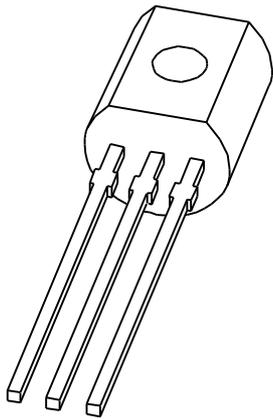


DATA SHEET



BF421; BF423 PNP high voltage transistors

Product specification
Supersedes data of 1996 Dec 09

2004 Nov 10

PNP high voltage transistors

BF421; BF423

FEATURES

- Low feedback capacitance.

APPLICATIONS

- Class-B video output stages in colour television and professional monitor equipment.

DESCRIPTION

PNP transistors in a TO-92 plastic package.
NPN complements: BF420 and BF422.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | base |
| 2 | collector |
| 3 | emitter |

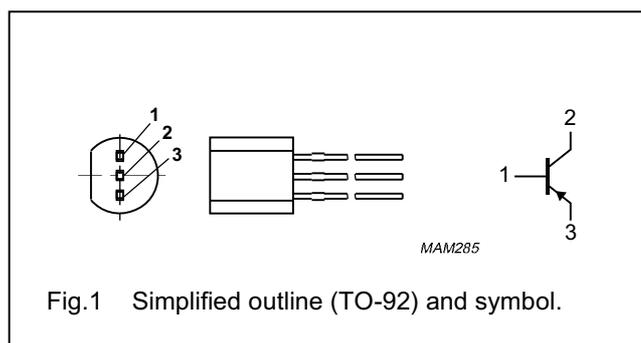


Fig.1 Simplified outline (TO-92) and symbol.

ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|-------------|---------|---|---------|
| | NAME | DESCRIPTION | VERSION |
| BF421 | SC-43A | plastic single-ended leaded (through hole) package; 3 leads | SOT54 |
| BF423 | | | |

QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|---------------------------|---|------|------|------|
| V_{CBO} | collector-base voltage | open emitter | | | |
| | BF421 | | – | –300 | V |
| | BF423 | | – | –250 | V |
| V_{CEO} | collector-emitter voltage | open base | | | |
| | BF421 | | – | –300 | V |
| | BF423 | | – | –250 | V |
| I_{CM} | peak collector current | | – | –100 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ °C}$ | – | 830 | mW |
| h_{FE} | DC current gain | $V_{CE} = -20\text{ V}; I_C = -25\text{ mA}$ | 50 | – | |
| C_{re} | feedback capacitance | $V_{CE} = -30\text{ V}; I_C = I_c = 0\text{ A}; f = 1\text{ MHz}$ | – | 1.6 | pF |
| f_T | transition frequency | $V_{CE} = -10\text{ V}; I_C = -10\text{ mA}; f = 100\text{ MHz}$ | 60 | – | MHz |

PNP high voltage transistors

BF421; BF423

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 | | | |
| | BF421 | | – | –300 | V |
| | BF423 | | – | –250 | V |
| V _{CEO} | collector-emitter voltage | open base | | | |
| | BF421 | | – | –300 | V |
| | BF423 | | – | –250 | V |
| V _{EBO} | emitter-base voltage | open collector | – | –5 | V |
| I _C | collector current (DC) | | – | –50 | mA |
| I _{CM} | peak collector current | | – | –100 | mA |
| I _{BM} | peak base current | | – | –50 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C; note 1 | – | 830 | mW |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 150 | °C |
| T _{amb} | ambient temperature | | –65 | +150 | °C |

Note

1. Transistor mounted on a printed-circuit board.

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|----------------------|---|------------|-------|------|
| R _{th(j-a)} | thermal resistance from junction to ambient | note 1 | 150 | K/W |

Note

1. Transistor mounted on a printed-circuit board.

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|--------------------|--------------------------------------|---|------|------|------|
| I _{CBO} | collector-base cut-off current | V _{CB} = –200 V; I _E = 0 A | – | –10 | nA |
| | | V _{CB} = –200 V; I _E = 0 A; T _j = 150 °C | – | –10 | μA |
| I _{EBO} | emitter-base cut-off current | V _{EB} = –5 V; I _C = 0 A | – | –50 | nA |
| h _{FE} | DC current gain | V _{CE} = –20 V; I _C = –25 mA | 50 | – | |
| V _{CEsat} | collector-emitter saturation voltage | I _C = –30 mA; I _B = –5 mA | – | –0.6 | V |
| C _{re} | feedback capacitance | V _{CE} = –30 V; I _C = i _c = 0 A; f = 1 MHz | – | 1.6 | pF |
| f _T | transition frequency | V _{CE} = –10 V; I _C = –10 mA; f = 100 MHz | 60 | – | MHz |

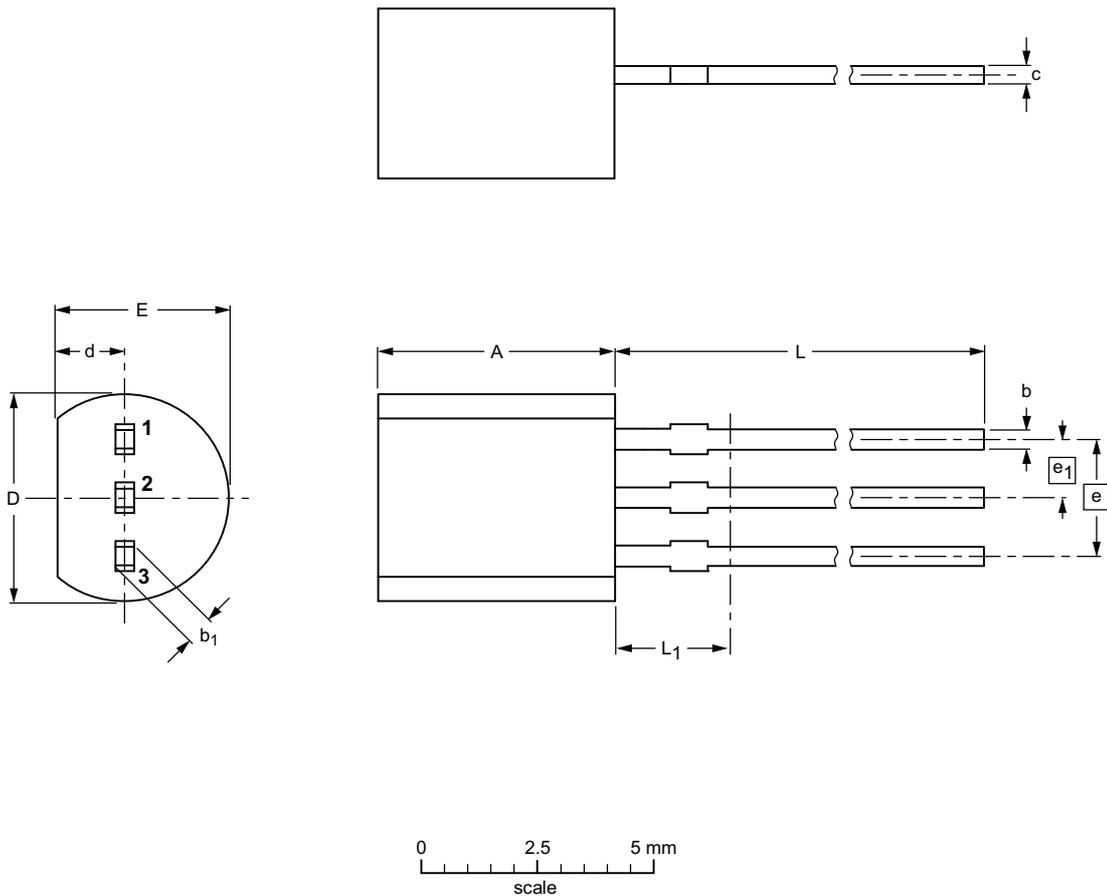
PNP high voltage transistors

BF421; BF423

PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; 3 leads

SOT54



DIMENSIONS (mm are the original dimensions)

| UNIT | A | b | b ₁ | c | D | d | E | e | e ₁ | L | L ₁ ⁽¹⁾ max. |
|------|------------|--------------|----------------|--------------|------------|------------|------------|------|----------------|--------------|---------------------------------------|
| mm | 5.2 5.0 | 0.48 0.40 | 0.66 0.55 | 0.45 0.38 | 4.8 4.4 | 1.7 1.4 | 4.2 3.6 | 2.54 | 1.27 | 14.5 12.7 | 2.5 |

Note

1. Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

| OUTLINE VERSION | REFERENCES | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|--------|---------------------|-----------------------|
| | IEC | JEDEC | JEITA | | |
| SOT54 | | TO-92 | SC-43A | | -97-02-28 04-06-28 |

PNP high voltage transistors

BF421; BF423

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|-------|----------------------------------|----------------------------------|--|
| I | 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. |
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Printed in The Netherlands

R75/03/pp6

Date of release: 2004 Nov 10

Document order number: 9397 750 13583

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