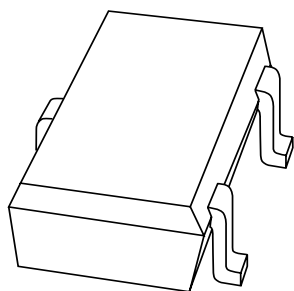


# DATA SHEET



## **BC807W; BC808W** PNP general purpose transistors

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

1997 Jun 09

## PNP general purpose transistors

## BC807W; BC808W

## FEATURES

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

## APPLICATIONS

- General purpose switching and amplification.

## DESCRIPTION

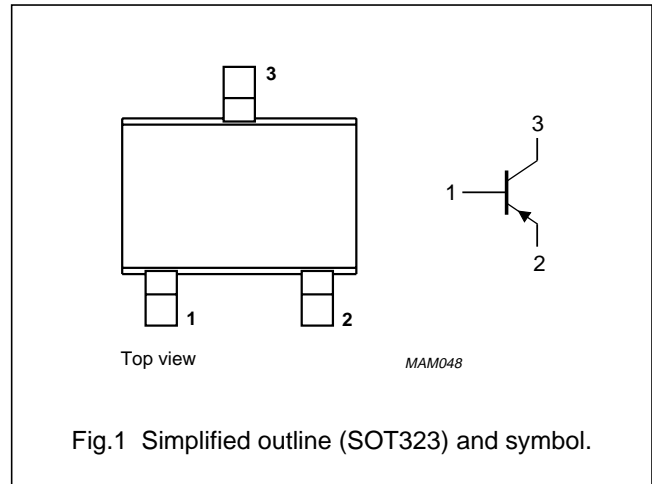
PNP transistor in a SOT323 plastic package.  
NPN complements: BC817W and BC818W.

## 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



## 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	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	200	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

## PNP general purpose transistors

## BC807W; BC808W

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter			
	BC807W		–	–50	V
	BC808W		–	–30	V
V <sub>CEO</sub>	collector-emitter voltage	open base; I <sub>C</sub> = –10 mA			
	BC807W		–	–45	V
	BC808W		–	–25	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–500	mA
I <sub>CM</sub>	peak collector current		–	–1	A
I <sub>BM</sub>	peak base current		–	–200	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	200	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

**Note**

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

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	625	K/W

**Note**

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

PNP general purpose transistors

BC807W; BC808W

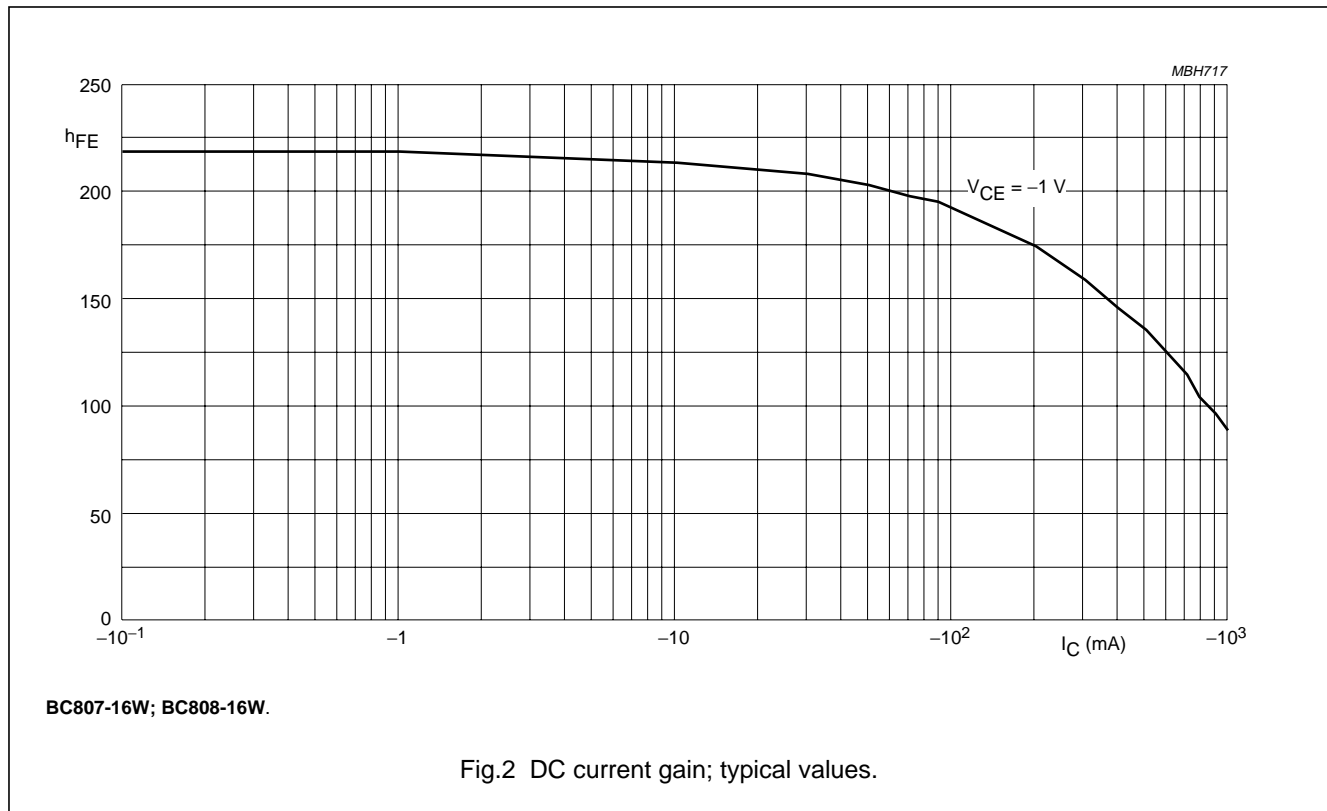
**CHARACTERISTICS**

T<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = -20 V	-	-100	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = -20 V; T <sub>j</sub> = 150 °C	-	-5	μA
I <sub>EBO</sub>	emitter cut-off current	I <sub>C</sub> = 0; V <sub>EB</sub> = -5 V	-	-100	nA
h <sub>FE</sub>	DC current gain BC807W; BC808W BC807-16W; BC808-16W BC807-25W; BC808-25W BC807-40W; BC808-40W	I <sub>C</sub> = -100 mA; V <sub>CE</sub> = -1 V; note 1; see Figs 2, 3 and 4	100	600	
			100	250	
			160	400	
			250	600	
h <sub>FE</sub>	DC current gain	I <sub>C</sub> = -500 mA; V <sub>CE</sub> = -1 V; note 1	40	-	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = -500 mA; I <sub>B</sub> = -50 mA; note 1	-	-700	mV
V <sub>BE</sub>	base-emitter voltage	I <sub>C</sub> = -500 mA; V <sub>CE</sub> = -1 V; note 1	-	-1.2	V
C <sub>c</sub>	collector capacitance	I <sub>E</sub> = i <sub>e</sub> = 0; V <sub>CB</sub> = -10 V; f = 1 MHz	-	10	pF
f <sub>T</sub>	transition frequency	I <sub>C</sub> = -10 mA; V <sub>CE</sub> = -5 V; f = 100 MHz	80	-	MHz

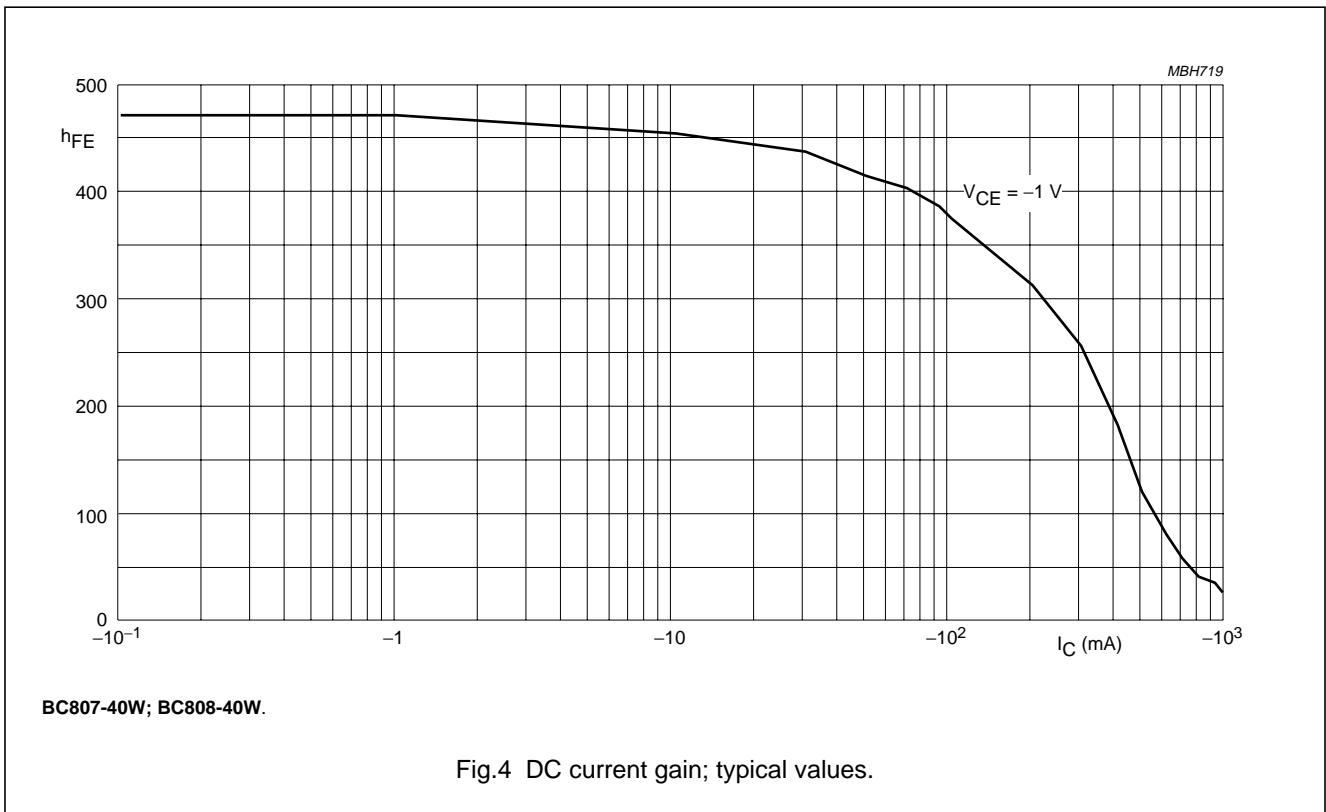
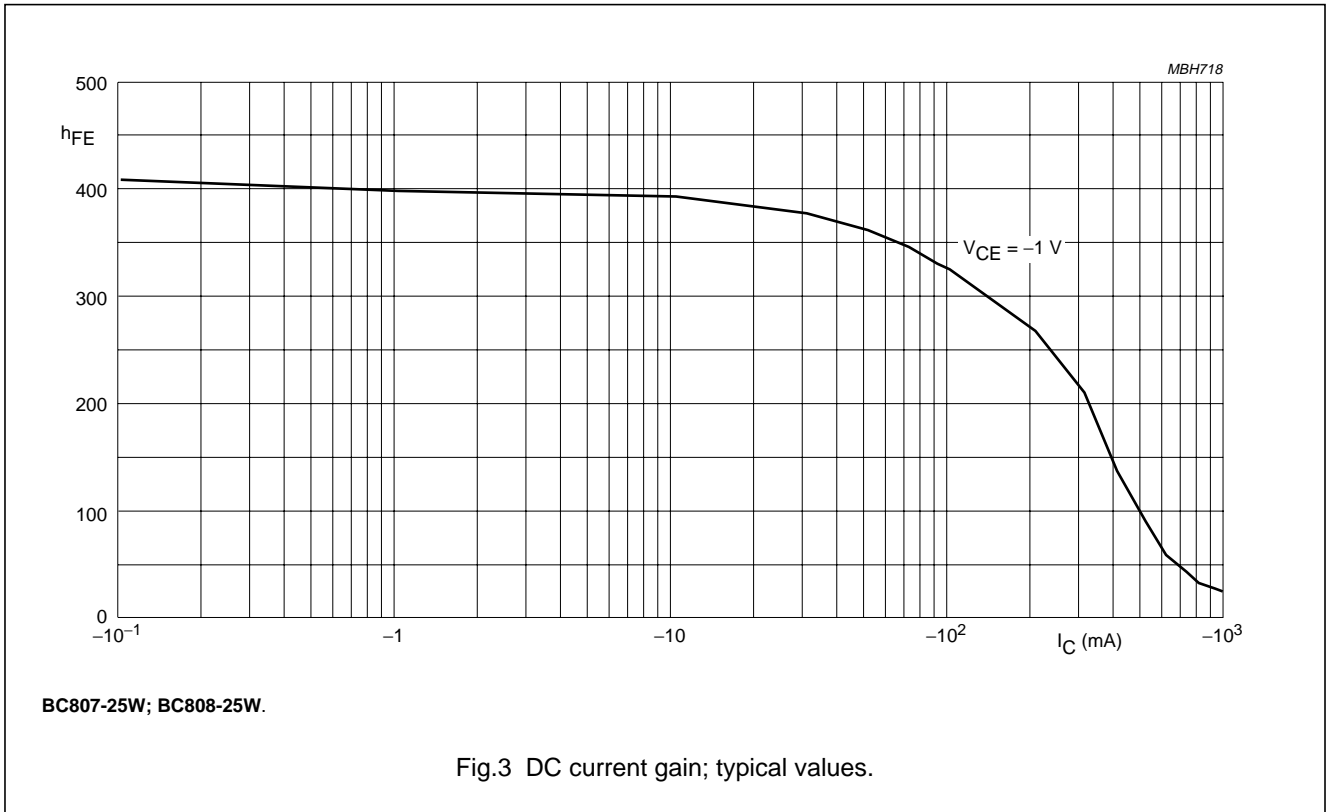
**Note**

1. Pulse test: t<sub>p</sub> ≤ 300 μs; δ ≤ 0.02.



PNP general purpose transistors

BC807W; BC808W



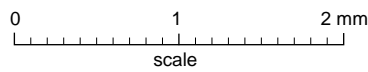
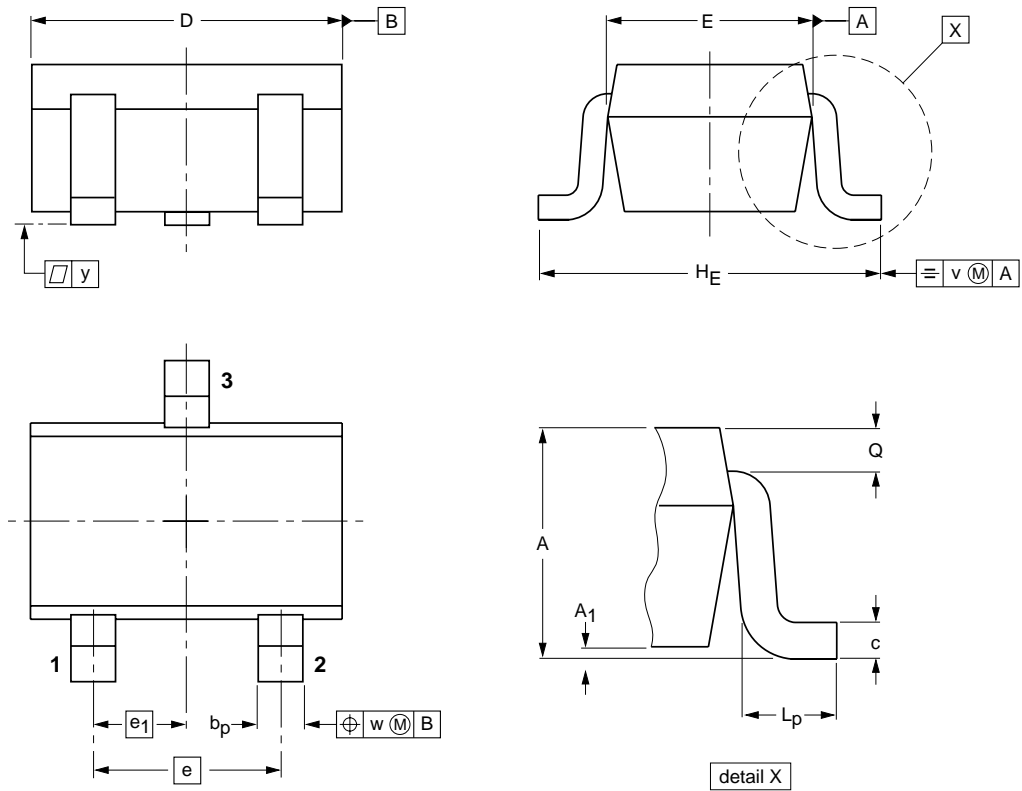
PNP general purpose transistors

BC807W; BC808W

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

## PNP general purpose transistors

BC807W; BC808W

**DEFINITIONS**

<b>Data sheet status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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