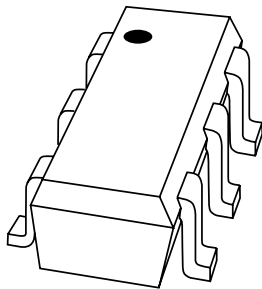


# DATA SHEET



**PBSS5320D**

20 V low  $V_{CEsat}$  PNP transistor

Product specification

2002 Jun 12

# 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

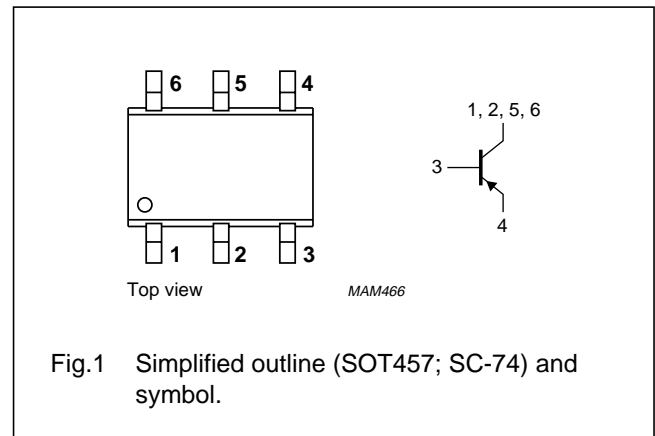
TYPE NUMBER	MARKING CODE
PBSS5320D	52

### 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	m $\Omega$

### PINNING

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



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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	–	–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	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	600	mW
		$T_{amb} \leq 25\text{ °C}$ ; 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<sup>2</sup>.
2. Device mounted on a printed-circuit board, single side copper, tinplated, mounting pad for collector 6 cm<sup>2</sup>.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	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<sup>2</sup>.
2. Device mounted on a printed-circuit board, single side copper, tinplated, mounting pad for collector 6 cm<sup>2</sup>.

20 V low  $V_{CEsat}$  PNP transistor

## PBSS5320D

**CHARACTERISTICS**

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

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

**Note**

1. Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .

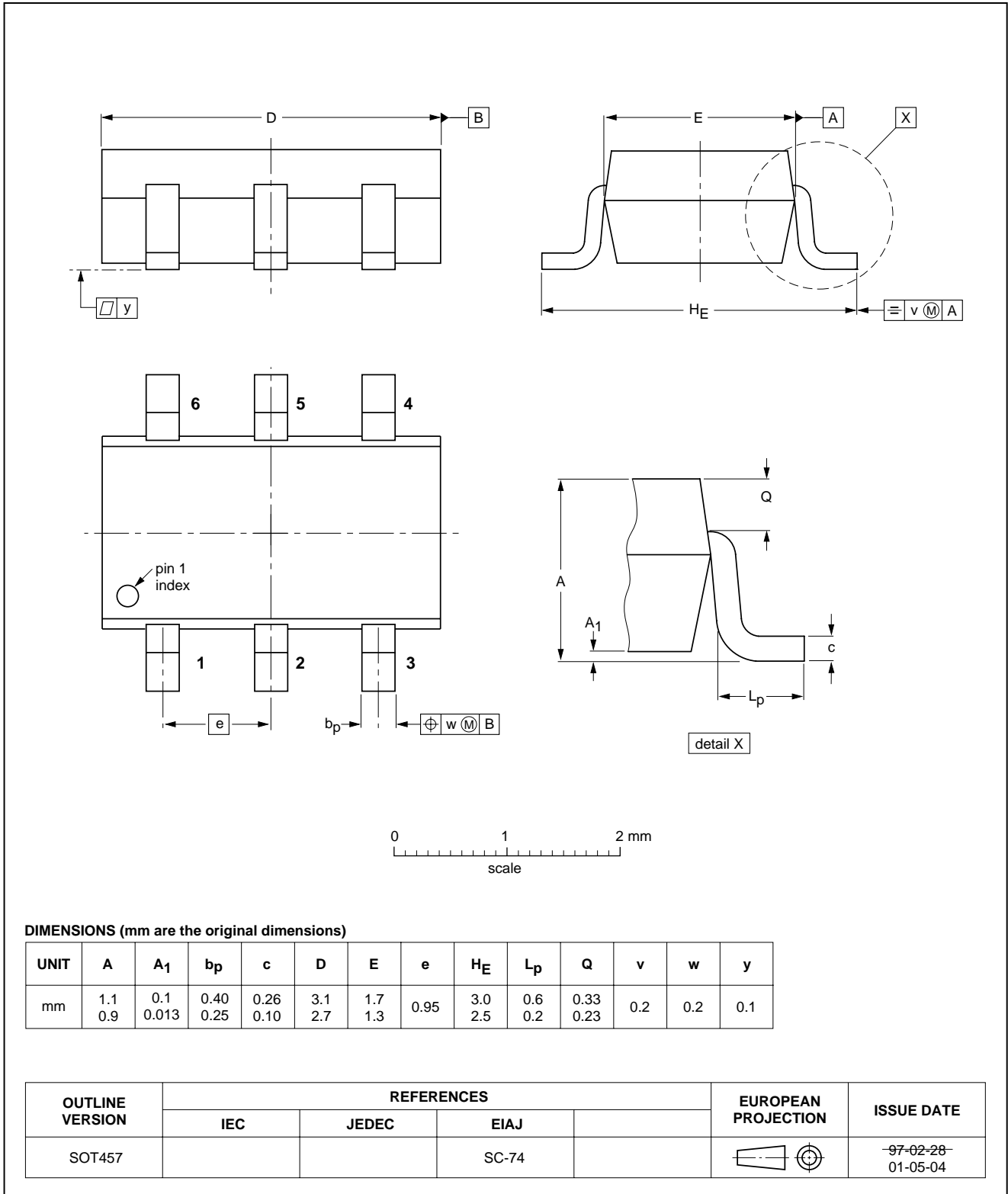
20 V low  $V_{CEsat}$  PNP transistor

PBSS5320D

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT457



20 V low  $V_{CEsat}$  PNP transistor

PBSS5320D

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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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**NOTES**

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