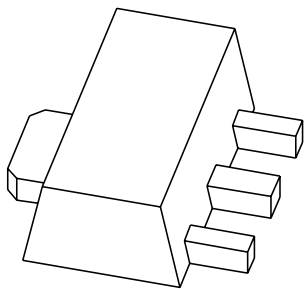


DATA SHEET



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

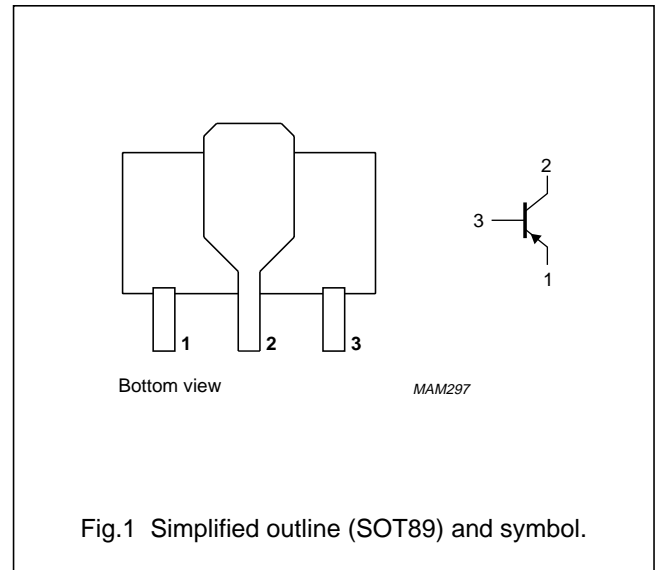
PNP medium power transistor in a SOT89 plastic package. NPN complements: BCX54, BCX55 and BCX56.

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*”.

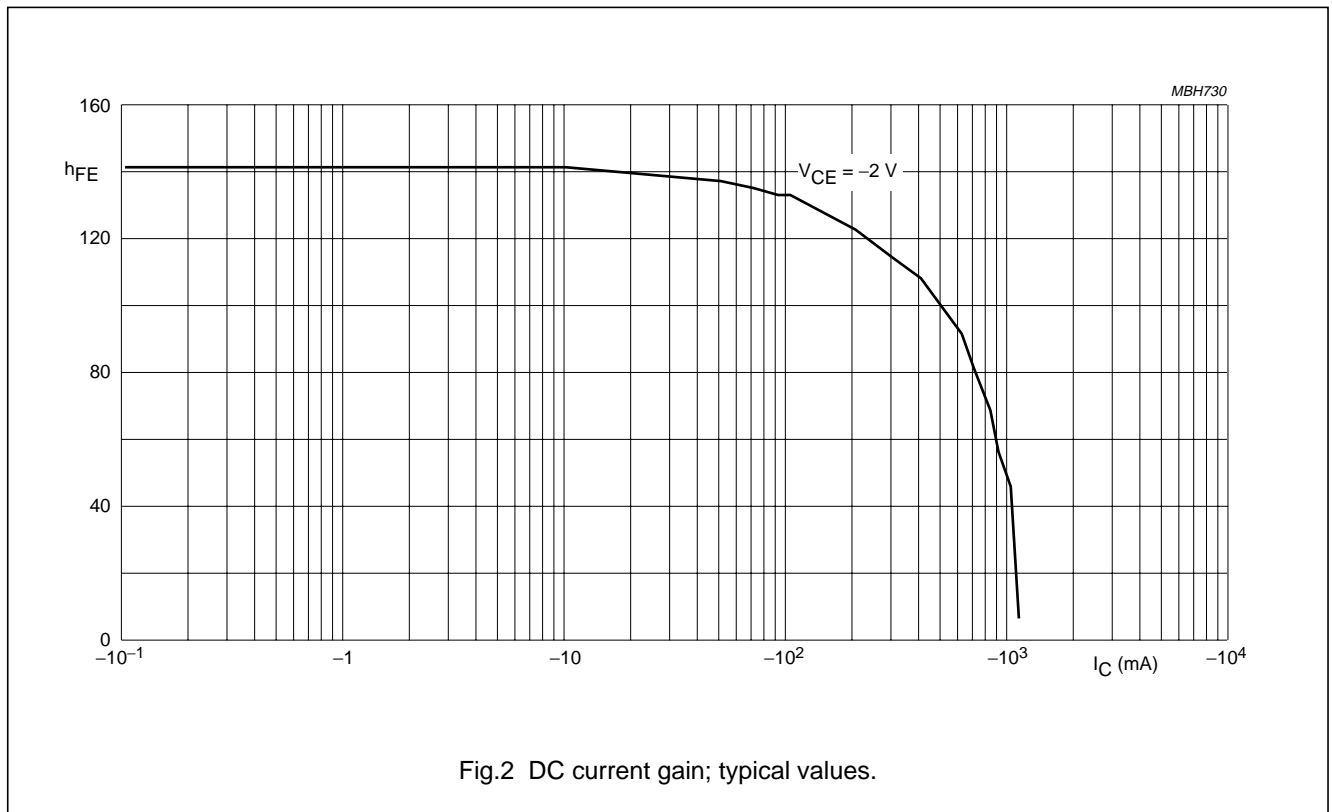
PNP medium power transistors

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 |



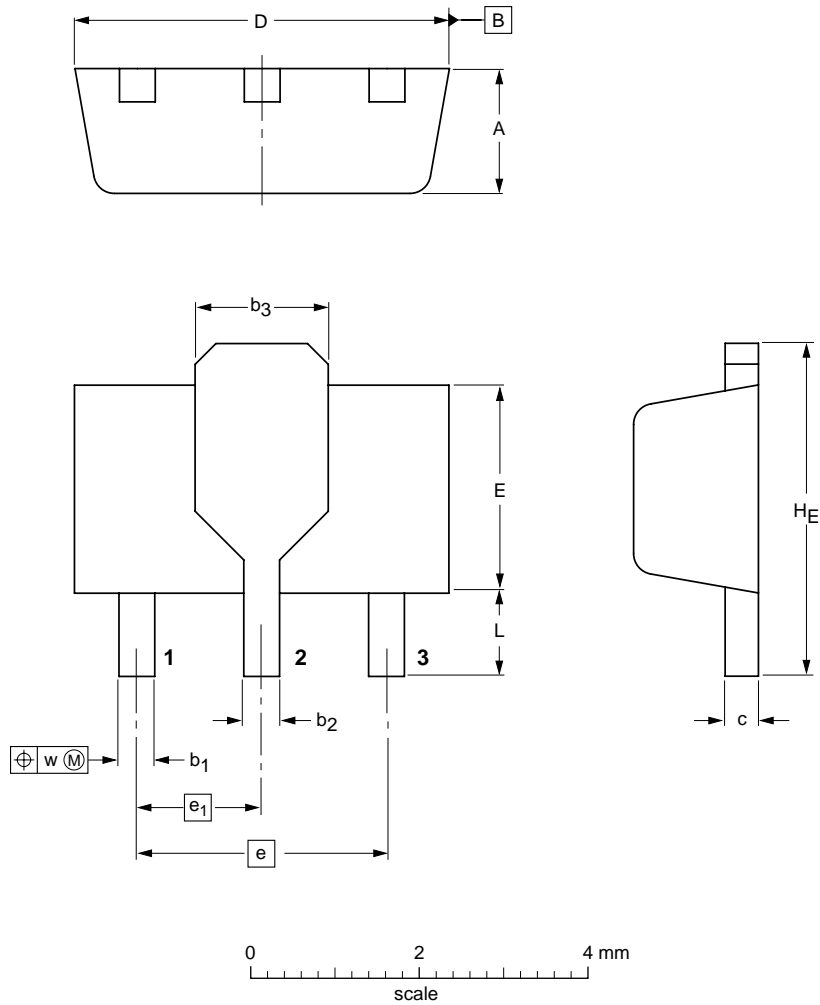
PNP medium power transistors

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 |
|----------------------------------|-------------------------------|--|
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PNP medium power transistors

BCX51; BCX52; BCX53

NOTES

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