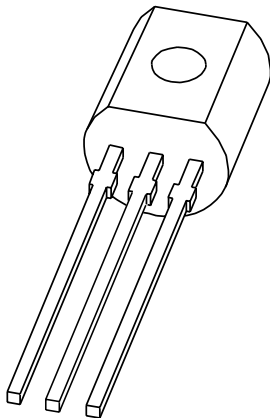


# DATA SHEET



## **BFV420** NPN high-voltage transistor

Product specification  
Supersedes data of 1999 Apr 23

2004 Nov 11

# NPN high-voltage transistor

# BFV420

### FEATURES

- Low current (max. 100 mA)
- High voltage (max. 100 V).

### APPLICATIONS

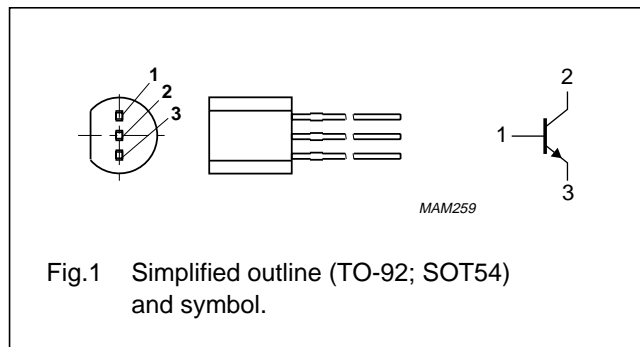
- Primarily intended for video applications (monitors).

### DESCRIPTION

NPN high-voltage transistor in a TO-92; SOT54 plastic package. PNP complement: BFV421.

### PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter



### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BFV420	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54

### 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	–	140	V
$V_{CEO}$	collector-emitter voltage	open base	–	100	V
$V_{EBO}$	emitter-base voltage	open collector	–	5	V
$I_C$	collector current (DC)		–	100	mA
$I_{CM}$	peak collector current		–	100	mA
$I_{BM}$	peak base current		–	100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 1	–	830	mW
$T_{stg}$	storage temperature		–65	+150	$^\circ\text{C}$
$T_j$	junction temperature		–	150	$^\circ\text{C}$
$T_{amb}$	ambient temperature		–65	+150	$^\circ\text{C}$

### Note

1. Transistor mounted on an FR4 printed-circuit board.

## NPN high-voltage transistor

BFV420

## 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 an FR4 printed-circuit board.

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$V_{CB} = 100\text{ V}; I_E = 0\text{ A}$	–	100	nA
		$V_{CB} = 100\text{ V}; I_E = 0\text{ A}; T_j = 150\text{ °C}$	–	10	$\mu\text{A}$
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = 4\text{ V}; I_C = 0\text{ A}$	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 10\text{ V}$	150	–	
		$I_C = 10\text{ mA}$ $I_C = 50\text{ mA}$	20	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 30\text{ mA}; I_B = 5\text{ mA}$	–	200	mV
$C_{re}$	feedback capacitance	$V_{CE} = 25\text{ V}; I_C = I_c = 0\text{ A}; f = 1\text{ MHz}$	–	1.5	pF
$f_T$	transition frequency	$V_{CE} = 20\text{ V}; I_C = 20\text{ mA};$ $f = 100\text{ MHz}$	150	–	MHz

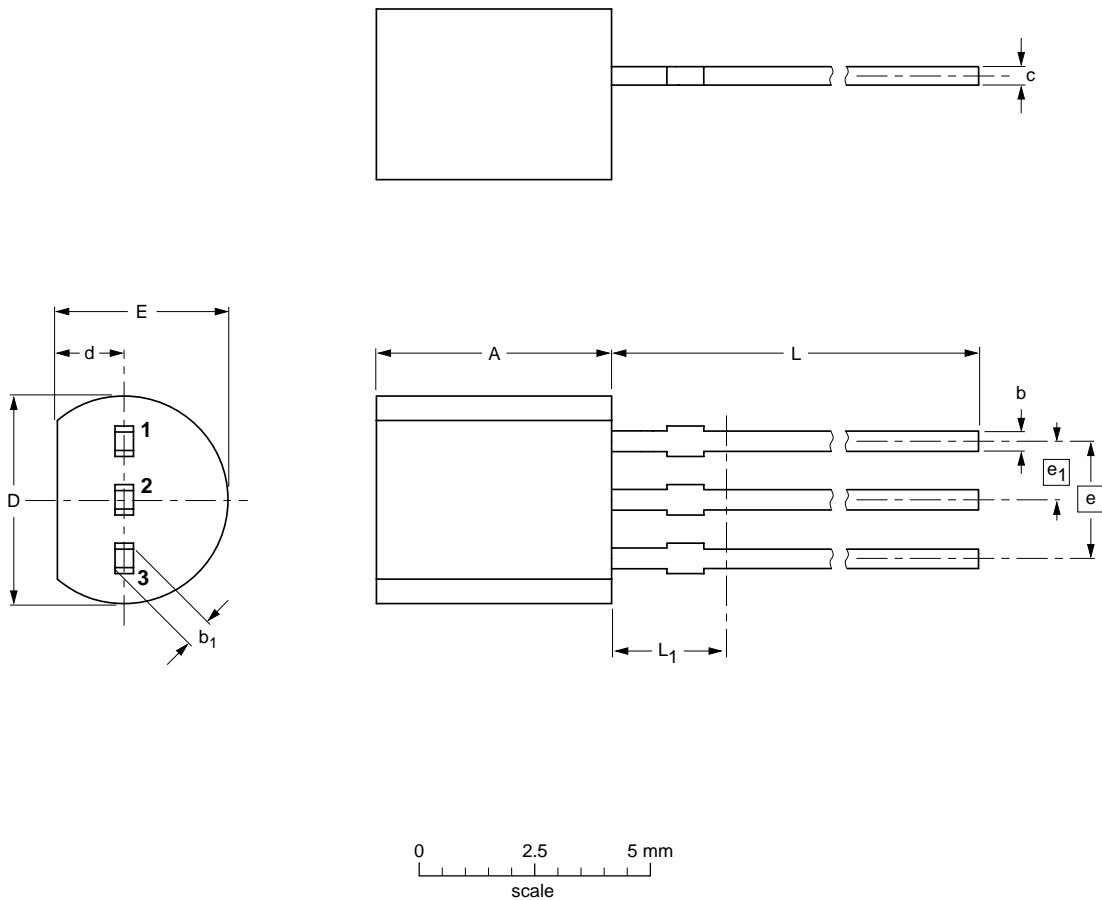
NPN high-voltage transistor

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PACKAGE OUTLINE

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

SOT54



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b <sub>1</sub>	c	D	d	E	e	e <sub>1</sub>	L	L <sub>1</sub> <sup>(1)</sup> 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

## NPN high-voltage transistor

BFV420

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	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.
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