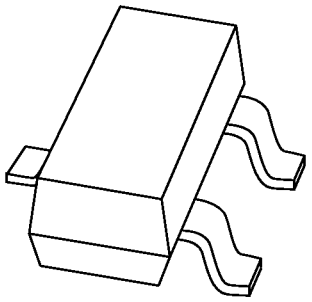
DATA SHEET



BC807; BC808
PNP general purpose transistors

Product specification
1997 Feb 28
Supersedes data of September 1994
File under Discrete Semiconductors, SC04

Philips
Semiconductors

PHILIPS

PNP general purpose transistors BC807; BC808

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 45 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT23 plastic package.
NPN complements: BC817 and BC818.

MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BC807	5Dp	BC808	5Hp
BC807-16	5Ap	BC808-16	5Ep
BC807-25	5Bp	BC808-25	5Fp
BC807-40	5Cp	BC808-40	5Gp

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

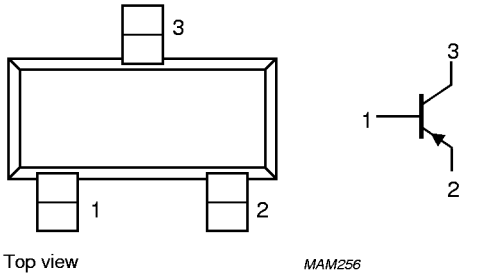


Fig.1 Simplified outline (SOT23) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BC807		–	–50	V
	BC808		–	–30	V
V_{CEO}	collector-emitter voltage	open base			
	BC807		–	–45	V
	BC808		–	–25	V
I_{CM}	peak collector current		–	–1	A
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	–	250	mW
h_{FE}	DC current gain	$I_C = -100$ mA; $V_{CE} = -1$ V	100	600	
		$I_C = -500$ mA; $V_{CE} = -1$ V	40	–	
f_T	transition frequency	$I_C = -10$ mA; $V_{CE} = -5$ V; f = 100 MHz	80	–	MHz

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BC807		–	–50	V
	BC808		–	–30	V
V_{CEO}	collector-emitter voltage	open base; I_C = –10 mA			
	BC807		–	–45	V
	BC808		–	–25	V
V_{EBO}	emitter-base voltage	open collector	–	–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	$T_{amb} \leq 25$ °C; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

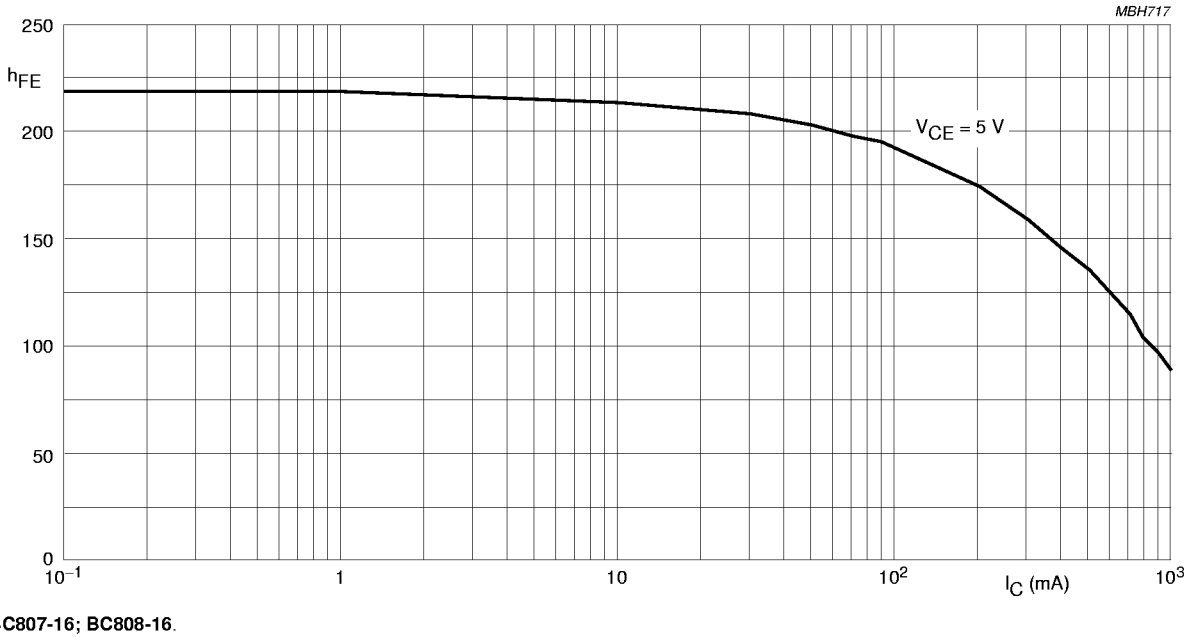
CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = –20 V	–	–	–100	nA
		I_E = 0; V_{CB} = –20 V; T_j = 150 °C	–	–	–5	μA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = –5 V	–	–	–100	nA
h_{FE}	DC current gain	I_C = –100 mA; V_{CE} = –1 V; note 1 see Figs 2, 3 and 4				
	BC807; BC808		100	–	600	
	BC807-16; BC808-16		100	–	250	
	BC807-25; BC808-25		160	–	400	
	BC807-40; BC808-40		250	–	600	
h_{FE}	DC current gain	I_C = –500 mA; V_{CE} = –1 V; note 1	40	–	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –500 mA; I_B = –50 mA; note 1	–	–	–700	mV
V_{BE}	base-emitter voltage	I_C = –500 mA; V_{CE} = –1 V; notes 1 and 2	–	–	–1.2	V
C_c	collector capacitance	I_E = i_e = 0; V_{CB} = –10 V; f = 1 MHz	–	9	–	pF
f_T	transition frequency	I_C = –10 mA; V_{CE} = –5 V; f = 100 MHz	80	–	–	MHz

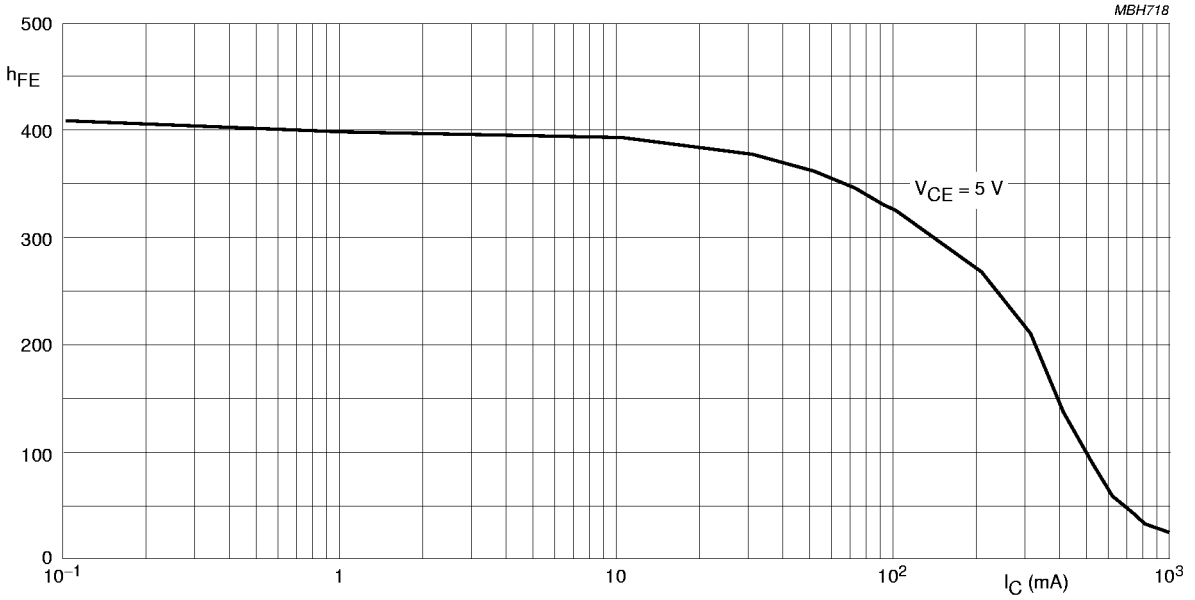
Notes

1. Pulse test: $t_p \leq 300$ μs; $\delta \leq 0.02$.
2. V_{BE} decreases by about –2 mV/K with increasing temperature.



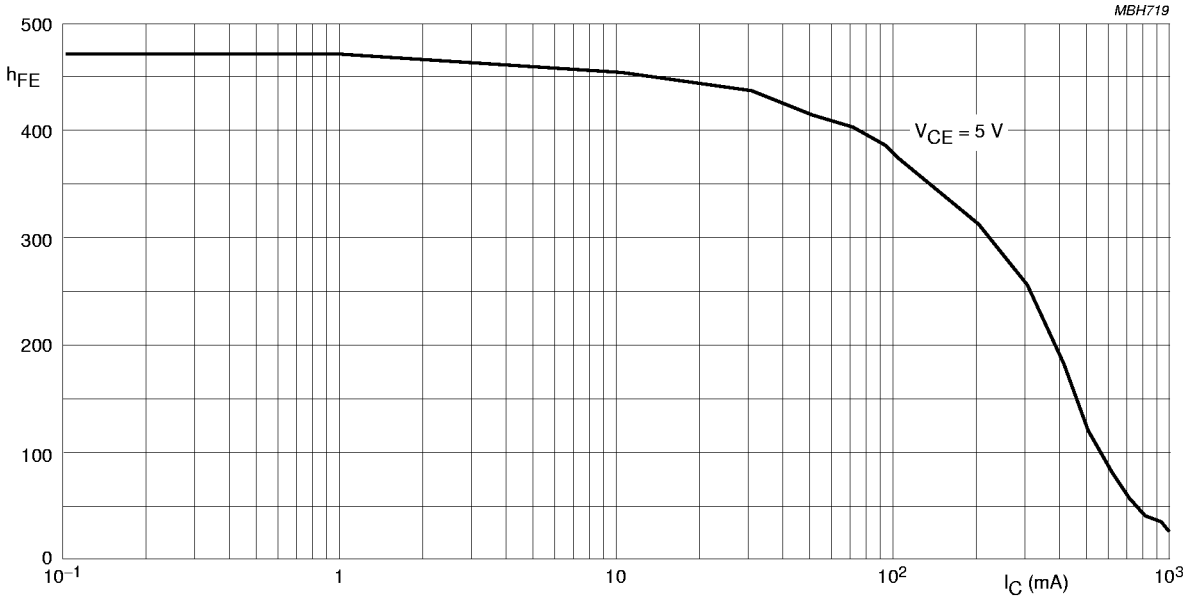
BC807-16; BC808-16.

Fig.2 DC current gain; typical values.



BC807-25; BC808-25.

Fig.3 DC current gain; typical values.

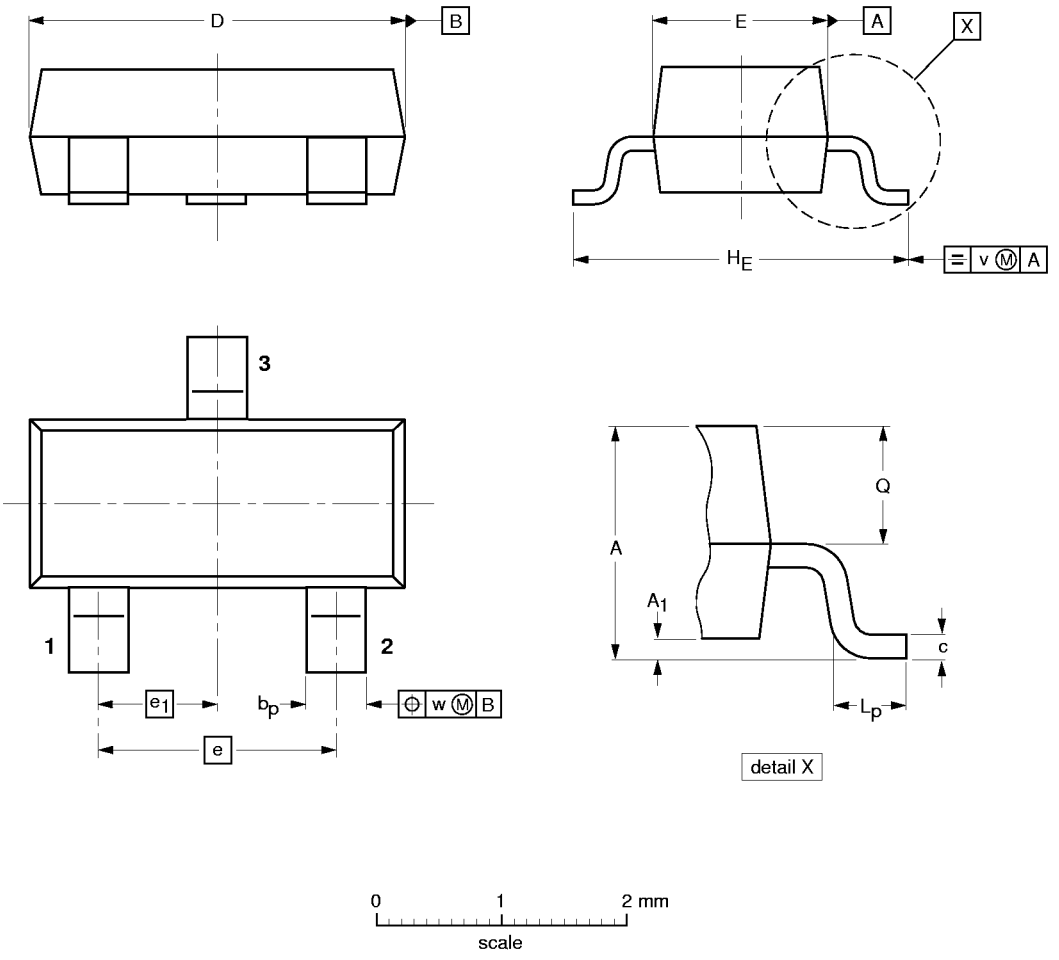


BC807-40; BC808-40.

Fig.4 DC current gain; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT23**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max.	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23						97-02-28