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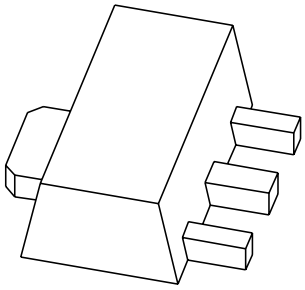
DATA SHEET



BST15; BST16
PNP high-voltage transistors

Product specification
Supersedes data of 1999 Apr 26

2004 Dec 14

Philips
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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

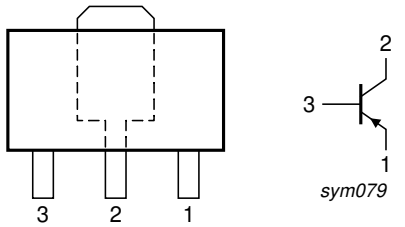


Fig.1 Simplified outline (SOT89) and symbol.

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			

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	$T_{amb} \leq 25$ °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

1. Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm^2. 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

1. Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm^2. For other mounting conditions, see *"Thermal considerations for SOT89 in the General Part of associated Handbook".*

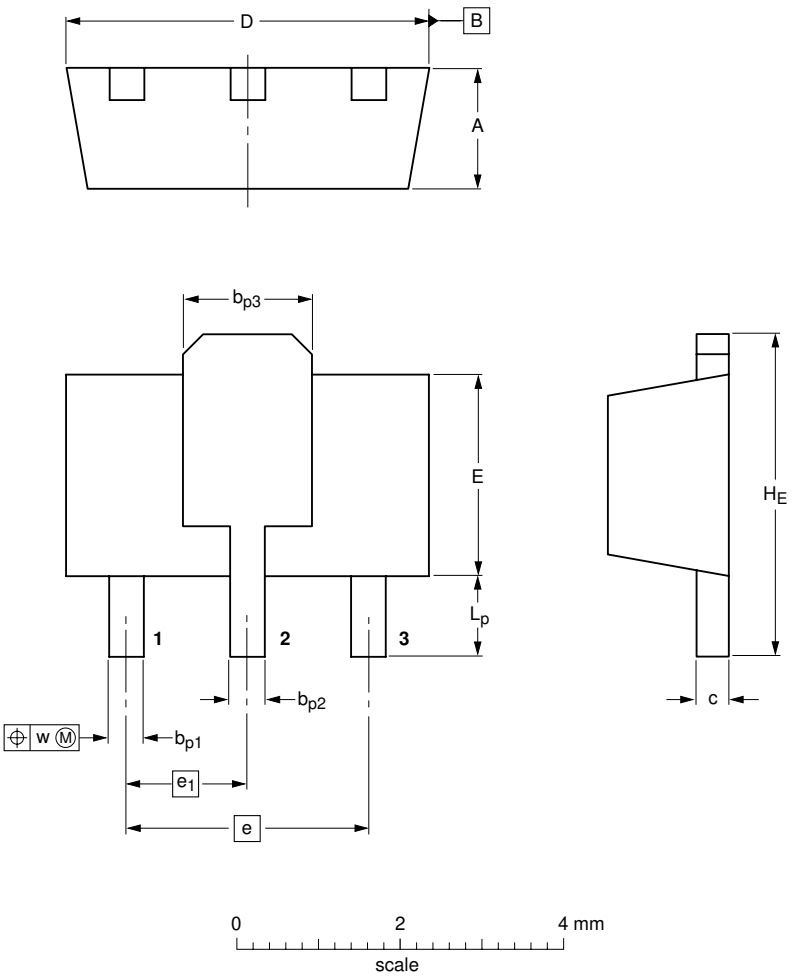
CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

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

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 3 leads **SOT89**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_{p1}	b_{p2}	b_{p3}	c	D	E	e	e_1	H_E	L_p	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

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.
II	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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