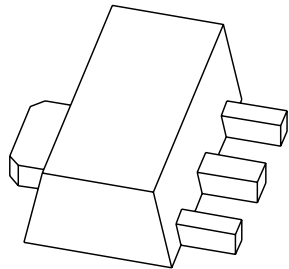


DATA SHEET



BF620; BF622 NPN high-voltage transistors

Product specification
Supersedes data of 1997 Apr 09

1999 Apr 21

NPN high-voltage transistors

BF620; BF622

FEATURES

- Low current (max. 50 mA)
- High voltage (max. 300 V).

APPLICATIONS

- Video output stages.

DESCRIPTION

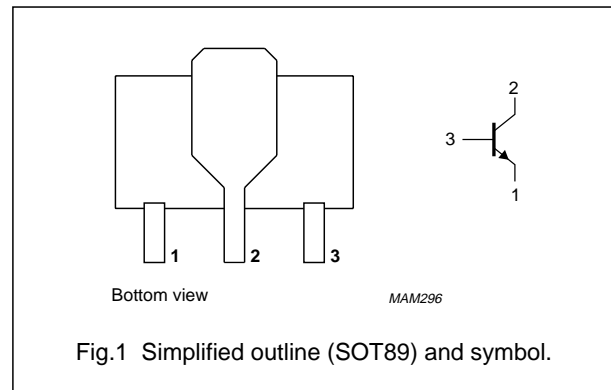
NPN high-voltage transistor in a SOT89 plastic package.
PNP complements: BF621 and BF623.

MARKING

TYPE NUMBER	MARKING CODE
BF620	DC
BF622	DA

PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



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			
	BF620		–	300	V
	BF622		–	250	V
V_{CEO}	collector-emitter voltage	open-base			
	BF620		–	300	V
	BF622		–	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	$T_{amb} \leq 25\text{ °C}$; note 1	–	1.25	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 a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm².
For other mounting conditions, see "Thermal considerations for SOT89 in the General Part of associated Handbook".

NPN high-voltage transistors

BF620; BF622

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	100	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		20	K/W

Note

- Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm².
For other mounting conditions, see "Thermal considerations for SOT89 in the General Part of associated Handbook".

CHARACTERISTICS

$T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 200\text{ V}$	–	10	nA
		$I_E = 0; V_{CB} = 200\text{ V}; T_j = 150\text{ °C}$	–	10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	–	50	nA
h_{FE}	DC current gain	$I_C = 25\text{ mA}; V_{CE} = 20\text{ V}$	50	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 30\text{ mA}; I_B = 5\text{ mA}$	–	600	mV
C_{re}	feedback capacitance	$I_C = I_c = 0; V_{CE} = 30\text{ V}; f = 1\text{ MHz}$	–	1.6	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	60	–	MHz

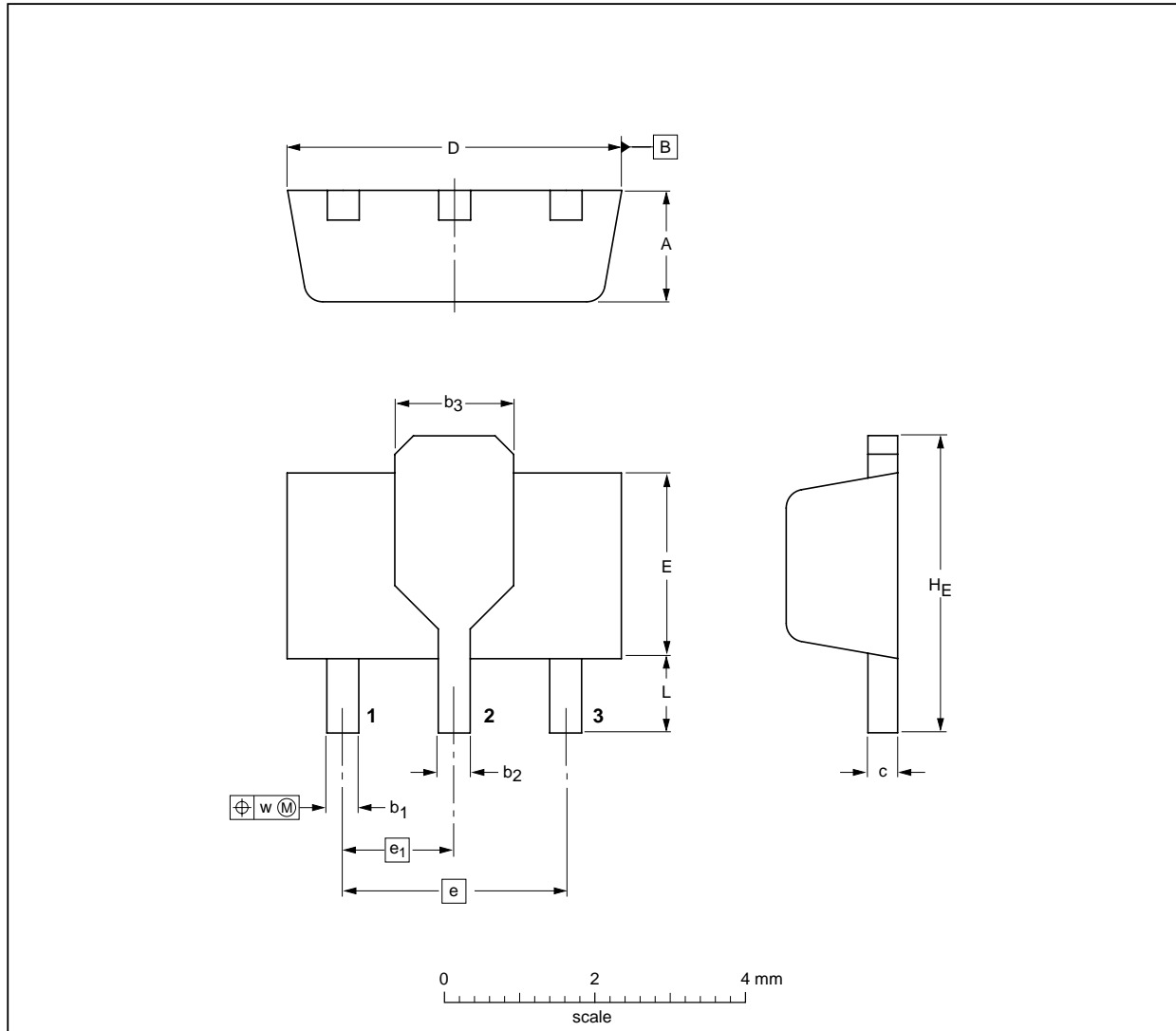
NPN high-voltage transistors

BF620; BF622

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 3 leads

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b ₁	b ₂	b ₃	c	D	E	e	e ₁	H _E	L min.	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.37	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	0.8	0.13

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT89						97-02-28

NPN high-voltage transistors

BF620; BF622

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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

NPN high-voltage transistors

BF620; BF622

NOTES

NPN high-voltage transistors

BF620; BF622

NOTES

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Printed in The Netherlands

115002/00/03/pp8

Date of release: 1999 Apr 21

Document order number: 9397 750 05702

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