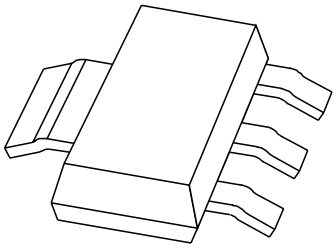
DATA SHEET



BF721; BF723
PNP high-voltage transistors

Product specification
Supersedes data of September 1994
File under Discrete Semiconductors, SC04

1996 Dec 05

Philips
Semiconductors

PHILIPS

PNP high-voltage transistors

BF721 has been discontinued

BF721; BF723

FEATURES

- Low feedback capacitance.

APPLICATIONS

- Class-B video output stages of colour television receivers.
- General purpose high voltage circuits.

DESCRIPTION

PNP transistors in a SOT223 plastic package.
NPN complements: BF720 and BF722.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter
4	collector

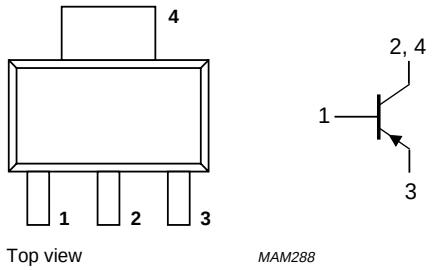


Fig.1 Simplified outline (SOT223) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BF721		–	–300	V
	BF723		–	–250	V
V_{CEO}	collector-emitter voltage	open base			
	BF721		–	–300	V
	BF723		–	–250	V
I_{CM}	peak collector current		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	–	1.2	W
h_{FE}	DC current gain	$I_C = -25$ mA; $V_{CE} = -20$ V	50	–	
C_{re}	feedback capacitance	$I_C = i_c = 0$; $V_{CE} = -30$ V; f = 1 MHz	–	2.5	pF
f_T	transition frequency	$I_C = -10$ mA; $V_{CE} = -10$ V; f = 100 MHz	60	–	MHz

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BF721		–	–300	V
	BF723		–	–250	V
V_{CEO}	collector-emitter voltage	open base			
	BF721		–	–300	V
	BF723		–	–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	$T_{amb} \leq 25$ °C; note 1	–	1.2	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Device mounted on printed-circuit board, single sided copper, tinplated, mounting pad for collector 1 cm^2.
   For other mounting conditions, see *"Thermal considerations for SOT223 in the General part of handbook SC04".*

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	106	K/W
$R_{th\ j\text{-}s}$	thermal resistance from junction to soldering point	note 1	25	K/W

Note

1. Device mounted on printed-circuit board, single sided copper, tinplated, mounting pad for collector 1 cm^2.
   For other mounting conditions, see *"Thermal considerations for SOT223 in the General part of handbook SC04".*

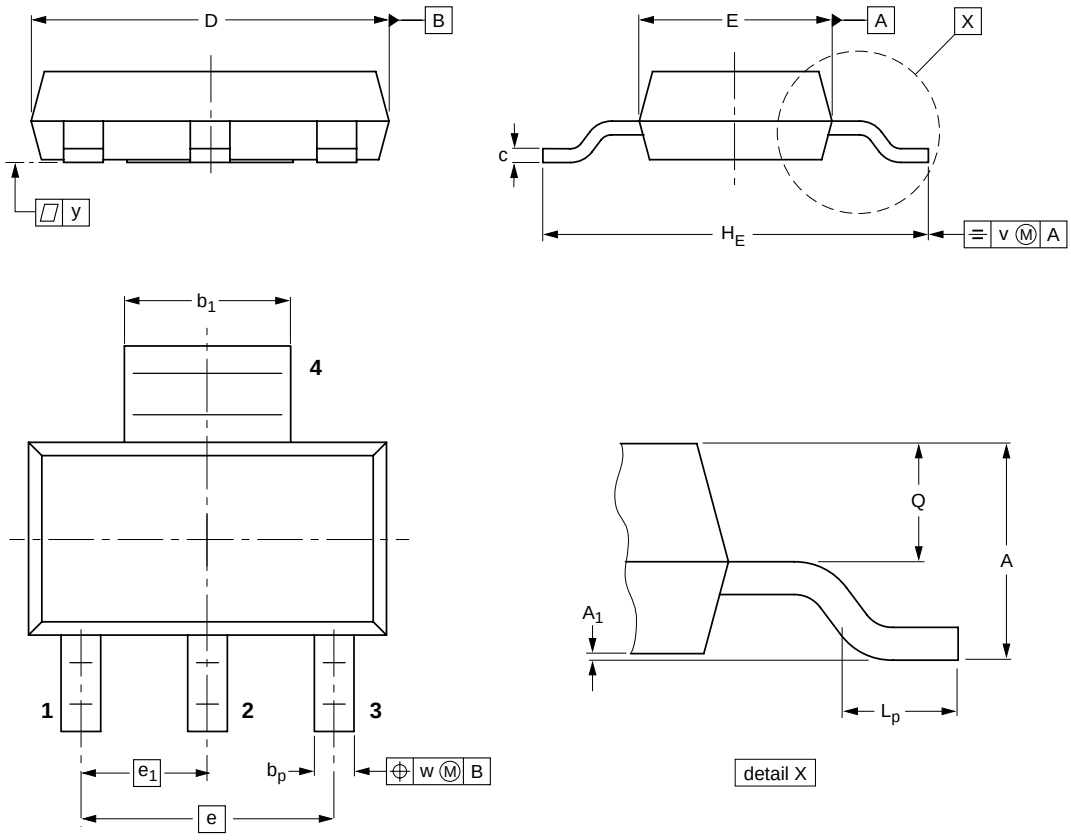
CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = –200$ V	–	–10	nA
		$I_E = 0$; $V_{CB} = –200$ V; $T_j = 150$ °C	–	–10	µA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = –5$ V	–	–50	nA
h_{FE}	DC current gain	$I_C = –25$ mA; $V_{CE} = –20$ V	–50	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = –30$ mA; $I_B = –5$ mA	–	–0.6	V
C_{re}	feedback capacitance	$I_C = i_c = 0$; $V_{CE} = –30$ V; f = 1 MHz	–	2.5	pF
f_T	transition frequency	$I_C = –10$ mA; $V_{CE} = –10$ V; f = 100 MHz	60	–	MHz

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads **SOT223**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1	b_p	b_1	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.8 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22	6.7 6.3	3.7 3.3	4.6	2.3	7.3 6.7	1.1 0.7	0.95 0.85	0.2	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT223						~~96-11-11~~ 97-02-28

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

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