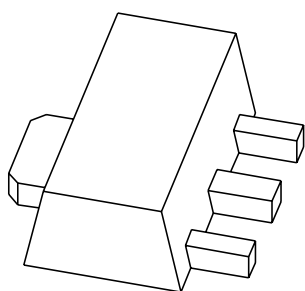


DATA SHEET



BST15; BST16 PNP high-voltage transistors

Product specification
Supersedes data of 1998 Aug 03

1999 Apr 26

PNP high-voltage transistors

BST15; BST16

FEATURES

- Low current (max. 200 mA)
- High voltage (max. 300 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

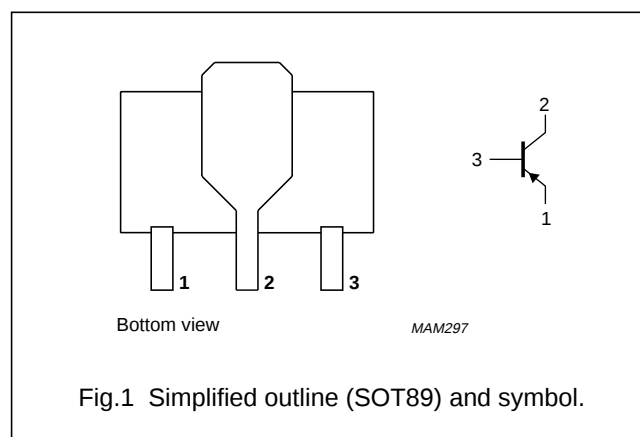
PNP high-voltage transistor in a SOT89 plastic package.
NPN complements: BST39 and BST40.

MARKING

TYPE NUMBER	MARKING CODE
BST15	BT1
BST16	BT2

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			
	BST15		–	–200	V
	BST16		–	–350	V
V_{CEO}	collector-emitter voltage	open base			
	BST15		–	–200	V
	BST16		–	–300	V
V_{EBO}	emitter-base voltage	open collector			
	BST15		–	–4	V
	BST16		–	–6	V
I_C	collector current (DC)		–	–200	mA
I_{CM}	peak collector current		–	–400	mA
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$; note 1	–	1.3	W
T_{stg}	storage temperature		–65	+150	$^{\circ}\text{C}$
T_j	junction temperature		–	150	$^{\circ}\text{C}$
T_{amb}	operating ambient temperature		–65	+150	$^{\circ}\text{C}$

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”.

PNP high-voltage transistors

BST15; BST16

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	95	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		15	K/W

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".

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current				
	BST15	$I_E = 0; V_{CB} = -175\text{ V}$	–	–100	nA
	BST16	$I_E = 0; V_{CB} = -280\text{ V}$	–	–100	nA
I_{EBO}	emitter cut-off current				
	BST15	$I_C = 0; V_{EB} = -4\text{ V}$	–	–100	nA
	BST16	$I_C = 0; V_{EB} = -6\text{ V}$	–	–100	nA
h_{FE}	DC current gain	$I_C = -50\text{ mA}; V_{CE} = -10\text{ V}$			
	BST15		30	150	
	BST16		30	120	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -50\text{ mA}; I_B = -5\text{ mA}$	–	750	mV
C_c	collector capacitance	$I_E = I_E = 0; V_{CB} = -10\text{ V};$ $f = 1\text{ MHz}$	–	15	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -10\text{ V};$ $f = 100\text{ MHz}$	15	–	MHz

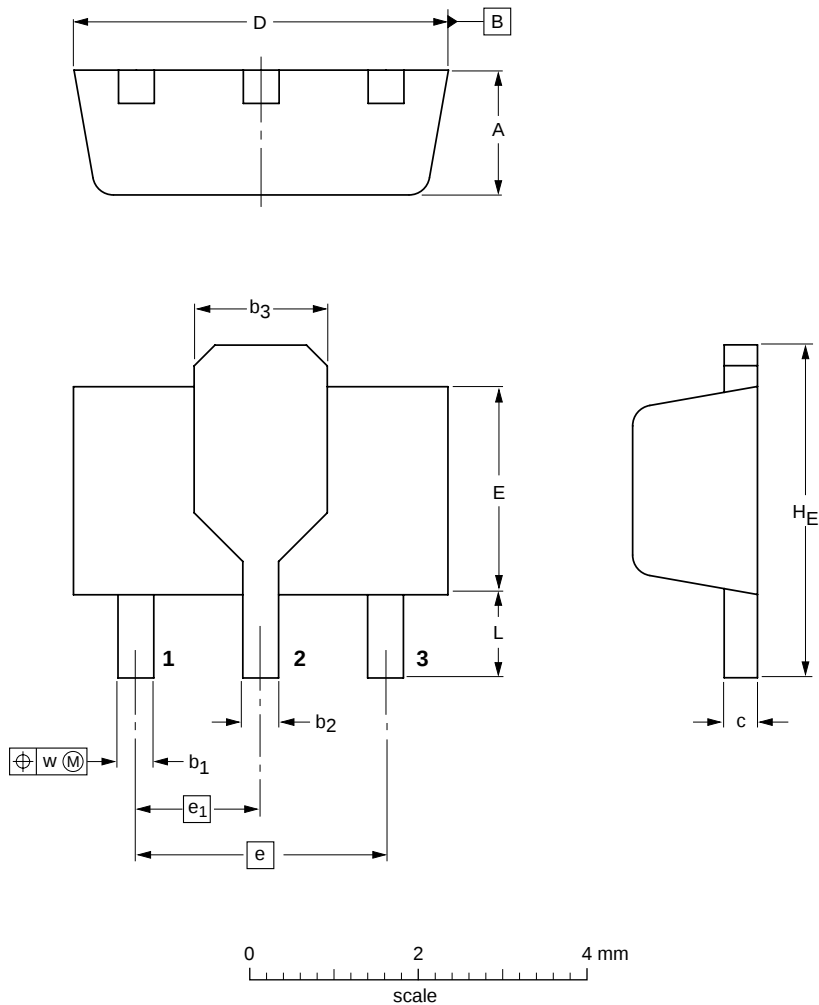
PNP high-voltage transistors

BST15; BST16

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

PNP high-voltage transistors

BST15; BST16

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.

PNP high-voltage transistors

BST15; BST16

NOTES

PNP high-voltage transistors

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NOTES

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