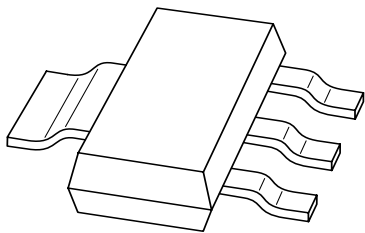


DATA SHEET



BCP69

PNP medium power transistor

Product specification
Supersedes data of 1999 Apr 08

2002 Nov 15

PNP medium power transistor

BCP69

FEATURES

- High current (max. 1 A)
- Low voltage (max. 20 V).

APPLICATIONS

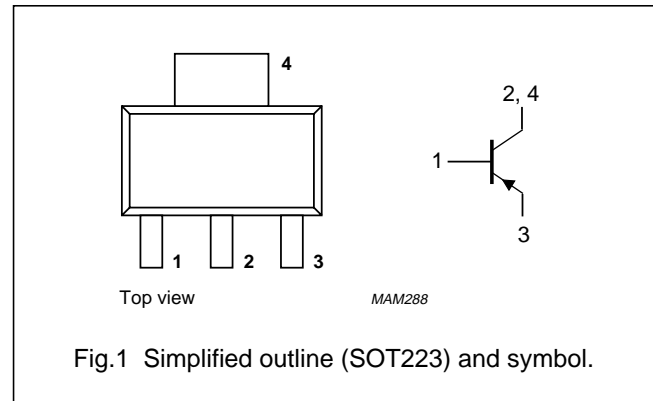
- General purpose switching and amplification
- Power applications such as audio output stages.

DESCRIPTION

PNP medium power transistor in a SOT223 plastic package. NPN complement: BCP68.

PINNING

PIN	DESCRIPTION
1	base
2, 4	collector
3	emitter



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–32	V
V_{CEO}	collector-emitter voltage	open base	–	–20	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–1	A
I_{CM}	peak collector current		–	–2	A
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	1.35	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm². For other mounting conditions, see “*Thermal considerations for SOT223 in the General Part of associated Handbook*”.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	91	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		10	K/W

Note

- Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm². For other mounting conditions, see "Thermal considerations for SOT223 in the General Part of associated Handbook".

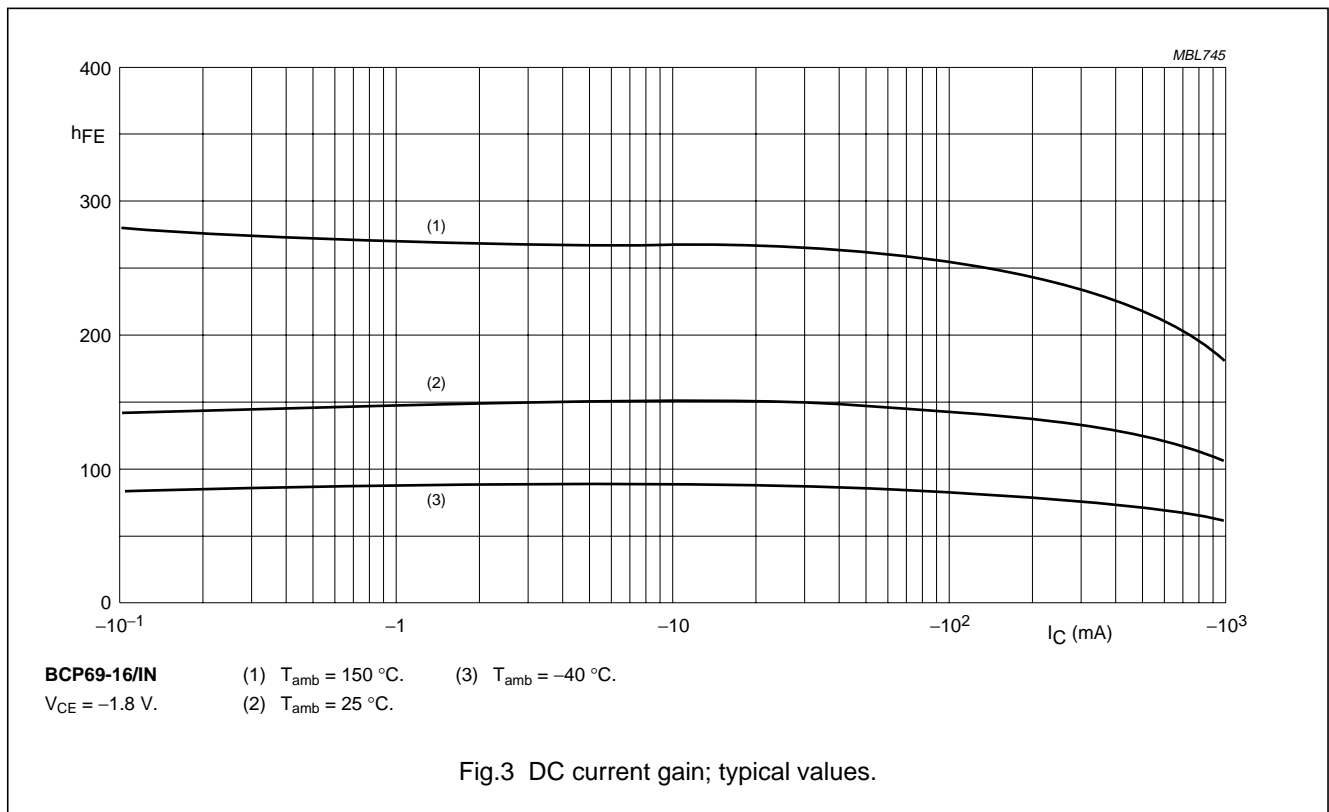
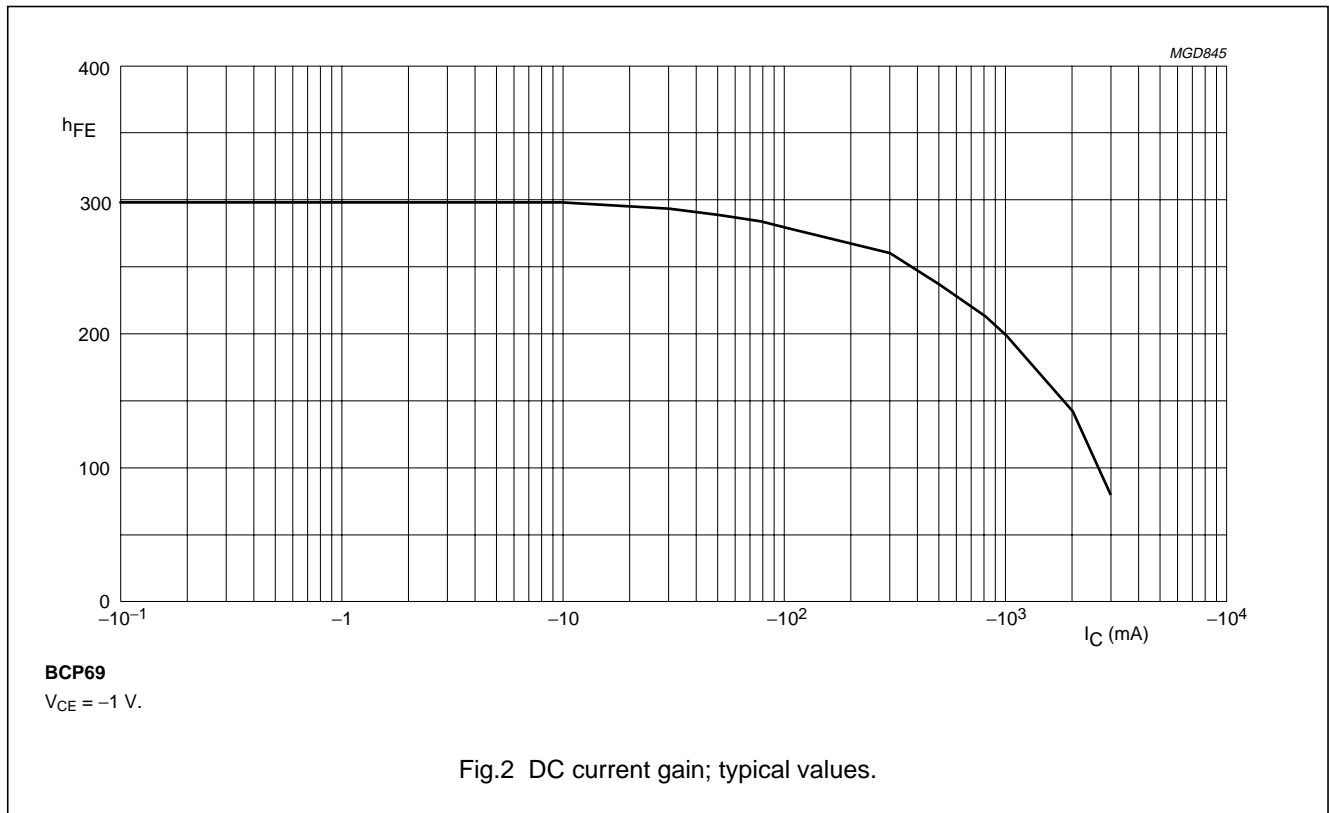
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -25\text{ V}$	–	–	–100	nA
		$I_E = 0; V_{CB} = -25\text{ V}; T_j = 150\text{ °C}$	–	–	–10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–	–100	nA
h_{FE}	DC current gain	$I_C = -5\text{ mA}; V_{CE} = -10\text{ V}$	50	–	–	
		$I_C = -500\text{ mA}; V_{CE} = -1\text{ V};$ see Fig.2	85	–	375	
		$I_C = -1\text{ A}; V_{CE} = -1\text{ V};$ see Fig.2	60	–	–	
	DC current gain	$I_C = -500\text{ mA}; V_{CE} = -1\text{ V};$ see Fig.2				
	BCP69-16		100	–	250	
	BCP69-25		160	–	375	
	DC current gain	$I_C = -10\text{ mA}; V_{CE} = -1.8\text{ V};$ see Fig.3				
	BCP69-16/IN		140	–	230	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -1\text{ A}; I_B = -100\text{ mA}$	–	–	–500	mV
V_{BE}	base-emitter voltage	$I_C = -5\text{ mA}; V_{CE} = -10\text{ V}$	–	–620	–	mV
		$I_C = -1\text{ A}; V_{CE} = -1\text{ V}$	–	–	–1	V
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -5\text{ V}; f = 1\text{ MHz}$	–	48	–	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	40	–	–	MHz
$\frac{h_{FE1}}{h_{FE2}}$	DC current gain ratio of the complementary pairs	$ I_C = 0.5\text{ A}; V_{CE} = 1\text{ V}$	–	–	1.6	

PNP medium power transistor

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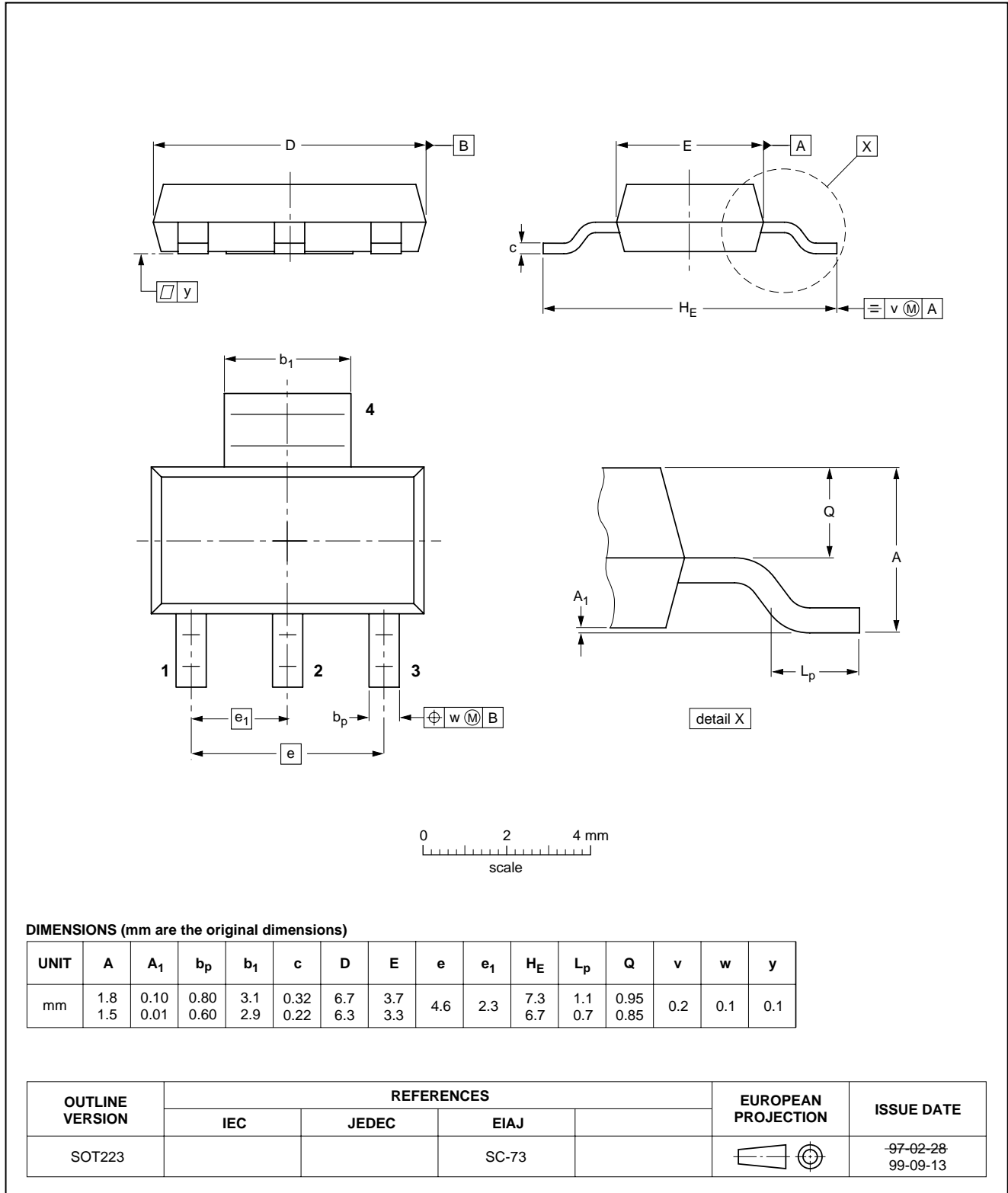
PNP medium power transistor

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PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



PNP medium power transistor

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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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NOTES

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Printed in The Netherlands

613514/04/pp8

Date of release: 2002 Nov 15

Document order number: 9397 750 10588

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