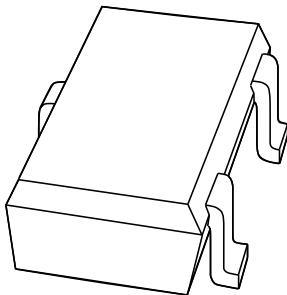


DATA SHEET



BC817W; BC818W NPN general purpose transistors

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

1997 Mar 05

NPN general purpose transistors

BC817W; BC818W

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

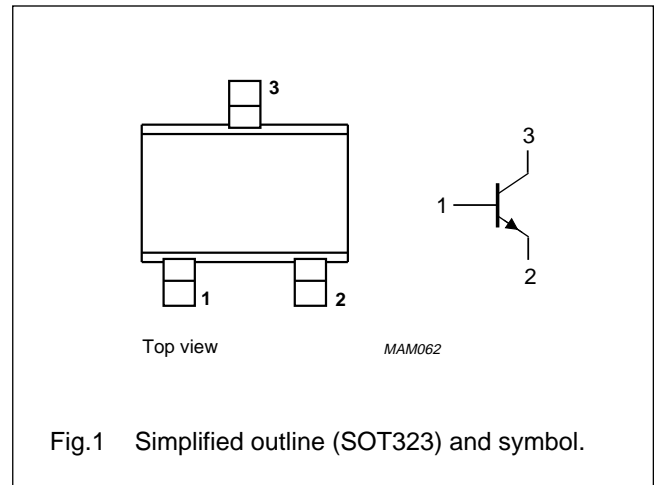
NPN transistor in a SOT323 plastic package.
PNP complements: BC807W and BC808W.

MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BC817W	6Dt	BC818W	6Ht
BC817-16W	6At	BC818-16W	6Et
BC817-25W	6Bt	BC818-25W	6Ft
BC817-40W	6Ct	BC818-40W	6Gt

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage BC817W BC818W	open emitter	–	50	V
			–	30	V
V _{CEO}	collector-emitter voltage BC817W BC818W	open base	–	45	V
			–	25	V
I _{CM}	peak collector current		–	1	A
P _{tot}	total power dissipation	T _{amb} ≤ 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	100	–	MHz

NPN general purpose transistors

BC817W; BC818W

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	–	50	V
	BC817W			30	V
V _{CEO}	collector-emitter voltage	open base; I _C = 10 mA	–	45	V
	BC817W			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	–	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-a}	thermal resistance from junction to ambient	note 1	625	K/W

Note

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

NPN general purpose transistors

BC817W; BC818W

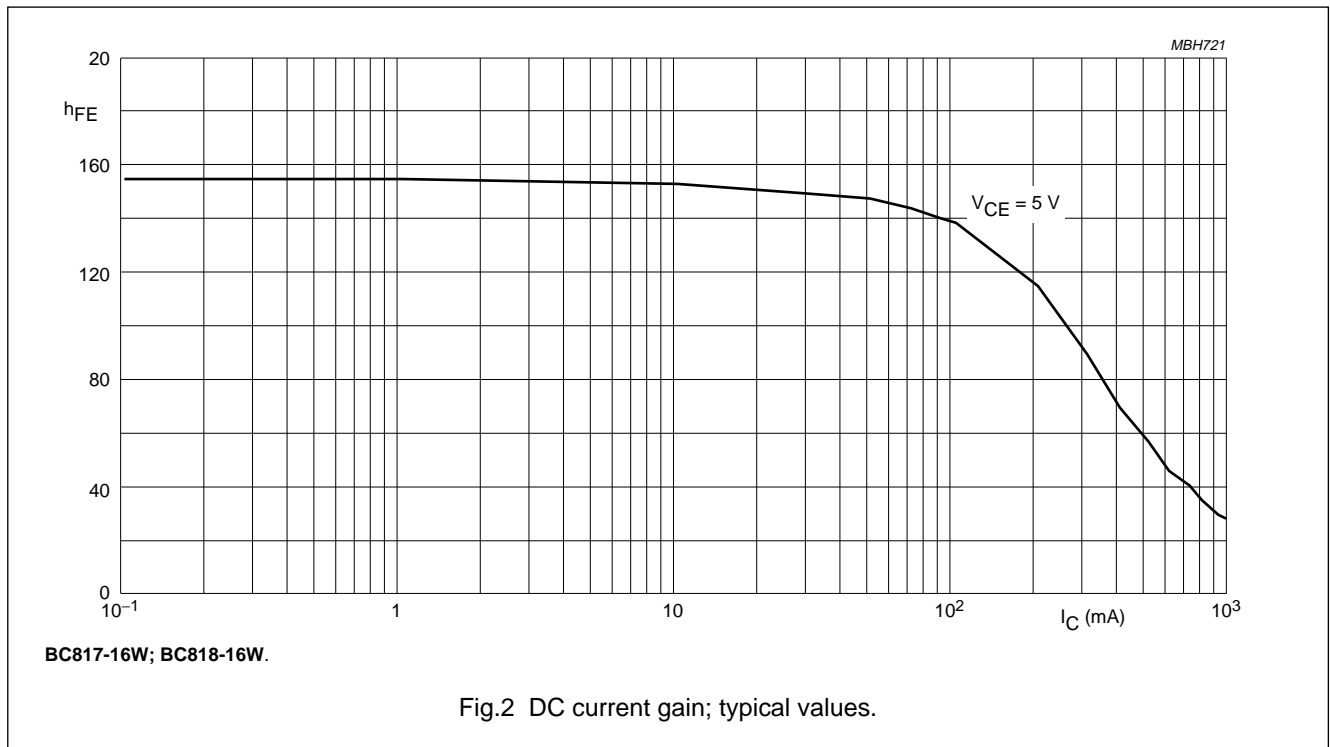
CHARACTERISTICS

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 BC817W; BC818W BC817-16W; BC818-16W BC817-25W; BC818-25W BC817-40W; BC818-40W	I _C = 100 mA; V _{CE} = 1 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 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	mV
C _c	collector capacitance	I _E = i _e = 0; V _{CB} = 10 V; f = 1 MHz	–	5	pF
f _T	transition frequency	I _C = 10 mA; V _{CE} = 5 V; f = 100 MHz	100	–	MHz

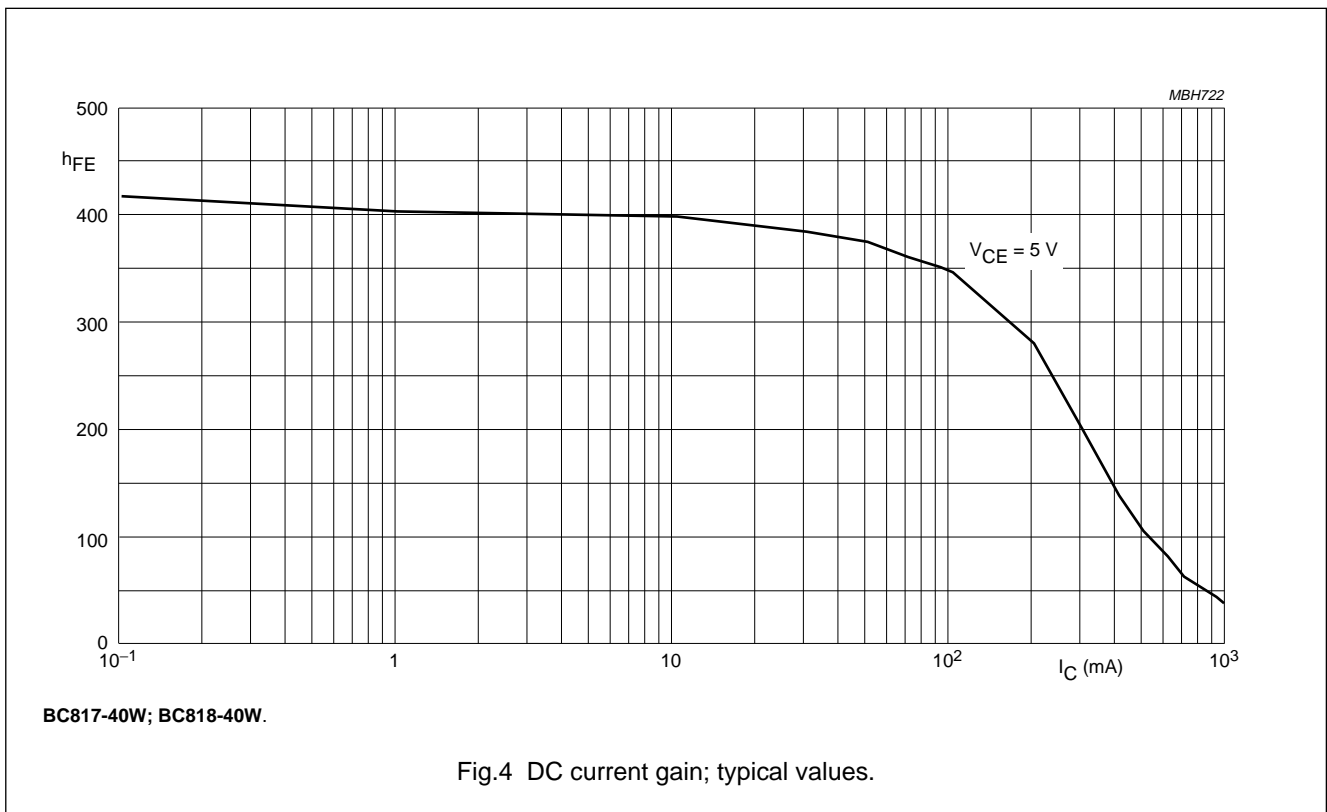
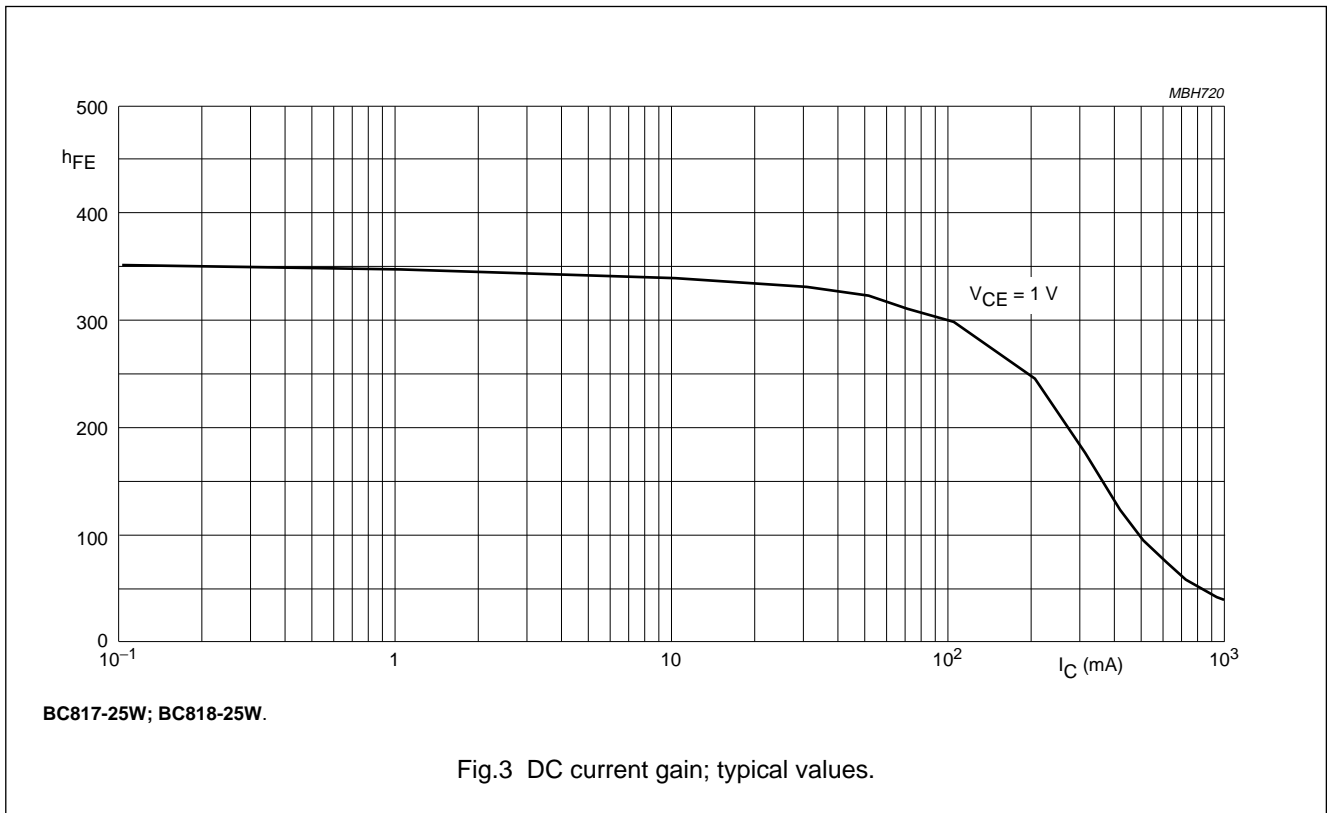
Note

1. Pulse test: t_p ≤ 300 μs; δ ≤ 0.02.



NPN general purpose transistors

BC817W; BC818W



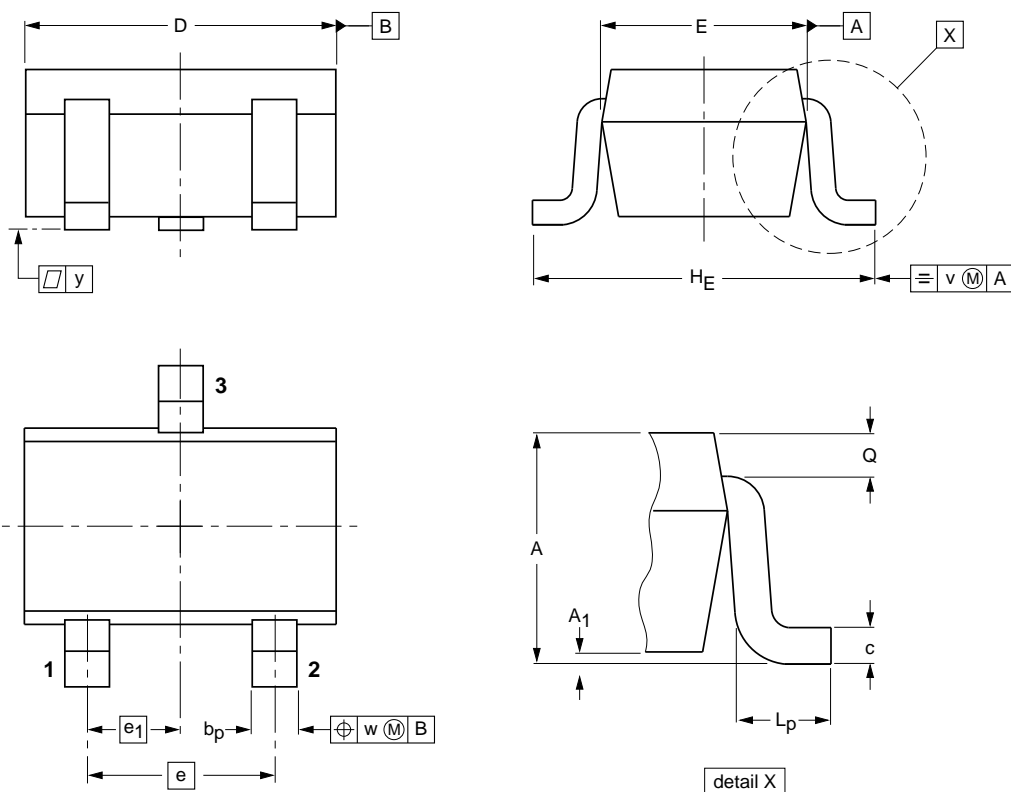
NPN general purpose transistors

BC817W; BC818W

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

NPN general purpose transistors

BC817W; BC818W

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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