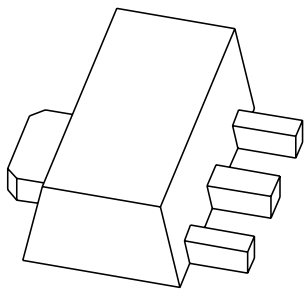


# DATA SHEET



## **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

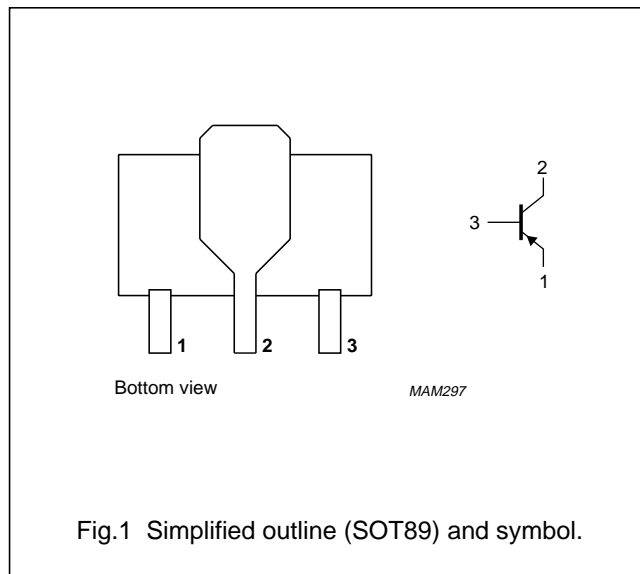
PNP medium power transistor in a SOT89 plastic package. NPN complements: BCX54, BCX55 and BCX56.

### 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

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**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter			
	BCX51		–	–45	V
	BCX52		–	–60	V
	BCX53	–	–100	V	
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BCX51		–	–45	V
	BCX52		–	–60	V
	BCX53	–	–80	V	
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–1	A
I <sub>CM</sub>	peak collector current		–	–1.5	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	–	1.3	W
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**

- Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm<sup>2</sup>.  
For other mounting conditions, see *“Thermal considerations for SOT89 in the General Part of associated Handbook”*.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	94	K/W
R <sub>th j-s</sub>	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 cm<sup>2</sup>.  
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<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = -30 V	-	-	-100	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = -30 V; T <sub>j</sub> = 125 °C	-	-	-10	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	V <sub>CE</sub> = -2 V; see Fig.2				
		I <sub>C</sub> = -5 mA I <sub>C</sub> = -150 mA I <sub>C</sub> = -500 mA	63 63 40	- - -	- 250 -	
	DC current gain BCX51-10; BCX52-10; BCX53-10 BCX51-16; BCX52-16; BCX53-16	I <sub>C</sub> = -150 mA; V <sub>CE</sub> = -2 V; see Fig.2	63 100	- -	160 250	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = -500 mA; I <sub>B</sub> = -50 mA	-	-	-500	mV
V <sub>BE</sub>	base-emitter voltage	I <sub>C</sub> = -500 mA; V <sub>CE</sub> = -2 V	-	-	-1	V
f <sub>T</sub>	transition frequency	I <sub>C</sub> = -10 mA; V <sub>CE</sub> = -5 V; f = 100 MHz	-	50	-	MHz

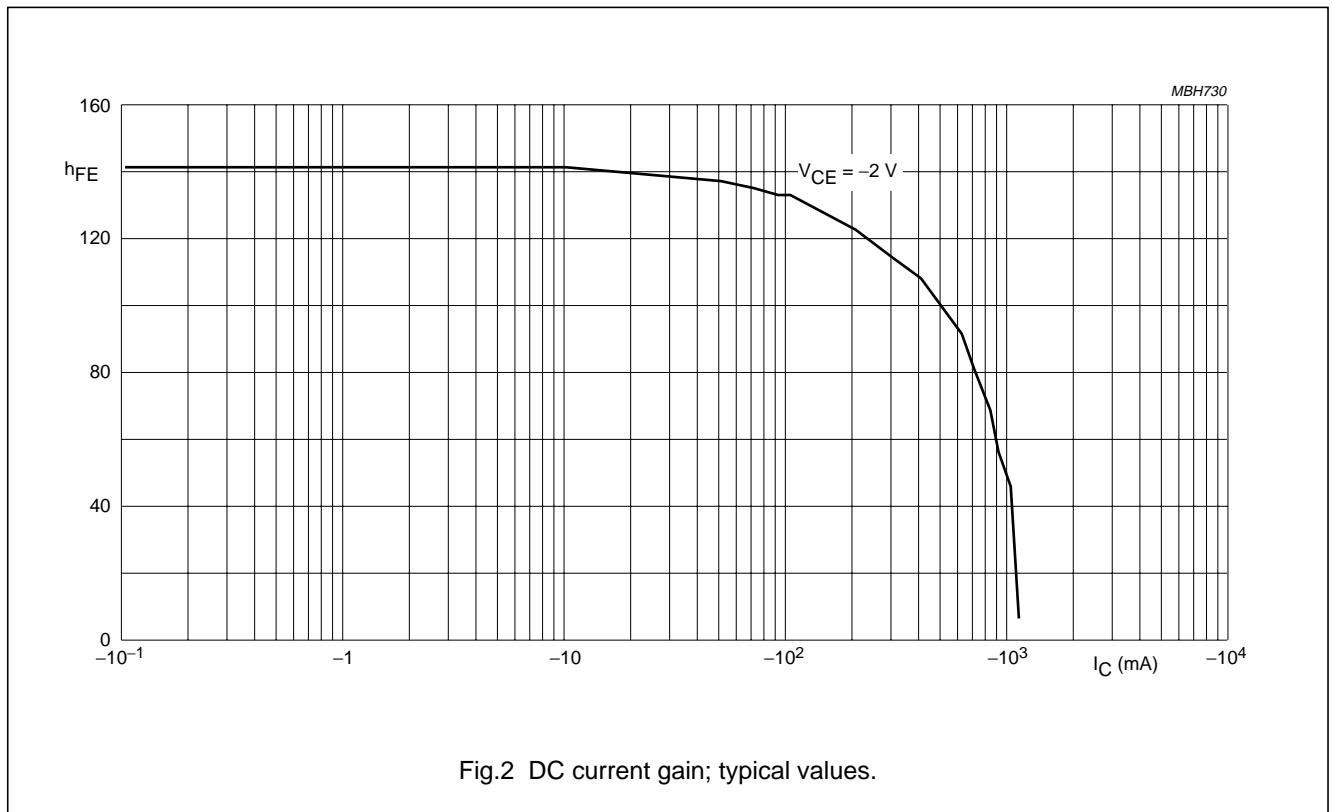


Fig.2 DC current gain; typical values.

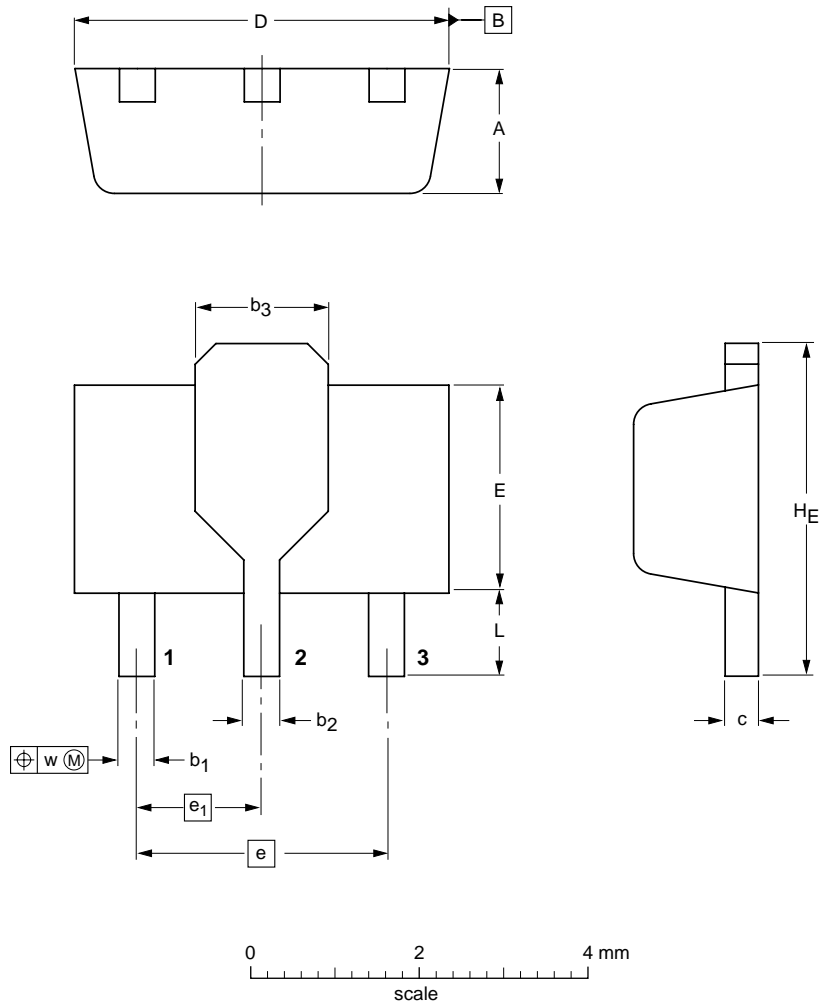
PNP medium power transistors

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PACKAGE OUTLINE

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

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	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

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DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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