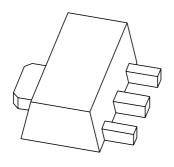
## **DISCRETE SEMICONDUCTORS**

## 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**

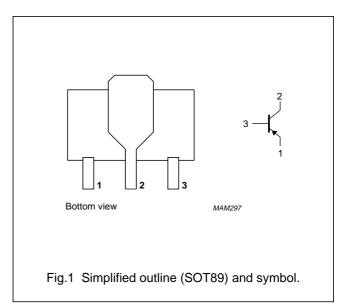
PNP medium power transistor in a SOT89 plastic package. NPN complements: BCX54, BCX55 and BCX56.

## **MARKING**

TYPE NUMBER	MARKING CODE		
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		_	<b>-45</b>	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	Α
I <sub>CM</sub>	peak collector current		_	-1.5	Α
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
Tj	junction temperature		_	150	°C
T <sub>amb</sub>	operating ambient temperature		-65	+150	°C

## Note

## 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

1. 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".

<sup>1.</sup> 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".

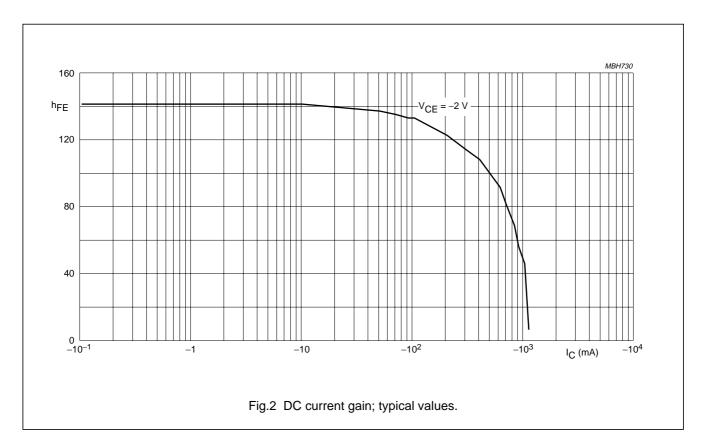
## PNP medium power transistors

BCX51; BCX52; BCX53

## **CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current	$I_E = 0; V_{CB} = -30 \text{ V}$	_	_	-100	nA
		$I_E = 0$ ; $V_{CB} = -30 \text{ V}$ ; $T_j = 125 ^{\circ}\text{C}$	_	_	-10	μΑ
I <sub>EBO</sub>	emitter cut-off current	$I_C = 0; V_{EB} = -5 \text{ V}$	_	_	-100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = −2 V; see Fig.2				
		$I_C = -5 \text{ mA}$	63	_	_	
		$I_{C} = -150 \text{ mA}$	63	_	250	
		$I_{C} = -500 \text{ mA}$	40	_	_	
	DC current gain	$I_C = -150 \text{ mA}; V_{CE} = -2 \text{ V}; \text{ see Fig.2}$				
	BCX51-10; BCX52-10; BCX53-10		63	_	160	
	BCX51-16; BCX52-16; BCX53-16		100	_	250	
V <sub>CEsat</sub>	collector-emitter saturation voltage	$I_C = -500 \text{ mA}; I_B = -50 \text{ mA}$	_	_	-500	mV
V <sub>BE</sub>	base-emitter voltage	$I_C = -500 \text{ mA}; V_{CE} = -2 \text{ V}$	_	_	-1	V
f <sub>T</sub>	transition frequency	$I_C = -10 \text{ mA}; V_{CE} = -5 \text{ V}; f = 100 \text{ MHz}$	_	50	_	MHz



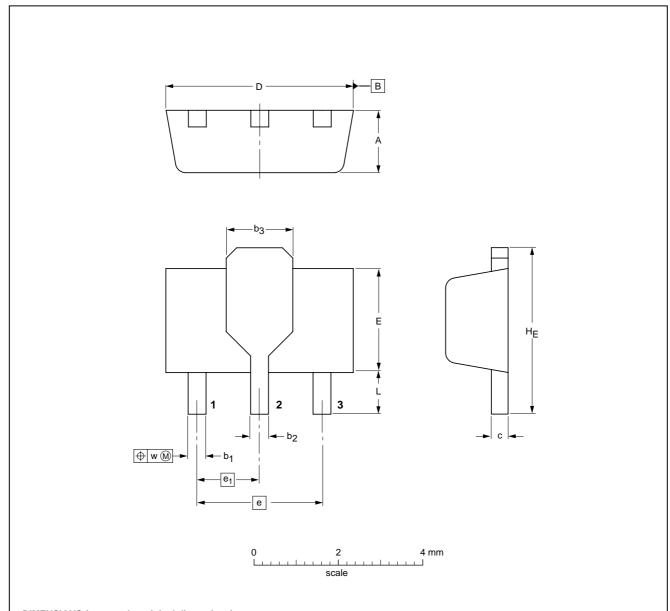
## PNP medium power transistors

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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>	С	D	E	е	e <sub>1</sub>	HE	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		REFERENCES			EUROPEAN ISSUE DAT					
VERSION	IEC	JEDEC	EIAJ		PROJECTION	ISSUE DATE				
SOT89		TO-243	SC-62			<del>97-02-28</del> 99-09-13				

## PNP medium power transistors

BCX51; BCX52; BCX53

#### **DATA SHEET STATUS**

DATA SHEET STATUS(1)	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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## PNP medium power transistors

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**NOTES** 

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