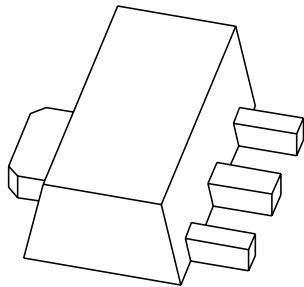


# DATA SHEET



## **BCX54; BCX55; BCX56** NPN medium power transistors

Product specification  
Supersedes data of 1999 Apr 19

2001 Oct 10

## NPN medium power transistors

## BCX54; BCX55; BCX56

### FEATURES

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

### APPLICATIONS

- Driver stages of audio and video amplifiers.

### DESCRIPTION

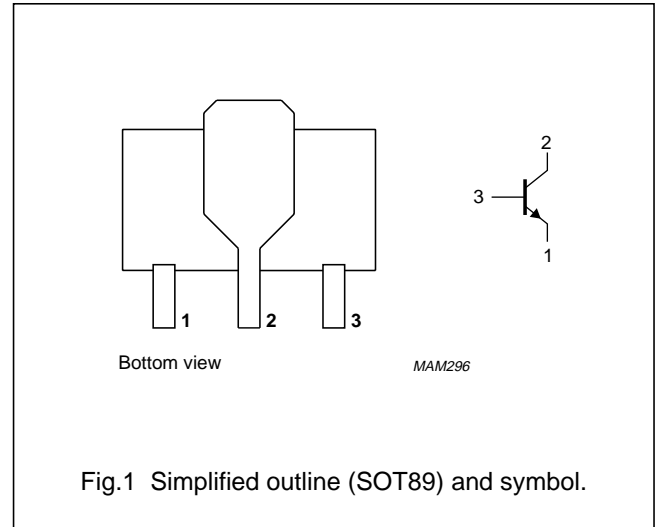
NPN medium power transistor in a SOT89 plastic package. PNP complements: BCX51, BCX52 and BCX53.

### MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BCX54	BA	BCX55-16	BM
BCX54-10	BC	BCX56	BH
BCX54-16	BD	BCX56-10	BK
BCX55	BE	BCX56-16	BL
BCX55-10	BG		

### PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



## NPN medium power transistors

## BCX54; BCX55; BCX56

**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			
	BCX54		–	45	V
	BCX55		–	60	V
	BCX56		–	100	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BCX54		–	45	V
	BCX55		–	60	V
	BCX56		–	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		–	0.2	A
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		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*”.

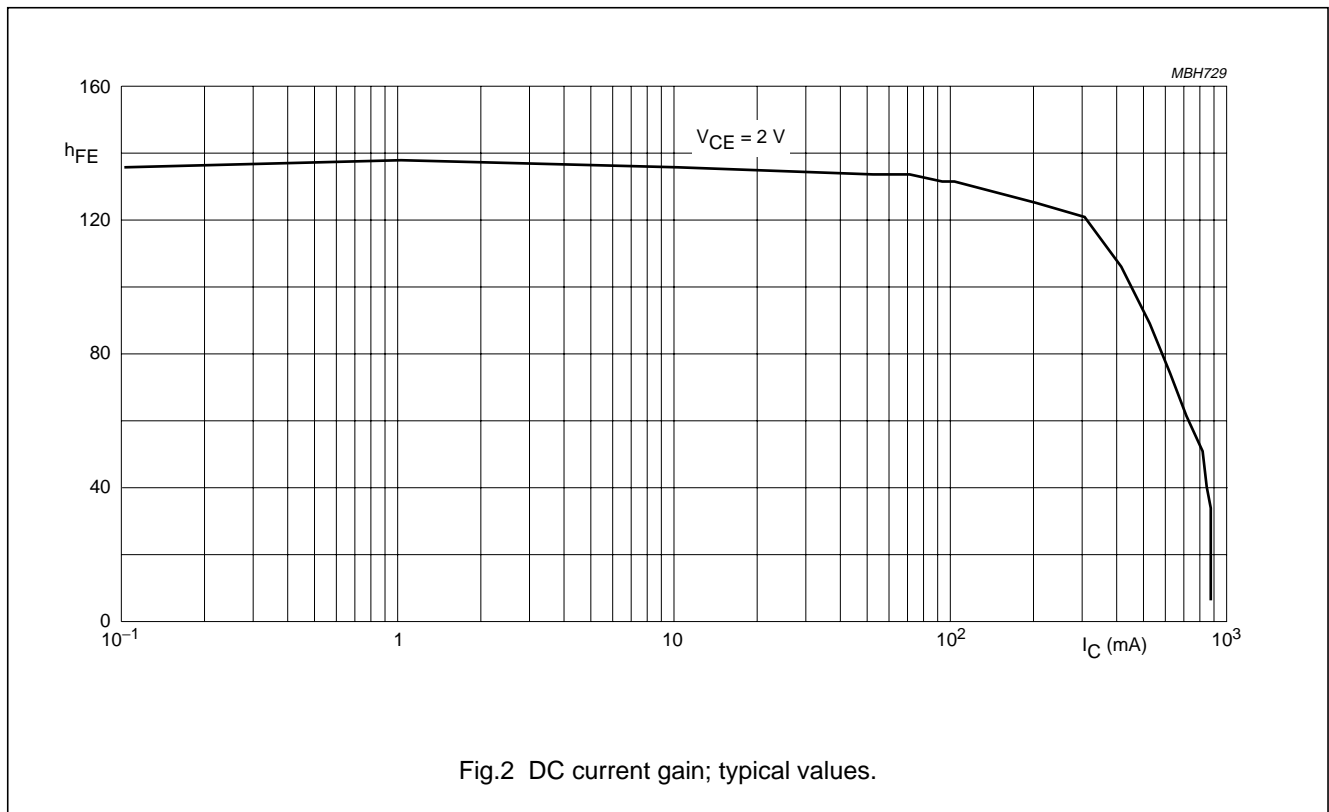
NPN medium power transistors

BCX54; BCX55; BCX56

**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	63	–	–	
		I <sub>C</sub> = 150 mA	63	–	250	
	I <sub>C</sub> = 500 mA	40	–	–		
DC current gain	I <sub>C</sub> = 150 mA; V <sub>CE</sub> = 2 V; (see Fig.2)					
	BCX54-10; 55-10; 56-10	63	–	160		
	BCX54-16; 55-16; 56-16	100	–	250		
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 500 mA; I <sub>B</sub> = 50 mA	–	–	0.5	V
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	–	130	–	MHz
$\frac{h_{FE1}}{h_{FE2}}$	DC current gain ratio of the complementary pairs	I <sub>C</sub>   = 150 mA;  V <sub>CE</sub>   = 2 V	–	1.3	1.6	



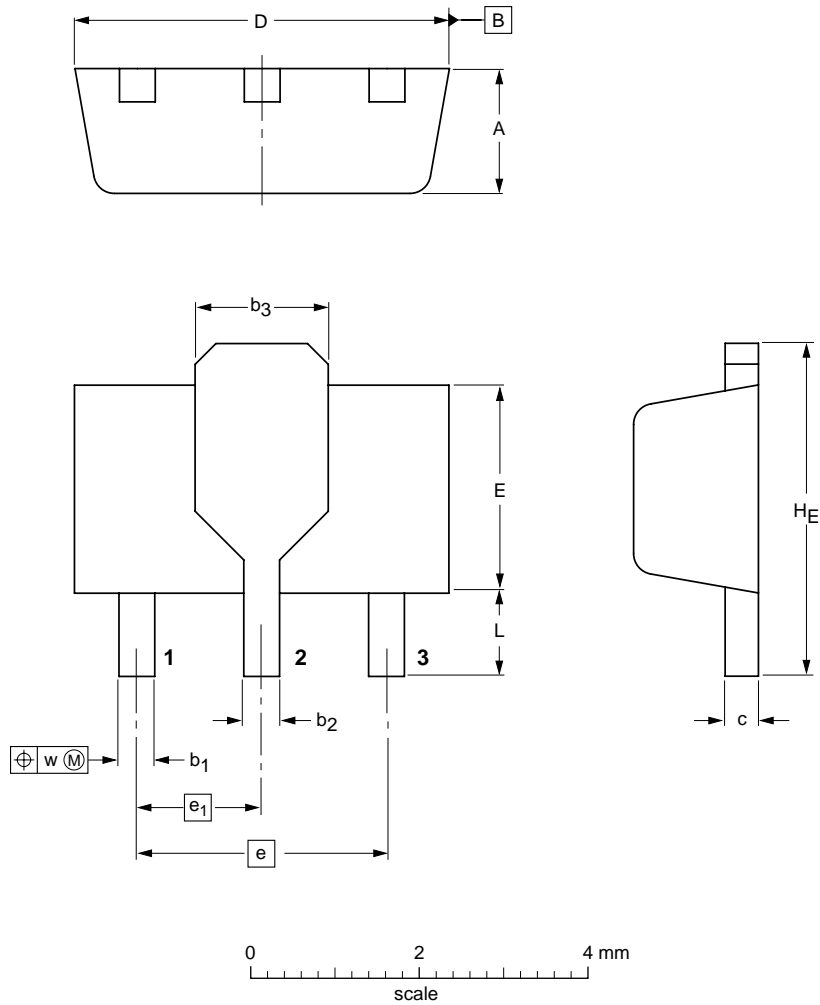
NPN medium power transistors

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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

## NPN medium power transistors

## BCX54; BCX55; BCX56

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

BCX54; BCX55; BCX56

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**NOTES**

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