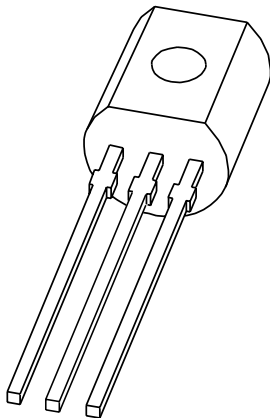


# DATA SHEET



## **BF420; BF422** NPN high-voltage transistors

Product specification  
Supersedes data of 1996 Dec 09

2004 Nov 10

# NPN high-voltage transistors

# BF420; BF422

### FEATURES

- Low feedback capacitance.

### APPLICATIONS

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

### DESCRIPTION

NPN transistors in a TO-92 plastic package.  
PNP complements: BF421 and BF423.

### PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter

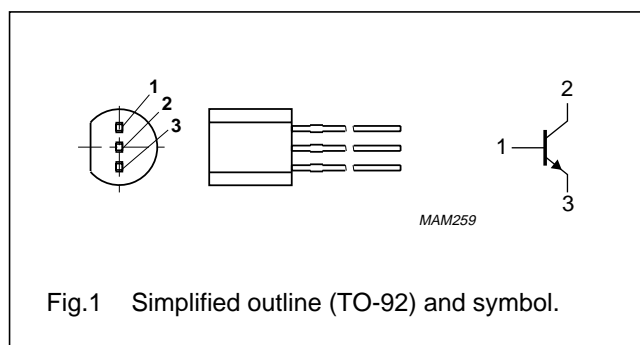


Fig.1 Simplified outline (TO-92) and symbol.

### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BF420	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54
BF422			

### QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage BF420 BF422	open emitter	–	300	V
			–	250	V
V <sub>CEO</sub>	collector-emitter voltage BF420 BF422	open base	–	300	V
			–	250	V
I <sub>CM</sub>	peak collector current		–	100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	–	830	mW
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = 20 V; I <sub>C</sub> = 25 mA	50	–	
C <sub>re</sub>	feedback capacitance	V <sub>CE</sub> = 30 V; I <sub>C</sub> = I <sub>c</sub> = 0 A; f = 1 MHz	–	1.6	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = 10 V; I <sub>C</sub> = 10 mA; f = 100 MHz	60	–	MHz

## NPN high-voltage transistors

## BF420; BF422

**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			
	BF420		–	300	V
	BF422		–	250	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BF420		–	300	V
	BF422		–	250	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	5	V
I <sub>C</sub>	collector current (DC)		–	50	mA
I <sub>CM</sub>	peak collector current		–	100	mA
I <sub>BM</sub>	peak base current		–	50	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	830	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	ambient temperature		–65	+150	°C

**Note**

1. Transistor mounted on a printed-circuit board.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th(j-a)</sub>	thermal resistance from junction to ambient	note 1	150	K/W

**Note**

1. Transistor mounted on a printed-circuit board.

**CHARACTERISTICS**T<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	V <sub>CB</sub> = 200 V; I <sub>E</sub> = 0 A	–	10	nA
		V <sub>CB</sub> = 200 V; I <sub>E</sub> = 0 A; T <sub>j</sub> = 150 °C	–	10	μA
I <sub>EBO</sub>	emitter-base cut-off current	V <sub>EB</sub> = 5 V; I <sub>C</sub> = 0 A	–	50	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = 20 V; I <sub>C</sub> = 25 mA	50	–	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 30 mA; I <sub>B</sub> = 5 mA	–	0.6	V
C <sub>re</sub>	feedback capacitance	V <sub>CE</sub> = 30 V; I <sub>C</sub> = i <sub>c</sub> = 0 A; f = 1 MHz	–	1.6	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = 10 V; I <sub>C</sub> = 10 mA; f = 100 MHz	60	–	MHz

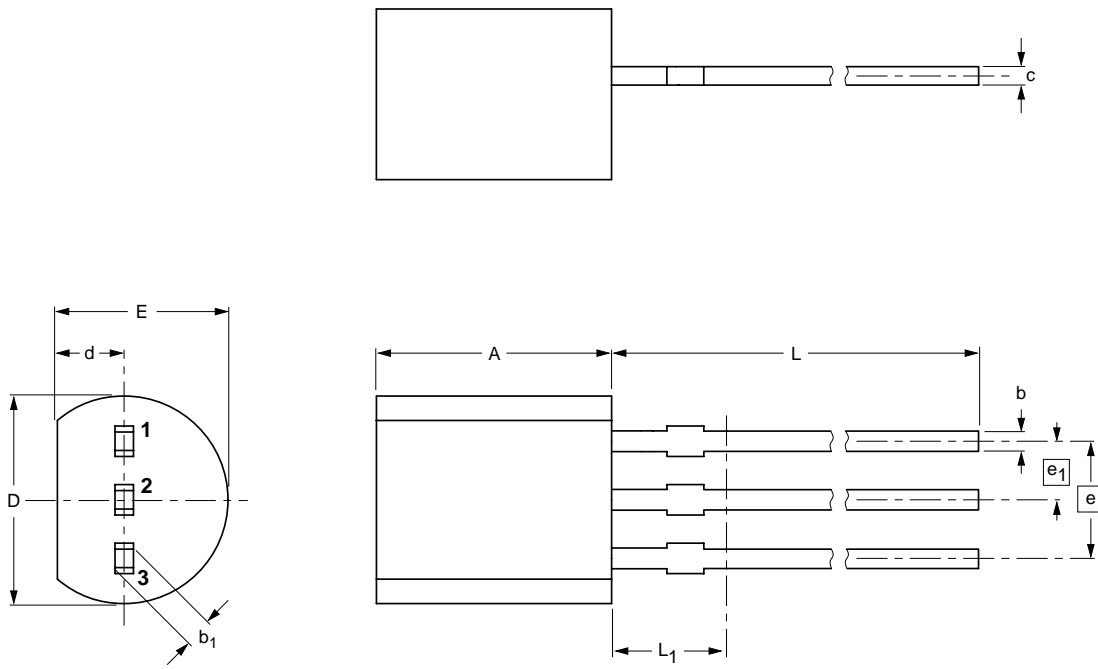
NPN high-voltage transistors

BF420; BF422

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 transistors

BF420; BF422

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