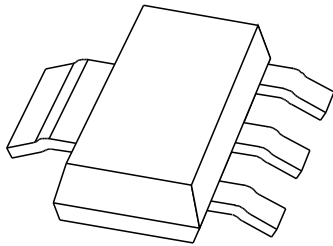


DATA SHEET



BF720; BF722 NPN high-voltage transistors

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

1996 Dec 05

NPN high-voltage transistors

BF720; BF722

FEATURES

- Low feedback capacitance.

APPLICATIONS

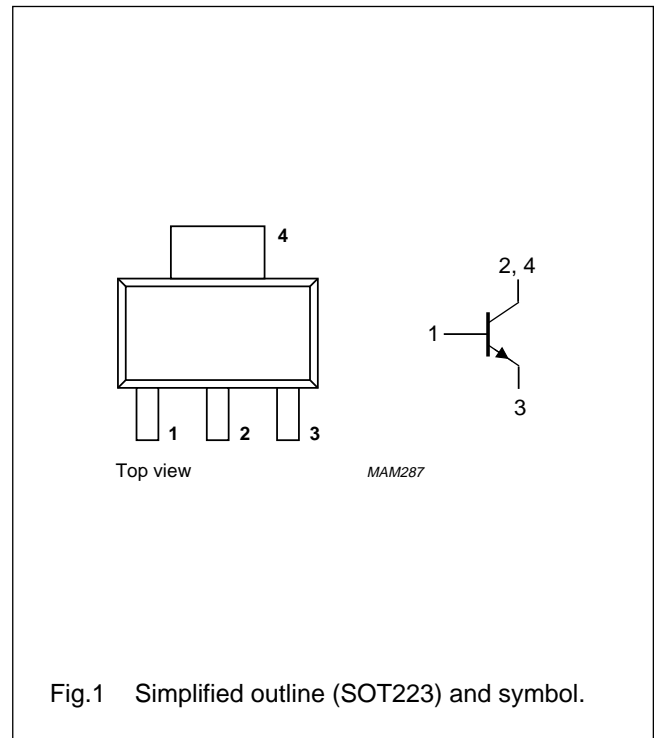
- Class-B video output stages of colour television receivers.
- General purpose high voltage circuits.

DESCRIPTION

NPN transistors in a SOT223 plastic package.
PNP complements: BF721 and BF723.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter
4	collector



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BF720		–	300	V
	BF722		–	250	V
V _{CEO}	collector-emitter voltage	open base			
	BF720		–	300	V
	BF722		–	250	V
I _{CM}	peak collector current		–	100	mA
P _{tot}	total power dissipation	T _{amb} ≤ 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	–	1.6	pF
f _T	transition frequency	I _C = 10 mA; V _{CE} = 10 V; f = 100 MHz	60	–	MHz

NPN high-voltage transistors

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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			
	BF720		–	300	V
	BF722		–	250	V
V _{CEO}	collector-emitter voltage	open base			
	BF720		–	300	V
	BF722		–	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	–	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

- Device mounted on printed-circuit board, single sided copper, tinplated, mounting pad for collector 1 cm².
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-a}	thermal resistance from junction to ambient	note 1	106	K/W
R _{th j-s}	thermal resistance from junction to soldering point	note 1	25	K/W

Note

- Device mounted on printed-circuit board, single sided copper, tinplated, mounting pad for collector 1 cm².
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	–	1.6	pF
f _T	transition frequency	I _C = 10 mA; V _{CE} = 10 V; f = 100 MHz	60	–	MHz

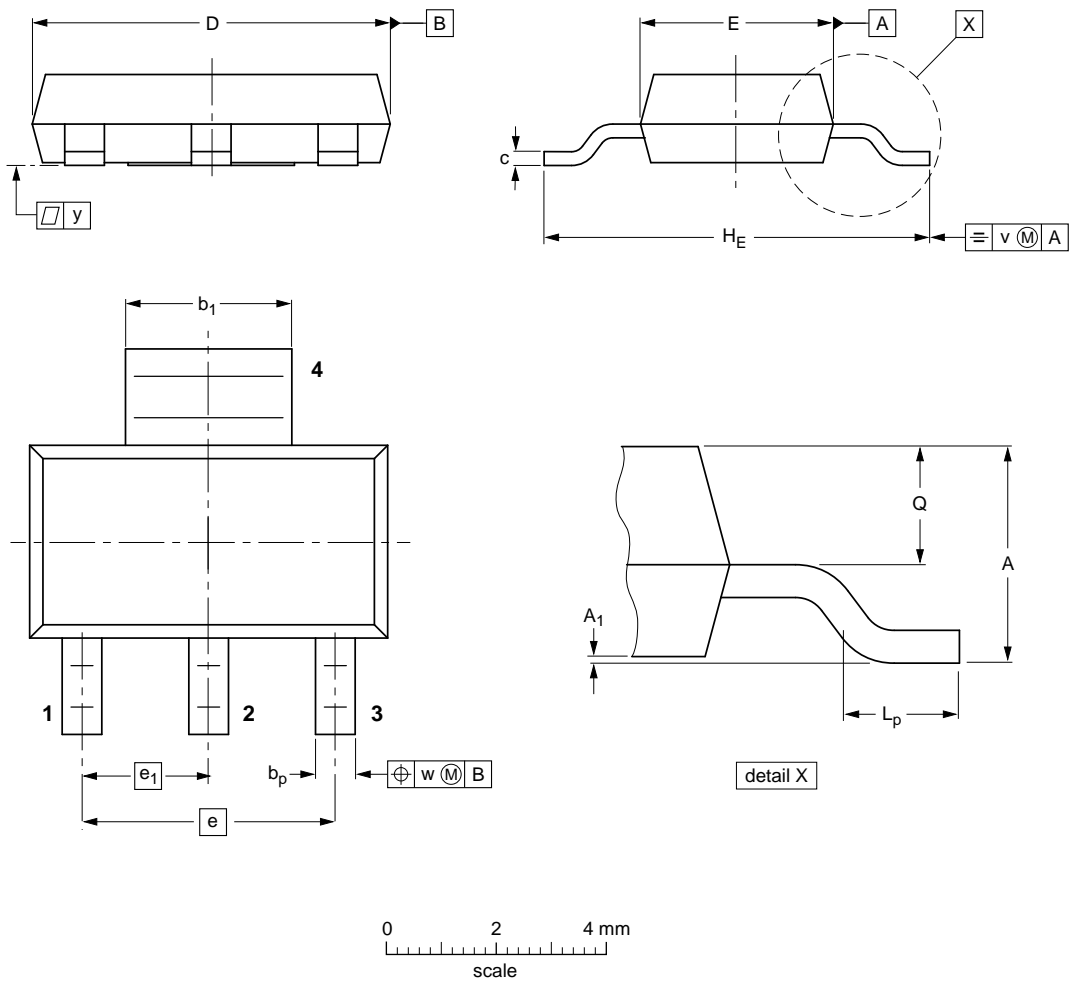
NPN high-voltage transistors

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PACKAGE OUTLINE

Package description

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

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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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