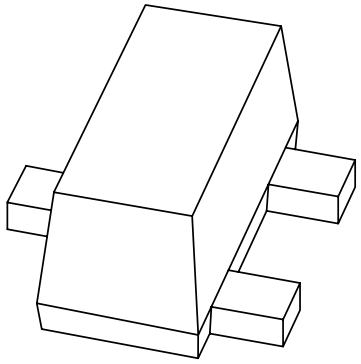
DATA SHEET



PBSS3540F

40 V low V_{CEsat} PNP transistor

Product specification

2001 Jul 13

Philips
Semiconductors

PHILIPS

40 V low V_{CEsat} PNP transistor PBSS3540F

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved thermal behaviour due to flat leads
- Enhanced performance over SOT23 general purpose transistors.

APPLICATIONS

- General purpose switching and muting
- Low frequency driver circuits
- Audio frequency general purpose applications
- Battery driven equipment (mobile phones, video cameras, hand-held devices).

DESCRIPTION

PNP low V_{CEsat} transistor in a SC-89 (SOT490) plastic package.
NPN complement: PBSS2540F.

MARKING

TYPE NUMBER	MARKING CODE
PBSS3540F	2D

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	–40	V
I_{CM}	peak collector current	–1	A
R_{CEsat}	equivalent on-resistance	<700	mΩ

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

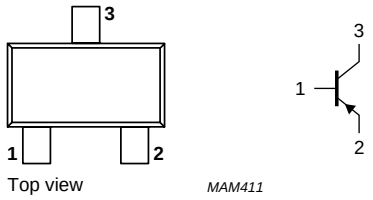


Fig.1 Simplified outline (SC-89; SOT490) and symbol.

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	–	–40	V
V_{CEO}	collector-emitter voltage	open base	–	–40	V
V_{EBO}	emitter-base voltage	open collector	–	–6	V
I_C	collector current (DC)		–	–500	mA
I_{CM}	peak collector current		–	–1	A
I_{BM}	peak base current		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	in free air	500	K/W

CHARACTERISTICS

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

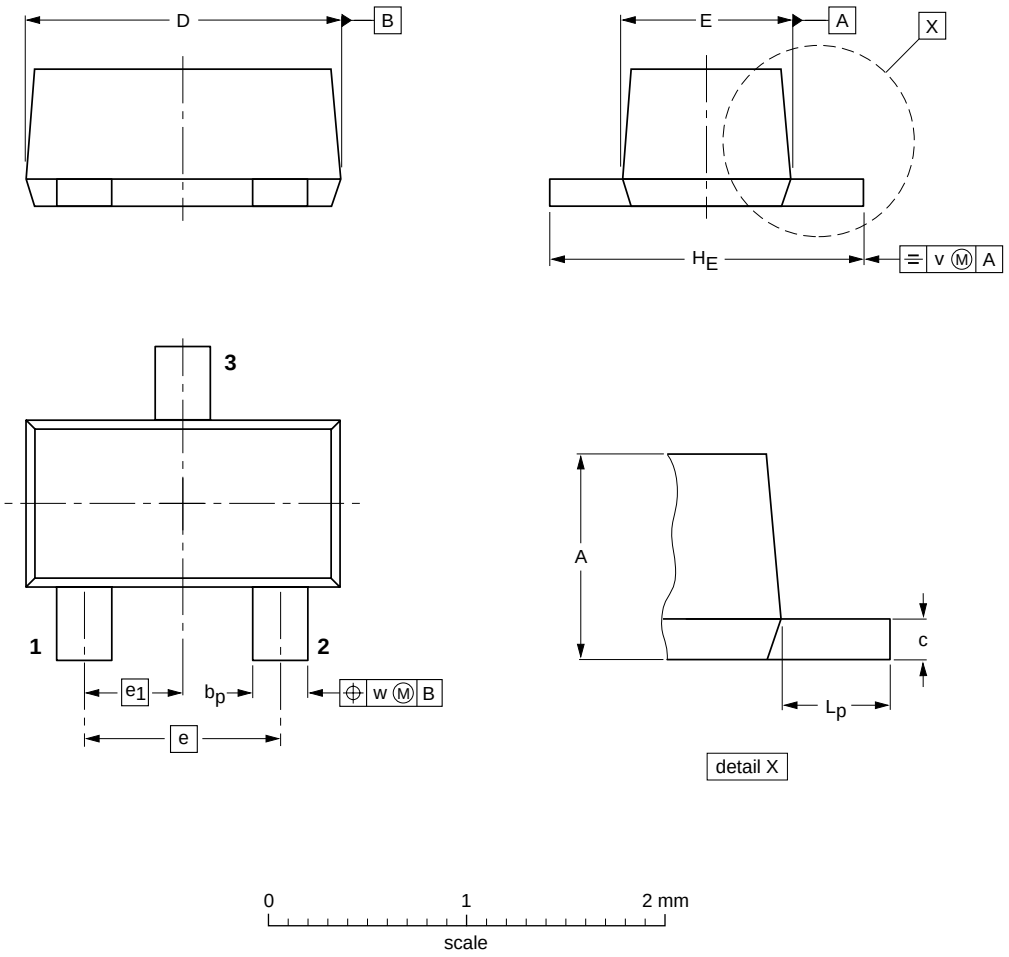
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	V_{CB} = –40 V; I_E = 0	–	–	–100	nA
		V_{CB} = –40 V; I_E = 0; T_j = 150 °C	–	–	–50	µA
I_{BEO}	emitter-base cut-off current	V_{EB} = –5 V; I_C = 0	–	–	–100	nA
h_{FE}	DC current gain	V_{CE} = –2 V				
		I_C = –10 mA	200	–	–	
		I_C = –100 mA; note 1	150	–	–	
		I_C = –500 mA; note 1	40	–	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –10 mA; I_B = –0.5 mA	–	–	–50	mV
		I_C = –100 mA; I_B = –5 mA	–	–	–130	mV
		I_C = –200 mA; I_B = –10 mA	–	–	–200	mV
		I_C = –500 A; I_B = –50 mA; note 1	–	–	–350	mV
R_{CEsat}	equivalent on-resistance	I_C = –500 mA; I_B = –50 mA; note 1	–	440	<700	mΩ
V_{BEsat}	base-emitter saturation voltage	I_C = –500 mA; I_B = –50 mA; note 1	–	–	–1.2	V
V_{BEon}	base-emitter turn-on voltage	V_{CE} = –2 V; I_C = –100 mA; note 1	–	–	–1.1	V
C_c	collector capacitance	V_{CB} = –10 V; I_E = I_e = 0; f = 1 MHz	–	–	10	pF
f_T	transition frequency	I_C = –100 mA; V_{CE} = –5 V; f = 100 MHz	100	300	–	MHz

Note

1. Pulse test: $t_p \leq 300$ ms; $\delta \leq 0.02$.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT490**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	e	e_1	H_E	L_p	v	w
mm	0.8 0.6	0.33 0.23	0.2 0.1	1.7 1.5	0.95 0.75	1.0	0.5	1.7 1.5	0.5 0.3	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT490			SC-89			98-10-23

DATA SHEET STATUS

DATA SHEET STATUS(1)	PRODUCT STATUS(2)	DEFINITIONS
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.
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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Printed in The Netherlands 613514/01/pp8 Date of release: 2001 Jul 13 Document order number: 9397 750 08373

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