

DATA SHEET



BST15; BST16 PNP high-voltage transistors

Product specification
Supersedes data of 1999 Apr 26

2004 Dec 14

PNP high-voltage transistors

BST15; BST16

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

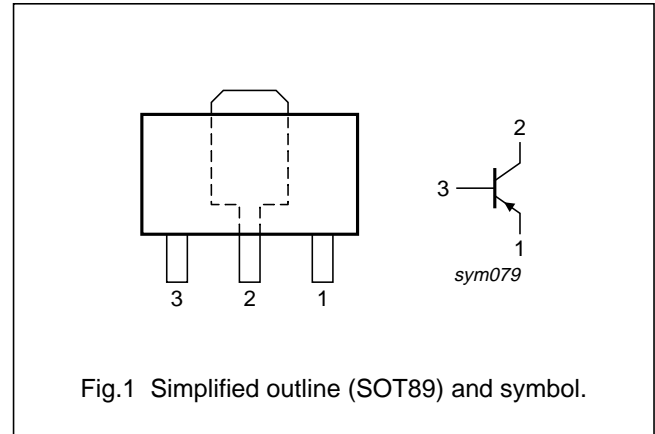
PNP high-voltage transistor in a SOT89 plastic package.
NPN complements: BST39 and BST40.

MARKING

TYPE NUMBER	MARKING CODE
BST15	BT1
BST16	BT2

PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BST15	SC-62	plastic surface mounted package; collector pad for good heat transfer; 3 leads	SOT89
BST16			

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LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

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} ≤ 25 °C; note 1	–	1.3	W
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	150	°C
T _{amb}	ambient temperature		–65	+150	°C

Note

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

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

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

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CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector-base cut-off current				
	BST15	$I_E = 0\text{ A}; V_{CB} = -175\text{ V}$	–	–100	nA
	BST16	$I_E = 0\text{ A}; V_{CB} = -280\text{ V}$	–	–100	nA
I_{EBO}	emitter-base cut-off current				
	BST15	$I_C = 0\text{ A}; V_{EB} = -4\text{ V}$	–	–100	nA
	BST16	$I_C = 0\text{ A}; V_{EB} = -6\text{ V}$	–	–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	$I_E = i_e = 0\text{ A}; V_{CB} = -10\text{ V};$ $f = 1\text{ MHz}$	–	15	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -10\text{ V};$ $f = 100\text{ MHz}$	15	–	MHz

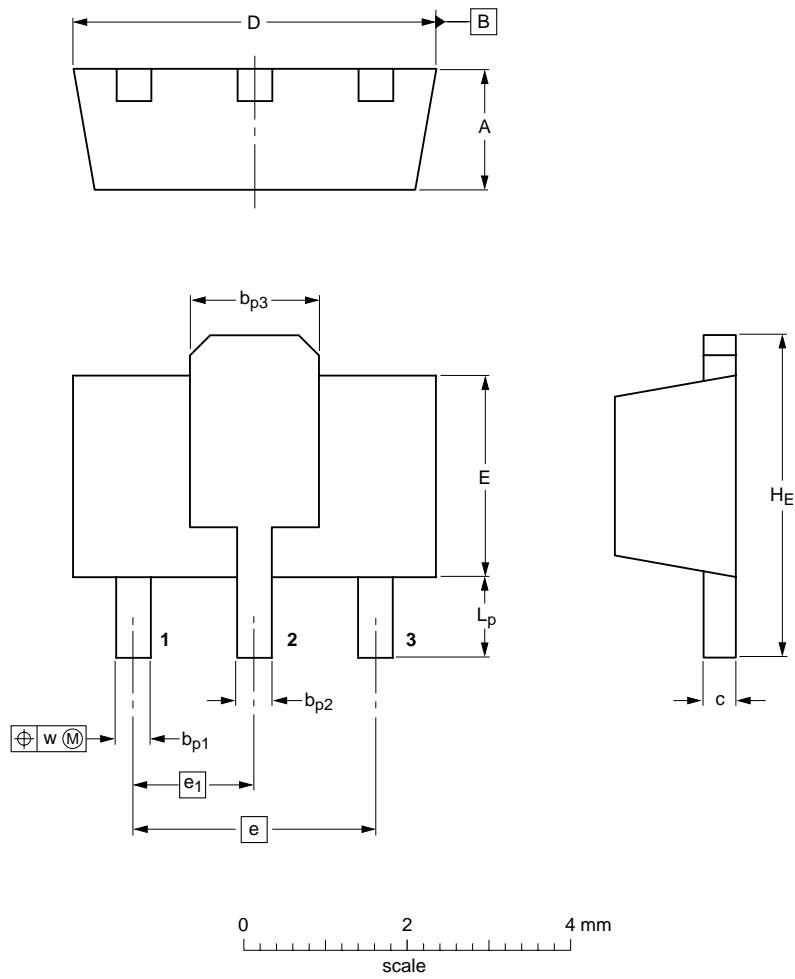
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PACKAGE OUTLINE

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

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	bp1	bp2	bp3	c	D	E	e	e1	HE	Lp	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT89		TO-243	SC-62		99-09-13 04-08-03

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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	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.
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