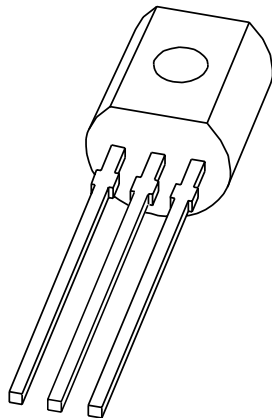


DATA SHEET



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

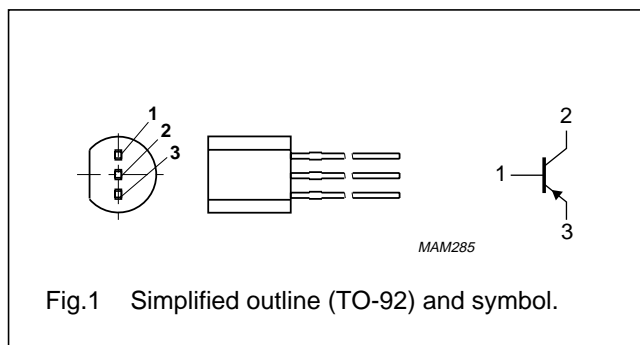


Fig.1 Simplified outline (TO-92) and symbol.

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} ≤ 25 °C	–	830	mW
h _{FE}	DC current gain	V _{CE} = –20 V; I _C = –25 mA	50	–	
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

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.

CHARACTERISTICS

T_{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

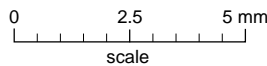
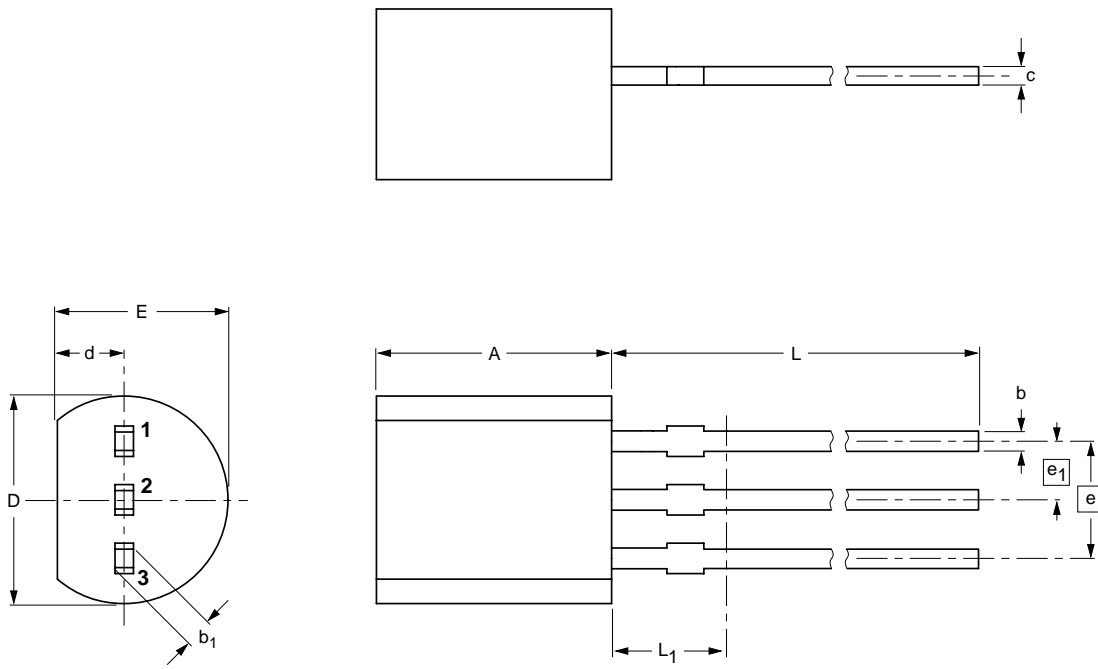
PNP high voltage transistors

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

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
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.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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Notes

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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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