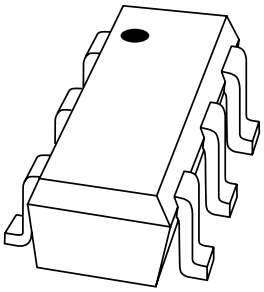
DATA SHEET



PBSS5320D

20 V low V_{CEsat} PNP transistor

Product specification

2002 Jun 12

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20 V low V_{CEsat} PNP transistor PBSS5320D

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation

APPLICATIONS

- Supply line switching circuits
- Battery management applications
- DC/DC converter applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers).

DESCRIPTION

PNP low V_{CEsat} transistor in a SOT457 (SC-74) plastic package.

MARKING

TYPE NUMBER	MARKING CODE
PBSS5320D	52

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	–20	V
I_C	collector current (DC)	–3	A
I_{CM}	peak collector current	–5	A
R_{CEsat}	equivalent on-resistance	133	mΩ

PINNING

PIN	DESCRIPTION
1	collector
2	collector
3	base
4	emitter
5	collector
6	collector

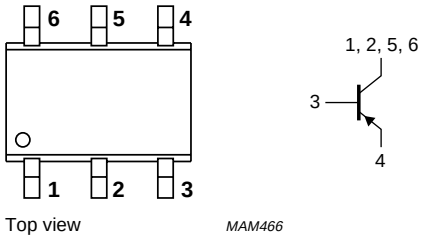


Fig.1 Simplified outline (SOT457; SC-74) and symbol.

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	–	–20	V
V_{CEO}	collector-emitter voltage	open base	–	–20	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–3	A
I_{CM}	peak collector current		–	–5	A
I_B	base current		–	–500	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	600	mW
		$T_{amb} \leq 25$ °C; note 2	–	750	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Notes

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	208	K/W
		note 2	160	K/W

Notes

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

CHARACTERISTICS

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

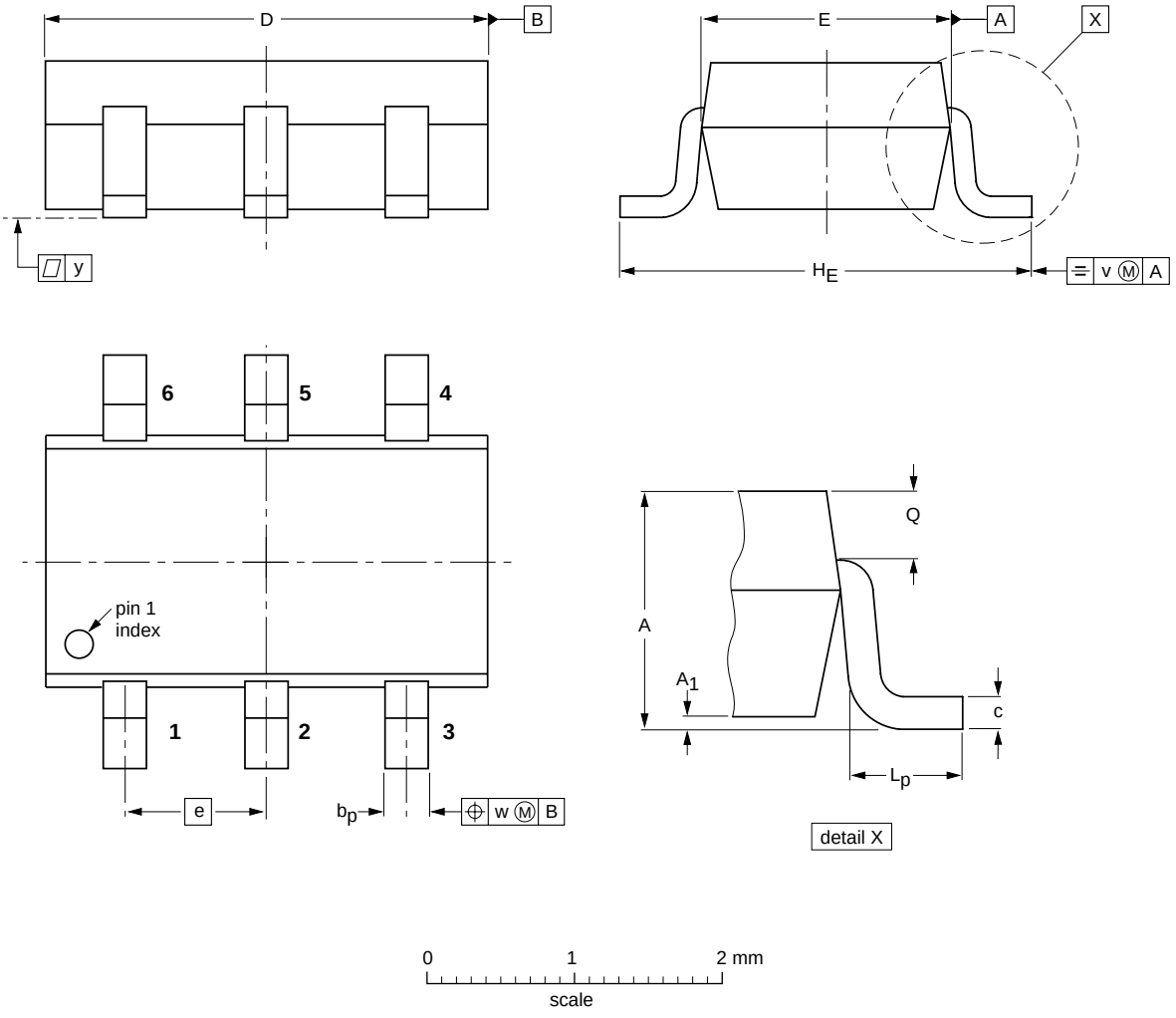
SYMBOL	PARAMETER	CONDITIONS	MIN.	MIN.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	V_{CB} = –20 V; I_E = 0	–	–	–100	nA
		V_{CB} = –20 V; I_E = 0; T_j = 150 °C	–	–	–50	μA
I_{EBO}	emitter-base cut-off current	V_{EB} = –5 V; I_C = 0	–	–	–100	nA
h_{FE}	DC current gain	V_{CE} = –2 V; I_C = –100 mA	200	–	–	
		V_{CE} = –2 V; I_C = –500 mA	200	–	–	
		V_{CE} = –2 V; I_C = –1000 mA; note 1	200	–	–	
		V_{CE} = –2 V; I_C = –2000 mA; note 1	150	–	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –500 mA; I_B = –5 mA	–	–	–130	mV
		I_C = –500 mA; I_B = –50 mA	–	–	–80	mV
		I_C = –1 A; I_B = –50 mA	–	–	–160	mV
		I_C = –2 A; I_B = –20 mA; note 1	–	–	–400	mV
		I_C = –2 A; I_B = –200 mA; note 1	–	–	–250	mV
		I_C = –3 A; I_B = –300 mA; note 1	–	–	–400	mV
R_{CEsat}	equivalent on-resistance	I_C = –3 A; I_B = –300 mA; note 1	–	85	133	mΩ
V_{BEsat}	base-emitter saturation voltage	I_C = –2 A; I_B = –200 mA; note 1	–	–	–1.2	V
V_{BEon}	base-emitter turn-on voltage	V_{CE} = –2 V; I_C = –1 A; note 1	–1.2	–	–	V
C_c	collector capacitance	V_{CB} = –10 V; I_E = I_e = 0; f = 1 MHz	–	–	50	pF
F_T	transition frequency	I_C = –200 mA; V_{CE} = –10 V; f = 100 MHz	100	–	–	MHz

Note

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

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads **SOT457**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1	b_p	c	D	E	e	H_E	L_p	Q	v	w	y
mm	1.1 0.9	0.1 0.013	0.40 0.25	0.26 0.10	3.1 2.7	1.7 1.3	0.95	3.0 2.5	0.6 0.2	0.33 0.23	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT457			SC-74			~~97-02-28~~ 01-05-04

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.
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Printed in The Netherlands 613514/01/pp8 Date of release: 2002 Jun 12 Document order number: 9397 750 09759

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