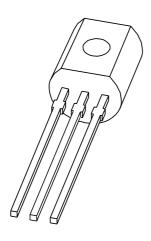
DISCRETE SEMICONDUCTORS

DATA SHEET



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

Product specification Supersedes data of 1996 Dec 09 2004 Nov 10





Philips Semiconductors Product specification

NPN high-voltage transistors

BF420; BF422

FEATURES

• Low feedback capacitance.

APPLICATIONS

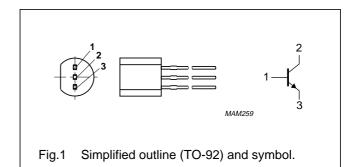
• Class-B video output stages in colour television and professional monitor equipment.

DESCRIPTION

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

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter



ORDERING INFORMATION

TYPE NUMBER		PACKAGE	
ITPE NOWIBER	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 _{CBO}	collector-base voltage	open emitter			
	BF420		_	300	V
	BF422		_	250	V
V _{CEO}	collector-emitter voltage	open base			
	BF420		_	300	V
	BF422		_	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	$V_{CE} = 30 \text{ V}; I_{C} = i_{c} = 0 \text{ A}; f = 1 \text{ MHz}$	_	1.6	pF
f _T	transition frequency	V _{CE} = 10 V; I _C = 10 mA; f = 100 MHz	60	_	MHz

2004 Nov 10 2

Philips Semiconductors Product specification

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 _{CBO}	collector-base voltage	open emitter			
	BF420		-	300	V
	BF422		-	250	V
V _{CEO}	collector-emitter voltage	open base			
	BF420		-	300	V
	BF422		-	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
Tj	junction temperature		_	150	°C
T _{amb}	ambient temperature		-65	+150	°C

Note

THERMAL CHARACTERISTICS

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

Note

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	μΑ
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	$I_C = 30 \text{ mA}; I_B = 5 \text{ mA}$	_	0.6	V
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 V; I _C = 10 mA; f = 100 MHz	60	_	MHz

2004 Nov 10 3

^{1.} Transistor mounted on a printed-circuit board.

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Philips Semiconductors Product specification

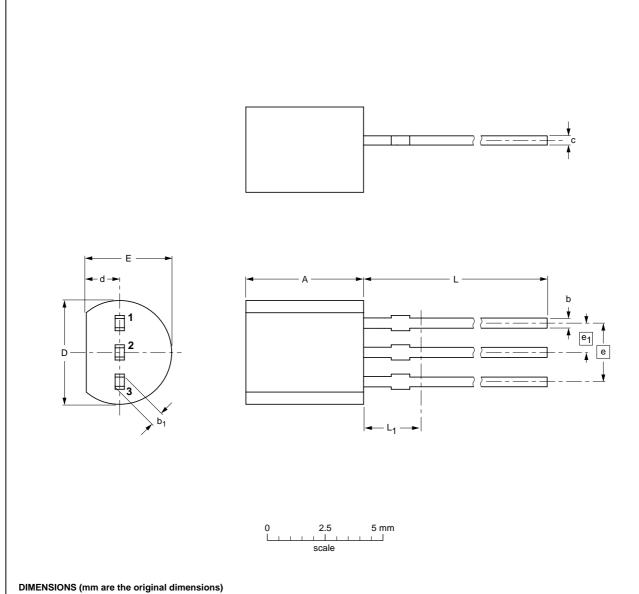
NPN high-voltage transistors

BF420; BF422

PACKAGE OUTLINE

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

SOT54



UNIT	A	b	b ₁	С	D	d	E	е	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	

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

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

2004 Nov 10 4 Philips Semiconductors Product specification

NPN high-voltage transistors

BF420; BF422

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.
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2004 Nov 10 5

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SCA76

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