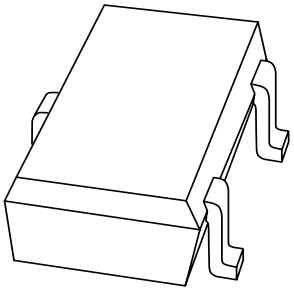
DATA SHEET



BC807W; BC808W
PNP general purpose transistors

Product specification
1997 Jun 09
Supersedes data of March 1993
File under Discrete Semiconductors, SC04

Philips
Semiconductors

PHILIPS

PNP general purpose transistors BC807W; BC808W

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT323 plastic package.
NPN complements: BC817W and BC818W.

MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BC807W	5Dt	BC808W	5Ht
BC807-16W	5At	BC808-16W	5Et
BC807-25W	5Bt	BC808-25W	5Ft
BC807-40W	5Ct	BC808-40W	5Gt

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

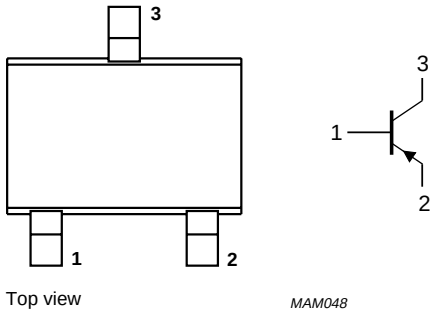


Fig.1 Simplified outline (SOT323) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BC807W		–	–50	V
	BC808W		–	–30	V
V_{CEO}	collector-emitter voltage	open base			
	BC807W		–	–45	V
	BC808W		–	–25	V
I_{CM}	peak collector current		–	–1	A
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	–	200	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			
	BC807W		–	–50	V
	BC808W		–	–30	V
V_{CEO}	collector-emitter voltage	open base; I_C = –10 mA			
	BC807W		–	–45	V
	BC808W		–	–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	–	200	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	625	K/W

Note

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

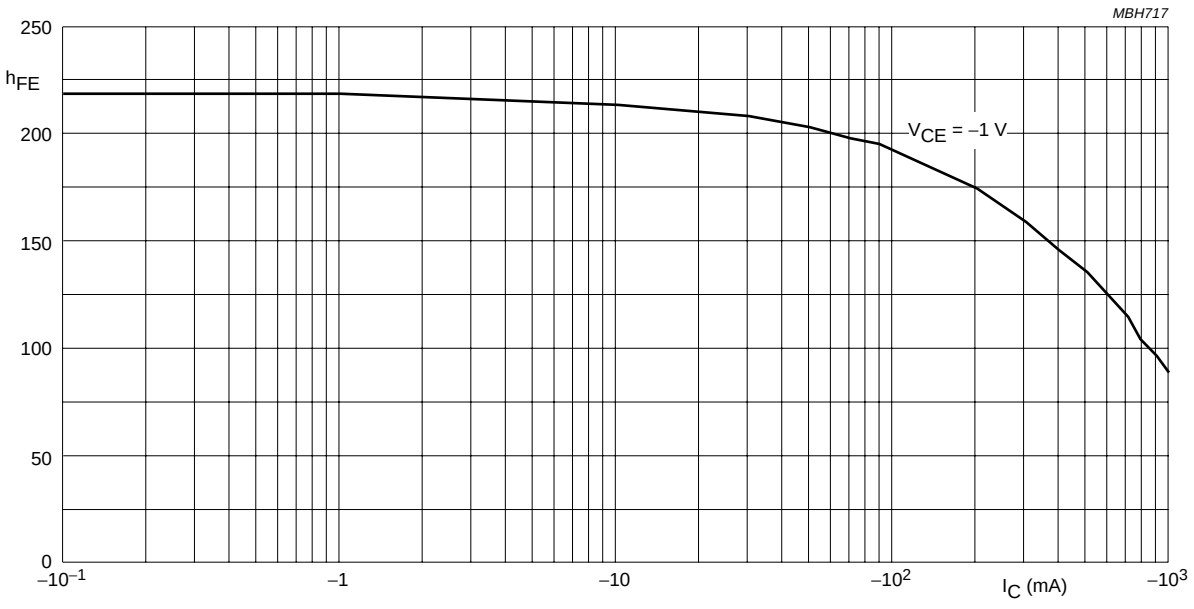
CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	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			
	BC807W; BC808W		100	600	
	BC807-16W; BC808-16W		100	250	
	BC807-25W; BC808-25W		160	400	
	BC807-40W; BC808-40W		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; note 1	–	–1.2	V
C_c	collector capacitance	I_E = i_e = 0; V_{CB} = –10 V; f = 1 MHz	–	10	pF
f_T	transition frequency	I_C = –10 mA; V_{CE} = –5 V; f = 100 MHz	80	–	MHz

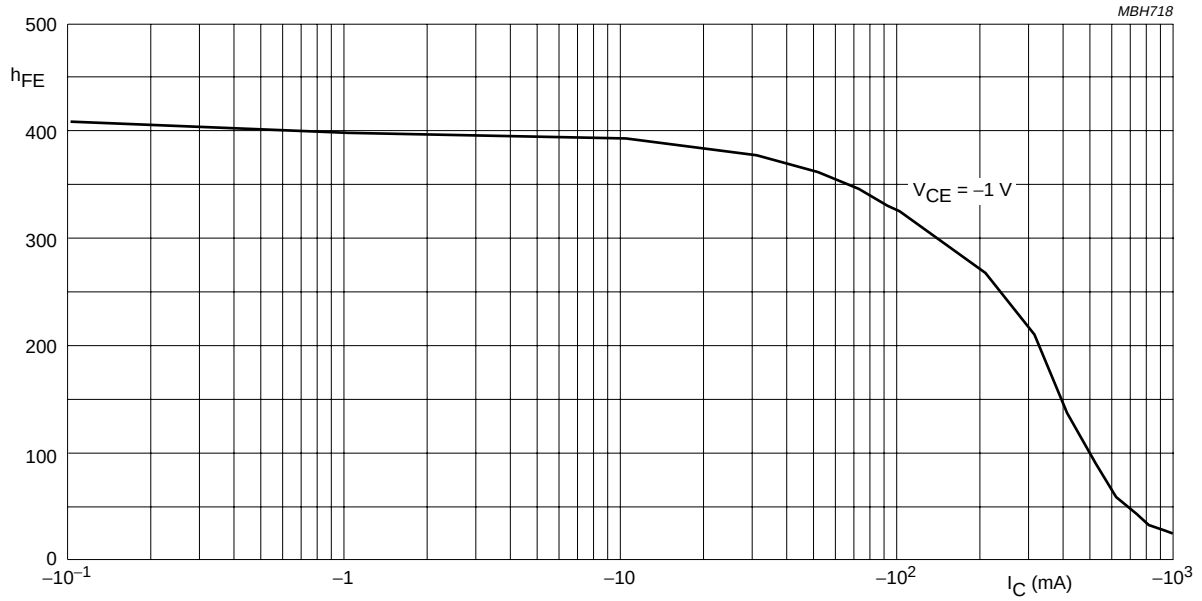
Note

1. Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.



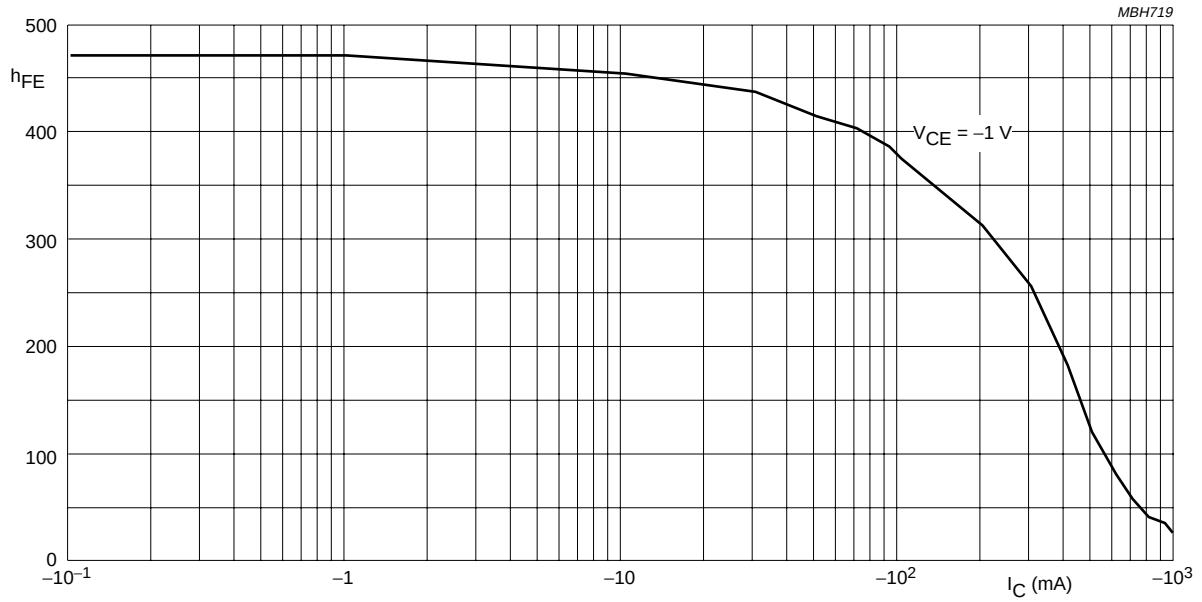
BC807-16W; BC808-16W.

Fig.2 DC current gain; typical values.



BC807-25W; BC808-25W.

Fig.3 DC current gain; typical values.

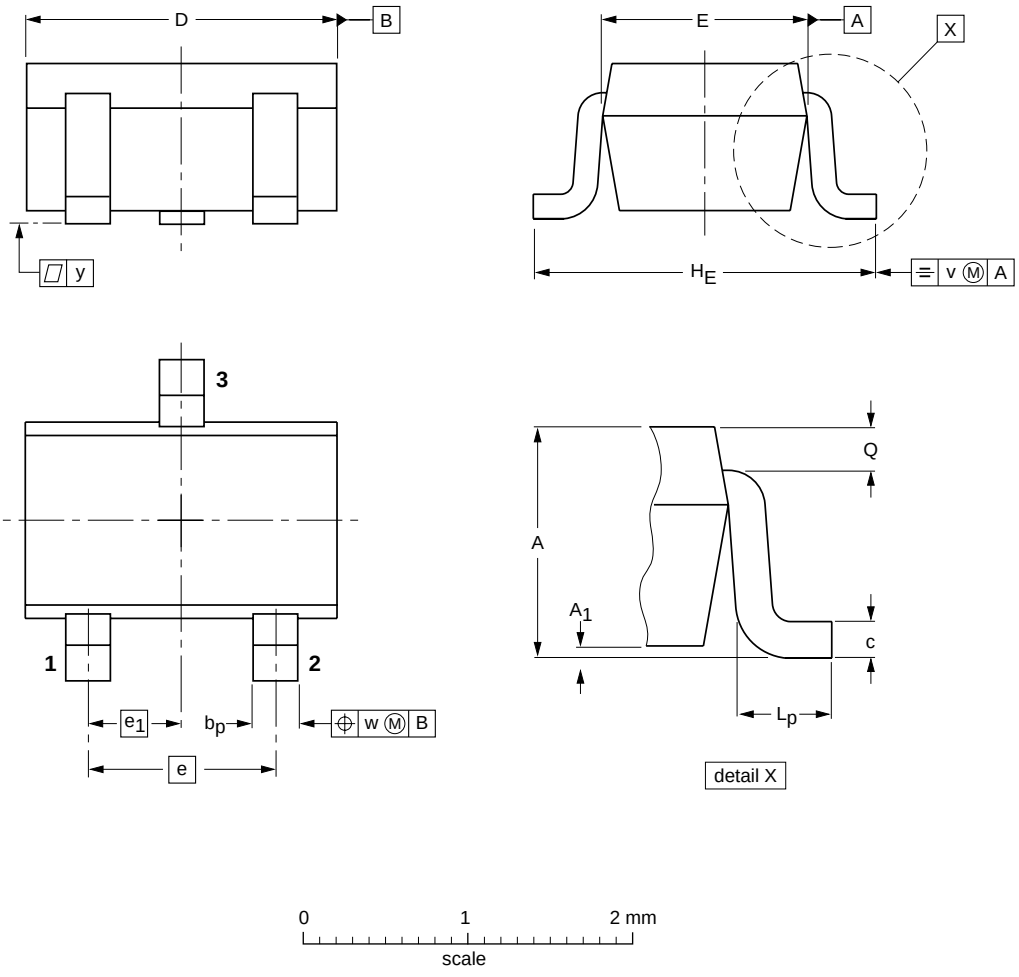


BC807-40W; BC808-40W.

Fig.4 DC current gain; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT323**



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 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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