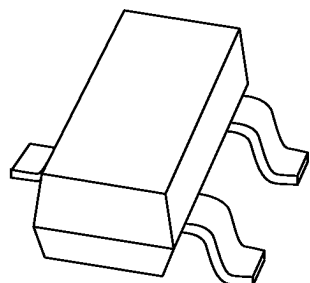


DATA SHEET



BC807; BC808 PNP general purpose transistors

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

1997 Feb 28

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

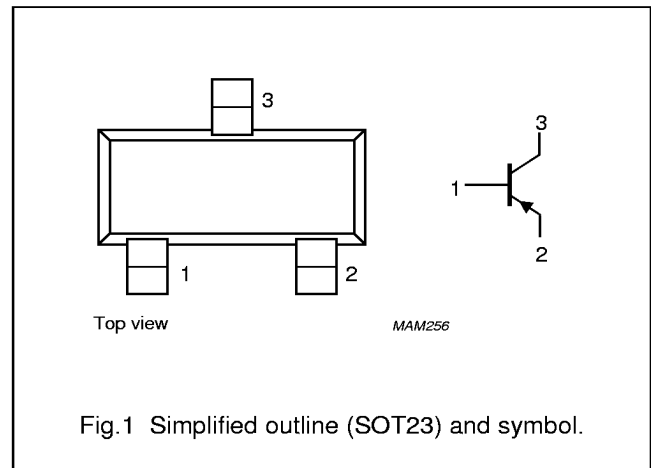
PNP transistor in a SOT23 plastic package.
NPN complements: BC817 and BC818.

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



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	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	250	mW
h_{FE}	DC current gain	$I_C = -100\text{ mA}; V_{CE} = -1\text{ V}$	100	600	
		$I_C = -500\text{ mA}; V_{CE} = -1\text{ V}$	40	–	
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	80	–	MHz

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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} ≤ 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-a}	thermal resistance from junction to ambient	note 1	500	K/W

Note

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

PNP general purpose transistors

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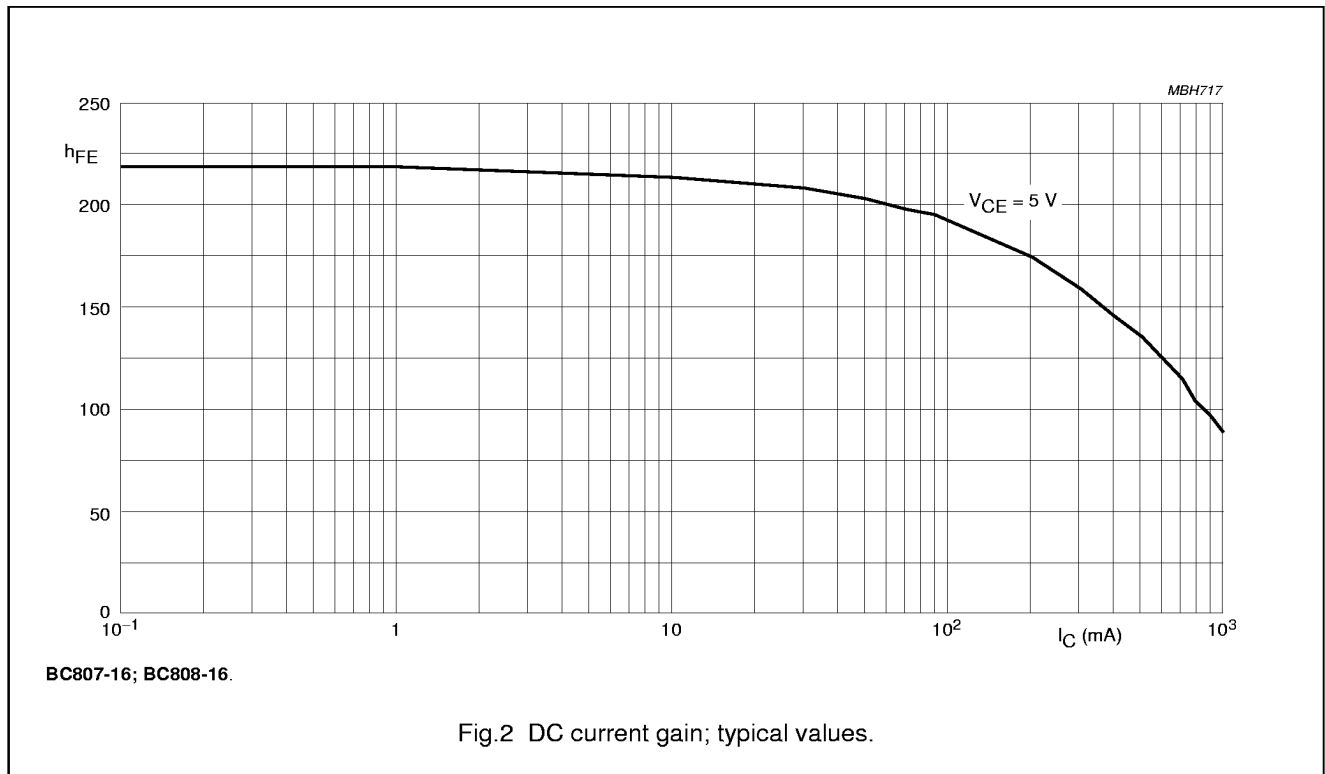
CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

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

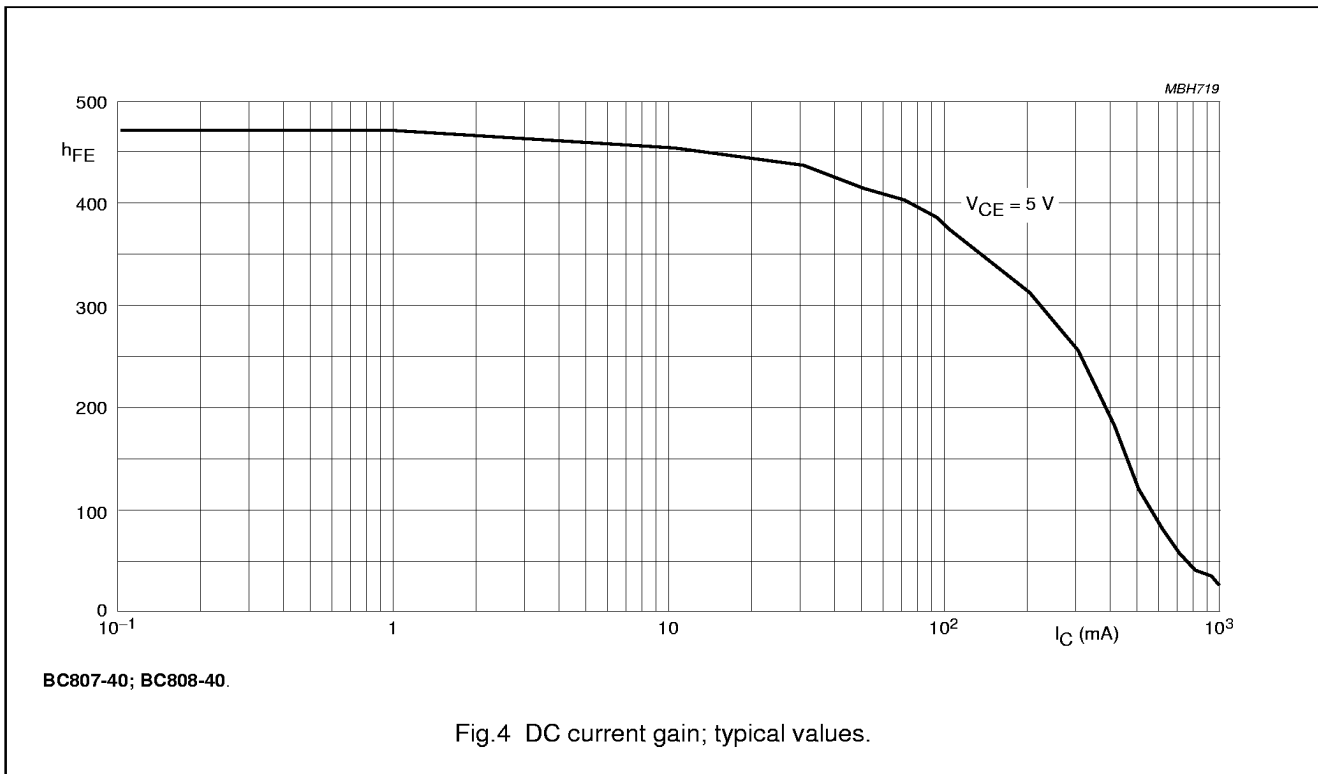
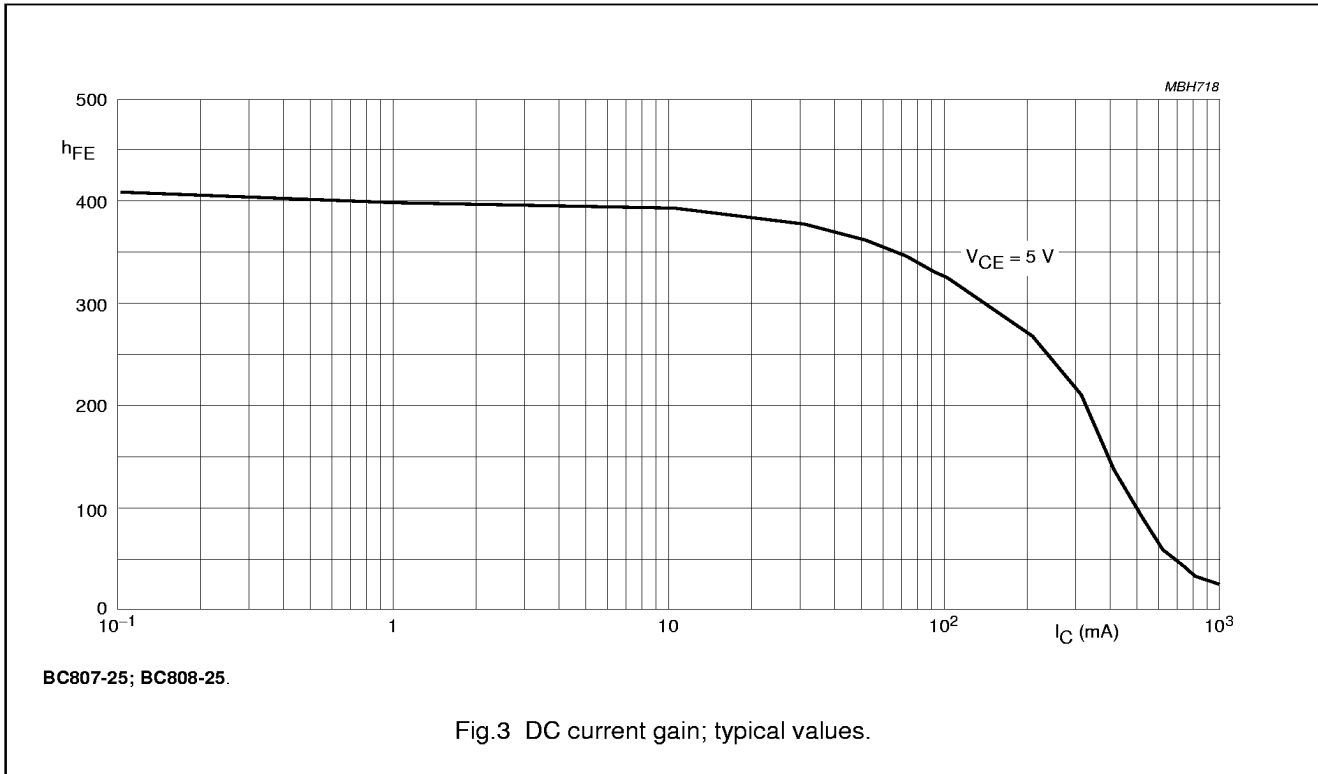
Notes

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



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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23

