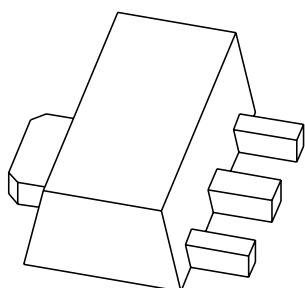


DATA SHEET



BCX51; BCX52; BCX53 PNP medium power transistors

Product specification
Supersedes data of 1999 Apr 19

2001 Oct 10

PNP medium power transistors

BCX51; BCX52; BCX53

FEATURES

- High current (max. 1 A)
- Low voltage (max. 80 V).

APPLICATIONS

- Medium power general purposes
- Driver stages of audio amplifiers.

DESCRIPTION

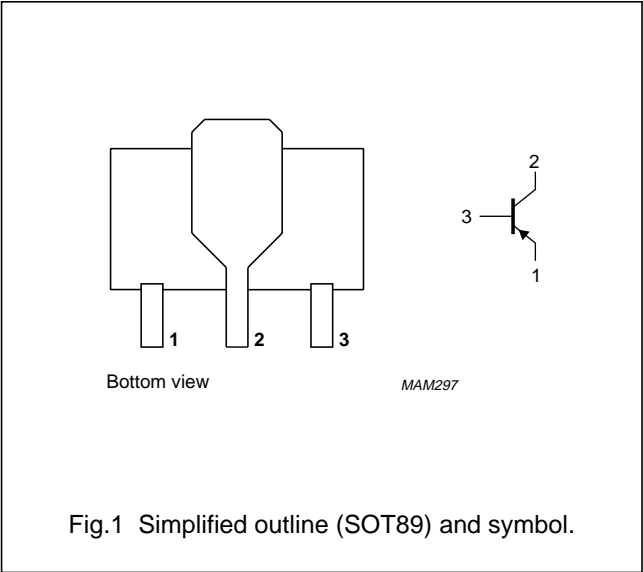
PNP medium power transistor in a SOT89 plastic package. NPN complements: BCX54, BCX55 and BCX56.

MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BCX51	AA	BCX52-16	AM
BCX51-10	AC	BCX53	AH
BCX51-16	AD	BCX53-10	AK
BCX52	AE	BCX53-16	AL
BCX52-10	AG		

PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



PNP medium power transistors

BCX51; BCX52; BCX53

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			
	BCX51		–	–45	V
	BCX52		–	–60	V
	BCX53		–	–100	V
V _{CEO}	collector-emitter voltage	open base			
	BCX51		–	–45	V
	BCX52		–	–60	V
	BCX53		–	–80	V
V _{EBO}	emitter-base voltage	open collector	–	–5	V
I _C	collector current (DC)		–	–1	A
I _{CM}	peak collector current		–	–1.5	A
I _{BM}	peak base current		–	–200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; note 1	–	1.3	W
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	150	°C
T _{amb}	operating ambient temperature		–65	+150	°C

Note

- Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm².
For other mounting conditions, see “*Thermal considerations for SOT89 in the General Part of associated Handbook*”.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	94	K/W
R _{th j-s}	thermal resistance from junction to soldering point	note 1	14	K/W

Note

- Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm².
For other mounting conditions, see “*Thermal considerations for SOT89 in the General Part of associated Handbook*”.

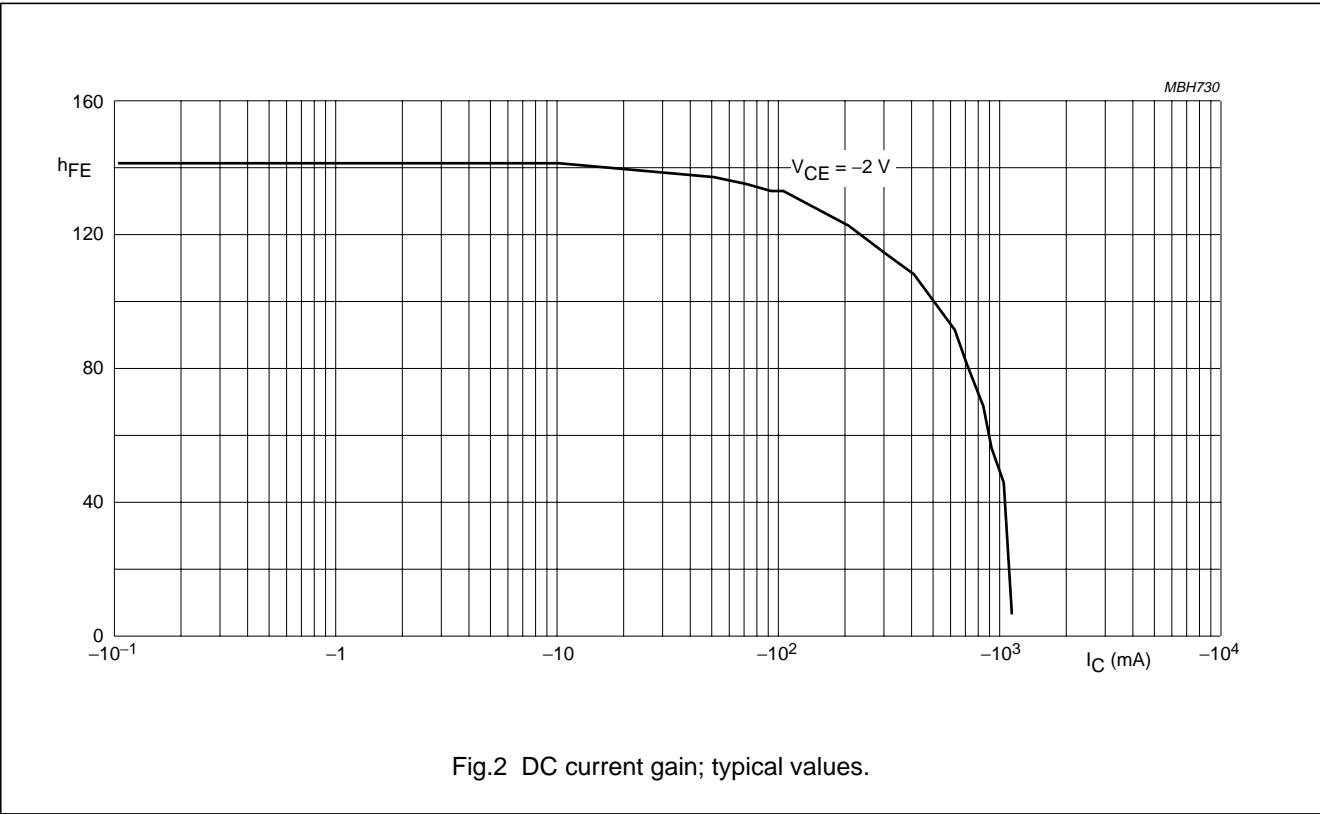
PNP medium power transistors

BCX51; BCX52; BCX53

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector cut-off current	I _E = 0; V _{CB} = -30 V	-	-	-100	nA
		I _E = 0; V _{CB} = -30 V; T _j = 125 °C	-	-	-10	μA
I _{EBO}	emitter cut-off current	I _C = 0; V _{EB} = -5 V	-	-	-100	nA
h _{FE}	DC current gain	V _{CE} = -2 V; see Fig.2				
		I _C = -5 mA	63	-	-	
		I _C = -150 mA	63	-	250	
		I _C = -500 mA	40	-	-	
	DC current gain	I _C = -150 mA; V _{CE} = -2 V; see Fig.2				
	BCX51-10; BCX52-10; BCX53-10		63	-	160	
	BCX51-16; BCX52-16; BCX53-16		100	-	250	
V _{CEsat}	collector-emitter saturation voltage	I _C = -500 mA; I _B = -50 mA	-	-	-500	mV
V _{BE}	base-emitter voltage	I _C = -500 mA; V _{CE} = -2 V	-	-	-1	V
f _T	transition frequency	I _C = -10 mA; V _{CE} = -5 V; f = 100 MHz	-	50	-	MHz



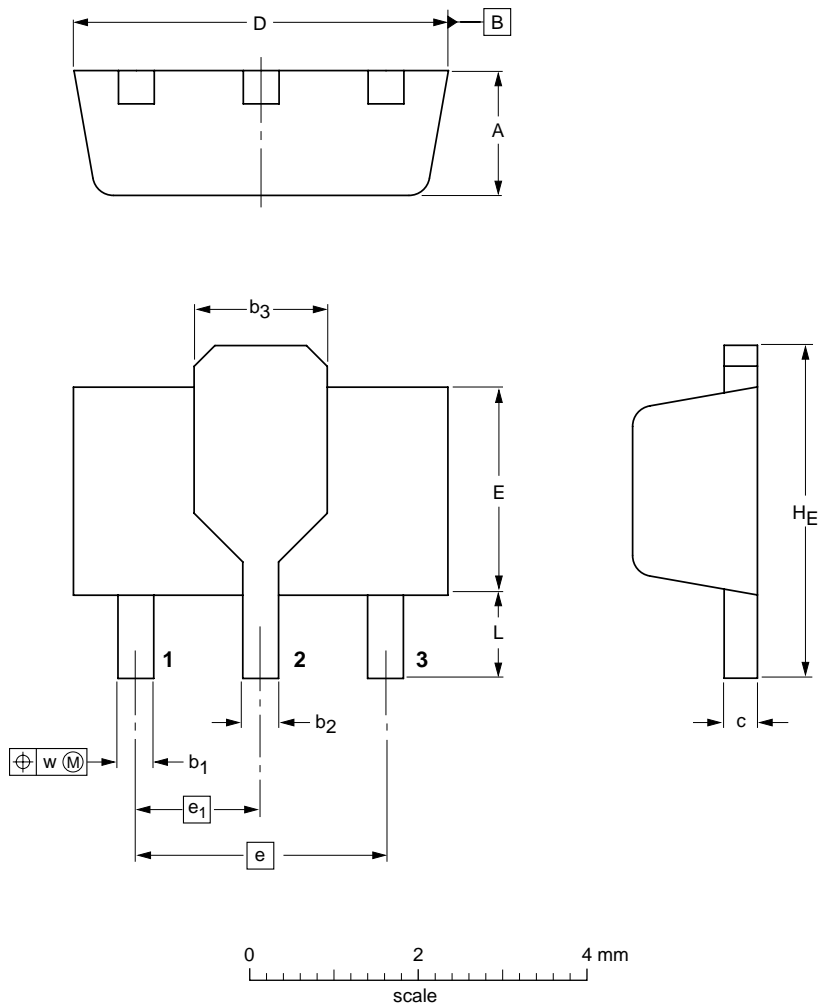
PNP medium power transistors

BCX51; BCX52; BCX53

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 3 leads

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b ₁	b ₂	b ₃	c	D	E	e	e ₁	H _E	L min.	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.37	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	0.8	0.13

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT89		TO-243	SC-62			-97-02-28- 99-09-13

PNP medium power transistors

BCX51; BCX52; BCX53

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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.
Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.

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PNP medium power transistors

BCX51; BCX52; BCX53

NOTES

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