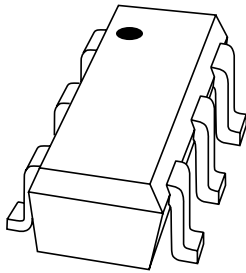


DATA SHEET



PBSS5320D

20 V low V_{CEsat} PNP transistor

Product data sheet

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

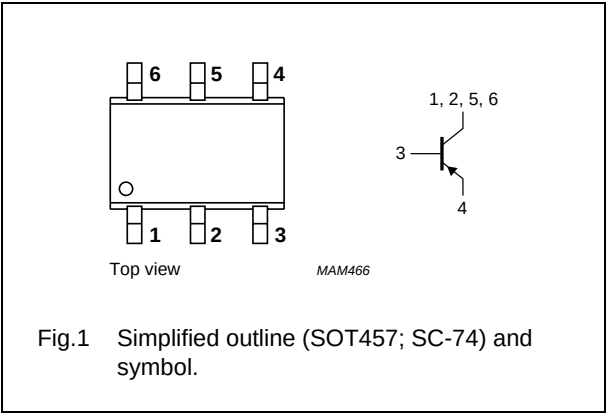
TYPE NUMBER	MARKING CODE
PBSS5320D	52

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 Ω

PINNING

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



20 V low V_{CEsat} PNP transistor

PBSS5320D

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 cm².
2. Device mounted on a printed-circuit board, single side copper, tinplated, mounting pad for collector 6 cm².

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 cm².
2. Device mounted on a printed-circuit board, single side copper, tinplated, mounting pad for collector 6 cm².

20 V low V_{CEsat} PNP transistor

PBSS5320D

CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$ 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
		$V_{CB} = -20\text{ V}; I_E = 0; T_J = 150\text{ }^{\circ}\text{C}$	—	—	–50	μA
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: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$.

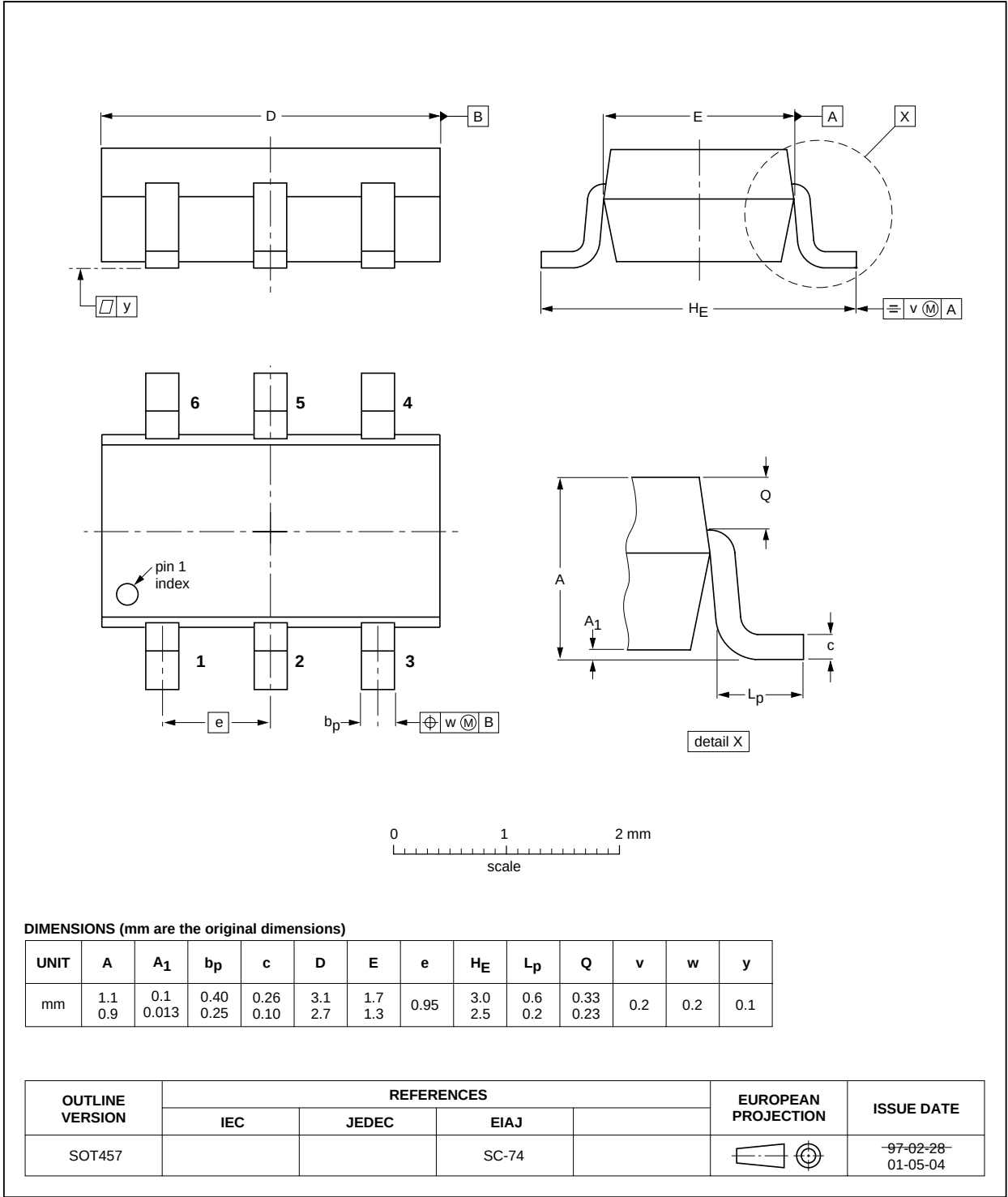
20 V low V_{CEsat} PNP transistor

PBSS5320D

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT457



20 V low V_{CEsat} PNP transistor

PBSS5320D

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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