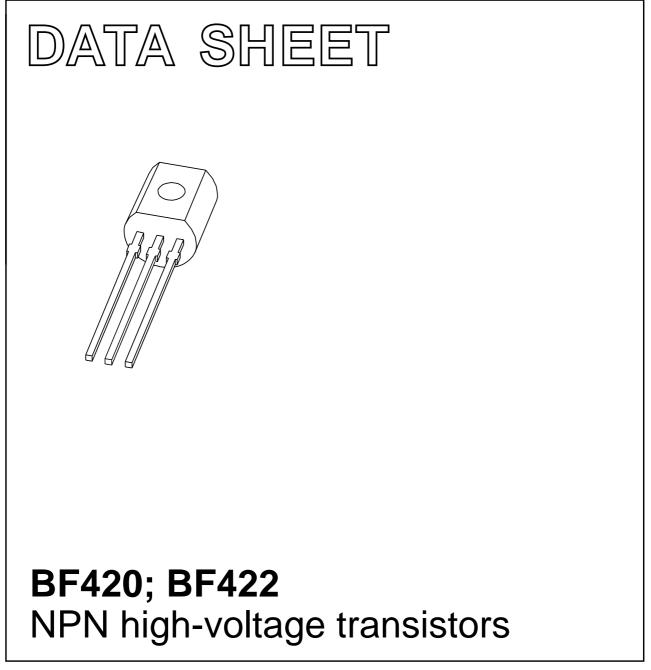
DISCRETE SEMICONDUCTORS



Product specification Supersedes data of 1996 Dec 09 2004 Nov 10



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	

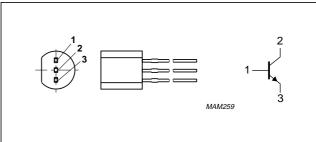


Fig.1 Simplified outline (TO-92) and symbol.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE			
ITFE NUMBER	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	$T_{amb} \le 25 \ ^{\circ}C$	_	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 V; I _C = 10 mA; f = 100 MHz	60	-	MHz

BF420; BF422

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	$T_{amb} \le 25 \ ^{\circ}C; \text{ note } 1$	-	830	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	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

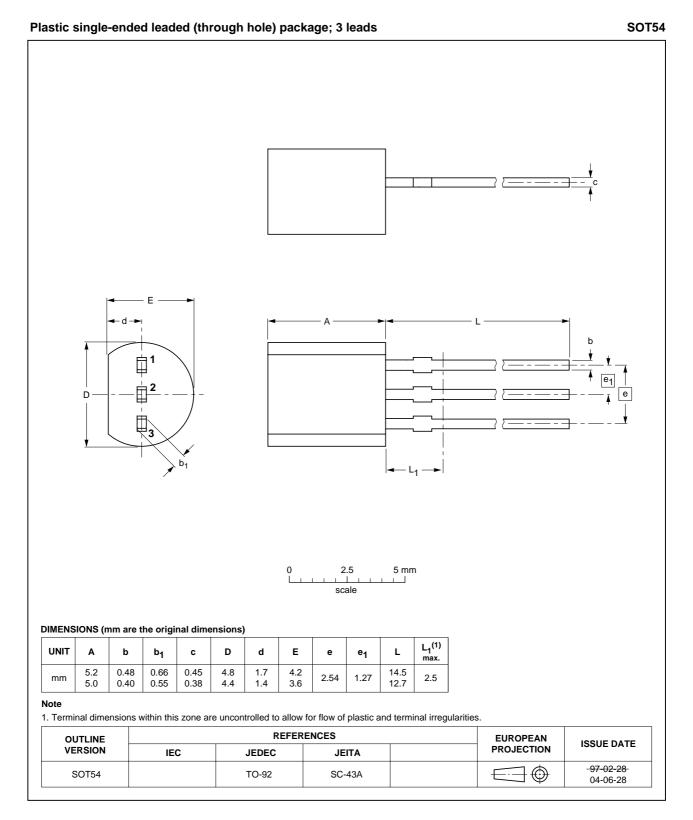
1. Transistor mounted on a printed-circuit board.

CHARACTERISTICS

 T_{amb} = 25 $^\circ C$ 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	$V_{EB} = 5 \text{ V}; \text{ I}_{C} = 0 \text{ A}$	-	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	$V_{CE} = 30 \text{ V}; I_{C} = i_{c} = 0 \text{ A}; f = 1 \text{ MHz}$	-	1.6	pF
f _T	transition frequency	V_{CE} = 10 V; I_{C} = 10 mA; f = 100 MHz	60	_	MHz

PACKAGE OUTLINE



BF420; BF422

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.
11	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.
	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

- 1. Please consult the most recently issued data sheet before initiating or completing a design.
- 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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