amplifier

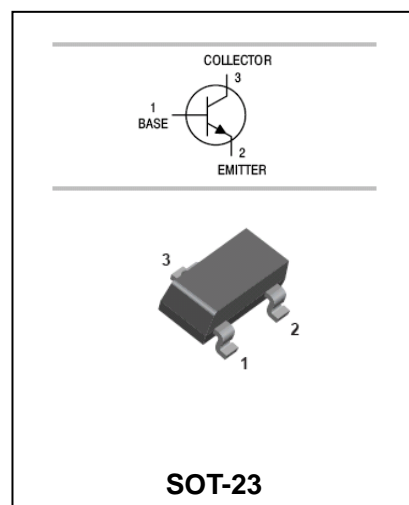
BC817-16/-25/-40

FEATURES

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



Lead-free



APPLICATIONS

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

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

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V$ $I_C=0$			0.1	μA
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		μF
Transition frequency	f_T	$V_{CE}=5V$ $I_C=50mA$ $f=100MHz$		170		MHz

CLASSIFICATION OF $H_{FE(1)}$

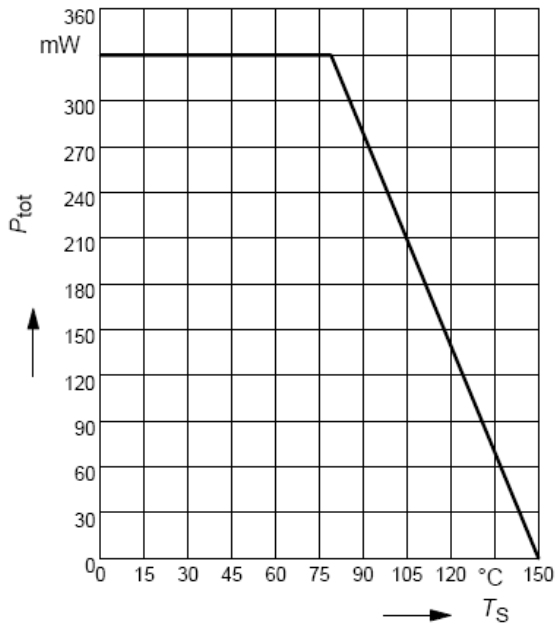
Rank	BC817-16	BC817-25	BC817-40
Range	100-250	160-400	250-600
Marking	6A	6B•	6C

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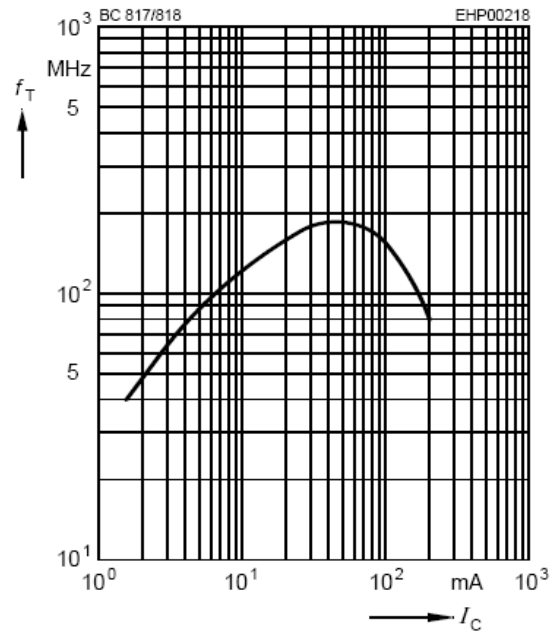
TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

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



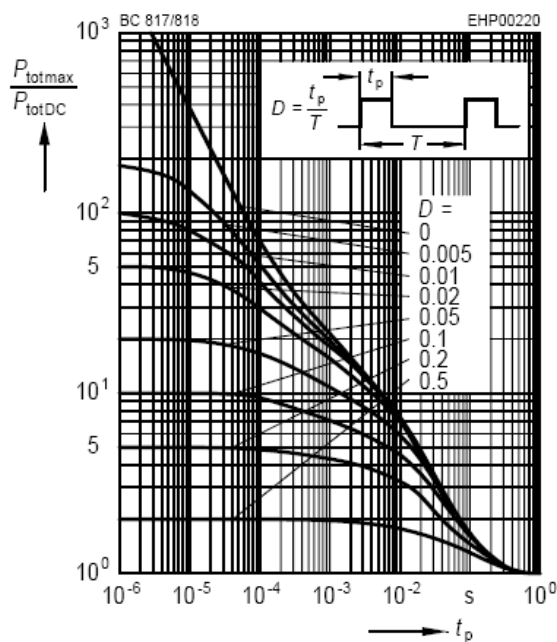
Transition frequency $f_T = f(I_C)$

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



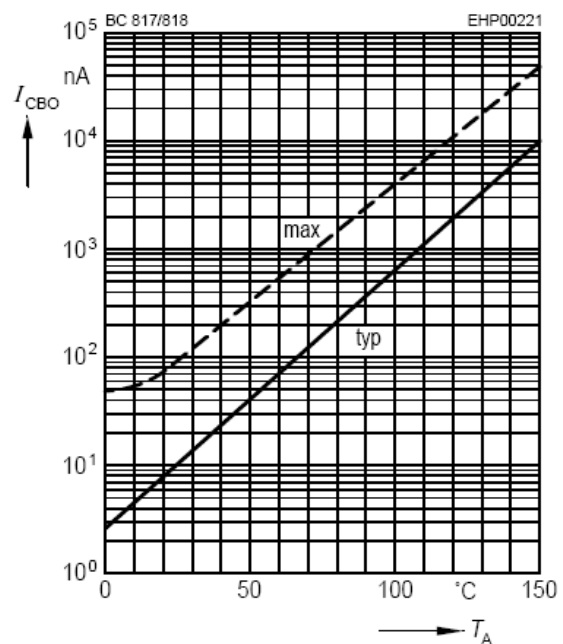
Permissible pulse load

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



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

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

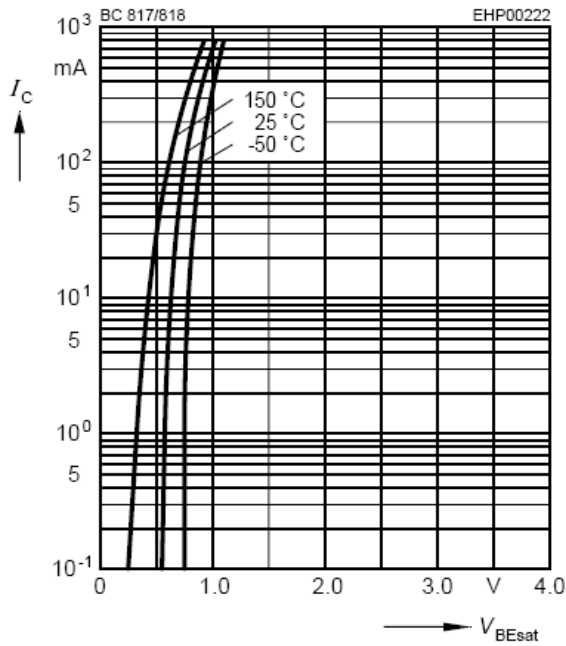


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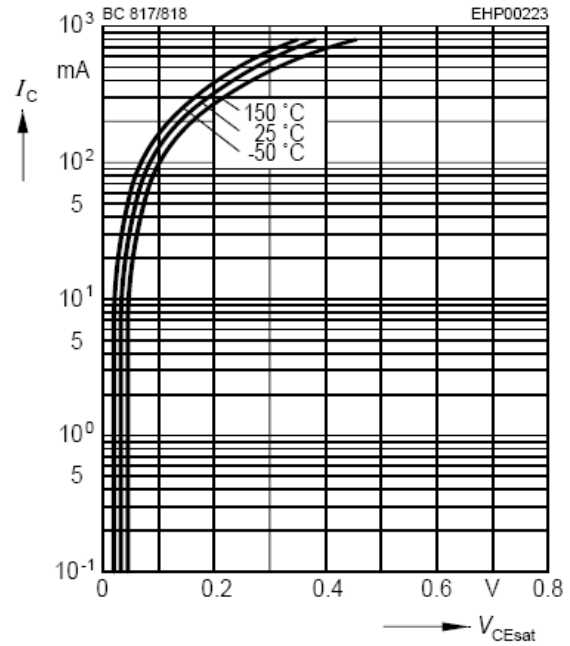
Base-emitter saturation voltage

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



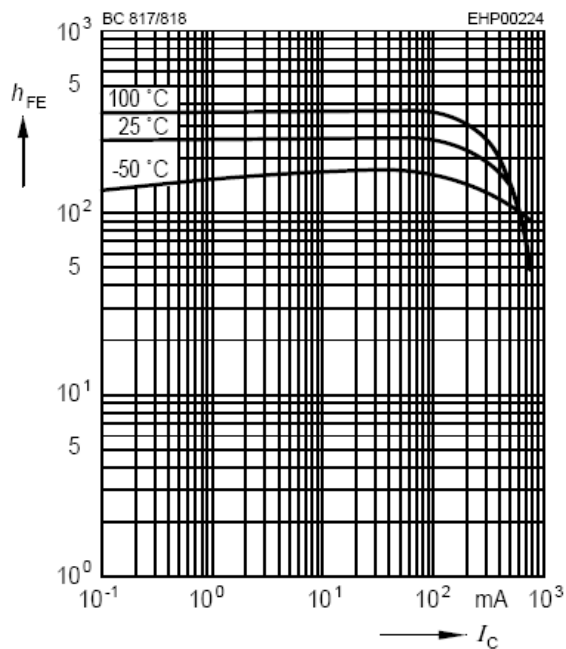
Collector-emitter saturation voltage

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



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

$$V_{CE} = 1V$$



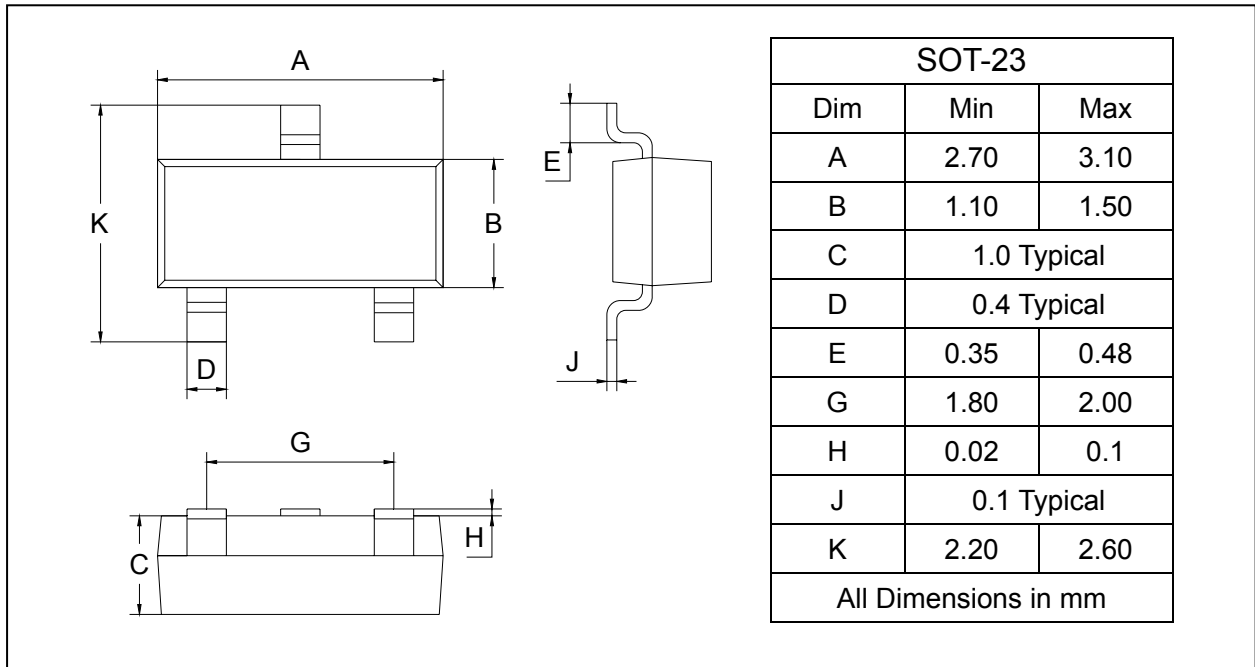
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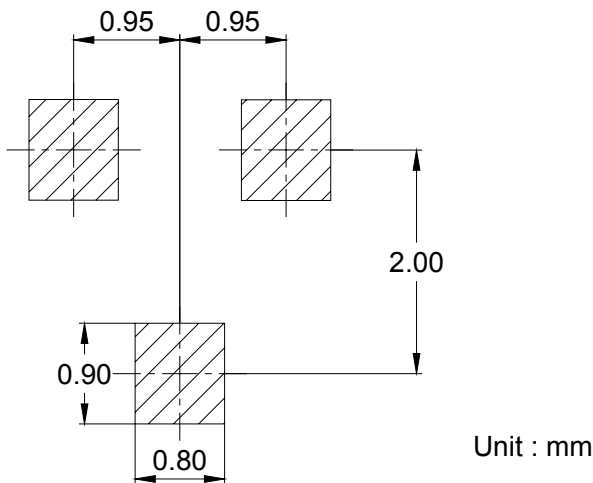
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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