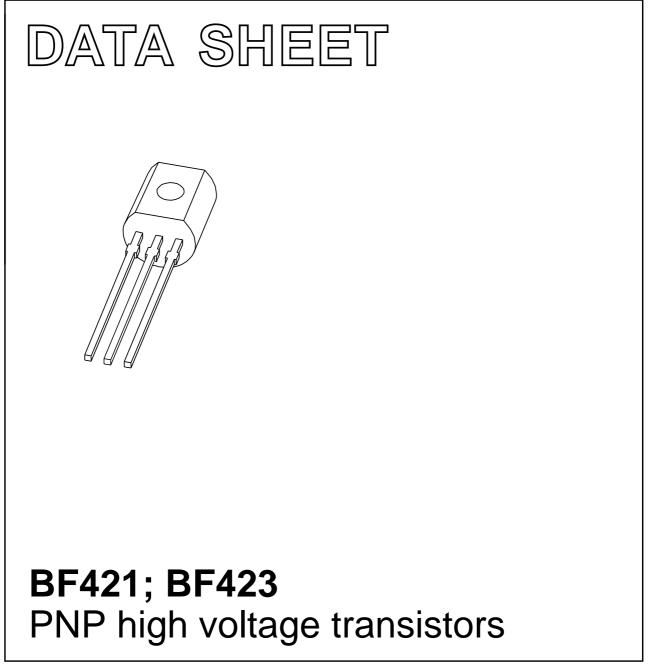
## DISCRETE SEMICONDUCTORS



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

PNP transistors in a TO-92 plastic package. NPN complements: BF420 and BF422.

#### PINNING

PIN	DESCRIPTION	
1	base	
2	collector	
3	emitter	

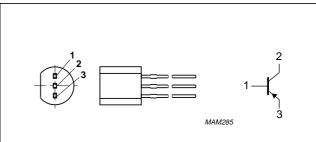


Fig.1 Simplified outline (TO-92) and symbol.

#### **ORDERING INFORMATION**

TYPE NUMBER	PACKAGE			
ITFE NUMBER	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 <sub>CBO</sub>	collector-base voltage	open emitter			
	BF421		-	-300	V
	BF423		-	-250	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BF421		-	-300	V
	BF423		-	-250	V
I <sub>CM</sub>	peak collector current		-	-100	mA
P <sub>tot</sub>	total power dissipation	$T_{amb} \le 25 \ ^{\circ}C$	_	830	mW
h <sub>FE</sub>	DC current gain	$V_{CE} = -20 \text{ V}; \text{ I}_{C} = -25 \text{ mA}$	50	-	
C <sub>re</sub>	feedback capacitance	$V_{CE} = -30 \text{ V}; I_C = i_c = 0 \text{ A}; f = 1 \text{ MHz}$	-	1.6	pF
f <sub>T</sub>	transition frequency	$V_{CE} = -10 \text{ V}; I_{C} = -10 \text{ mA}; f = 100 \text{ MHz}$	60	-	MHz

### BF421; BF423

### BF421; BF423

#### 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			
	BF421		_	-300	V
	BF423		_	-250	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BF421		_	-300	V
	BF423		_	-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	$T_{amb} \le 25 \ ^{\circ}C; note 1$	-	830	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
Tj	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

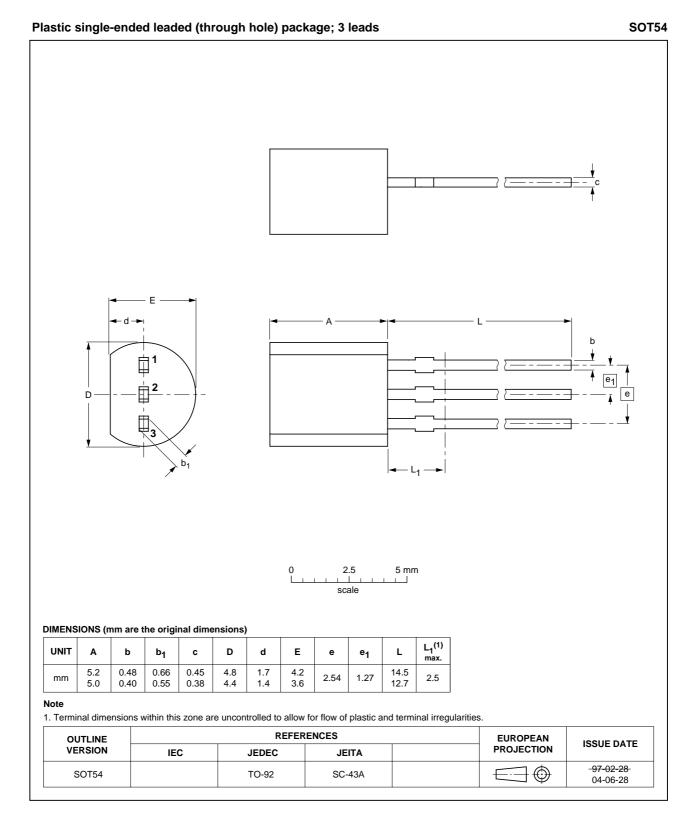
1. Transistor mounted on a printed-circuit board.

#### CHARACTERISTICS

 $T_{amb}$  = 25  $^\circ C$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	$V_{CB} = -200 \text{ V}; I_E = 0 \text{ A}$	_	-10	nA
		$V_{CB} = -200 \text{ V}; I_E = 0 \text{ A}; T_j = 150 \text{ °C}$	-	-10	μA
I <sub>EBO</sub>	emitter-base cut-off current	$V_{EB} = -5 \text{ V}; \text{ I}_{C} = 0 \text{ A}$	_	-50	nA
h <sub>FE</sub>	DC current gain	$V_{CE} = -20 \text{ V}; \text{ I}_{C} = -25 \text{ mA}$	50	_	
V <sub>CEsat</sub>	collector-emitter saturation voltage	$I_{C} = -30 \text{ mA}; I_{B} = -5 \text{ mA}$	-	-0.6	V
C <sub>re</sub>	feedback capacitance	$V_{CE} = -30 \text{ V}; I_C = i_c = 0 \text{ A}; f = 1 \text{ MHz}$	_	1.6	pF
f <sub>T</sub>	transition frequency	$V_{CE} = -10 \text{ V}; I_{C} = -10 \text{ mA}; f = 100 \text{ MHz}$	60	_	MHz

#### PACKAGE OUTLINE



### BF421; BF423

BF421; BF423

#### 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.
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.
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- 3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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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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Printed in The Netherlands

R75/03/pp6

Date of release: 2004 Nov 10

Document order number: 9397 750 13583

SCA76

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