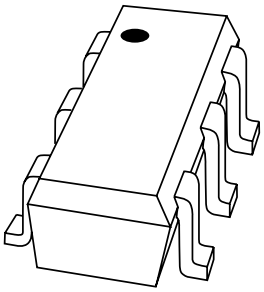
DATA SHEET



PBSS5240Y
40 V low V_{CEsat} PNP transistor

Product specification
Supersedes data of 2001 Oct 24

2002 Feb 28

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40 V low V_{CEsat} PNP transistor PBSS5240Y

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation
- Replacement for SOT89/SOT223 standard packaged transistors due to enhanced performance.

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 SOT363 (SC-88) plastic package.
NPN complement: PBSS4240Y.

MARKING

TYPE NUMBER	MARKING CODE(1)
PBSS5240Y	52*

Note

1. * = p: made in Hongkong.
   * = t: made in Malaysia.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{CEO}	collector-emitter voltage	–40	V
I_{CM}	peak collector current	–3	A
I_C	collector current (DC)	–2	A
R_{CEsat}	equivalent on-resistance	<200	mΩ

PINNING

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

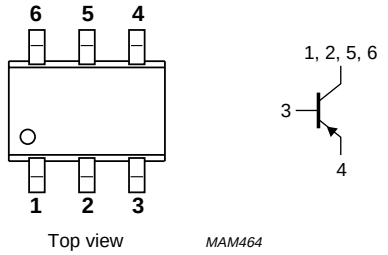


Fig.1 Simplified outline (SOT363; SC-88) and symbol.

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	–	–5	V
I_C	collector current (DC)		–	–2	A
I_{CM}	peak collector current		–	–3	A
I_{BM}	peak base current		–	–300	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	270	mW
		$T_{amb} \leq 25$ °C; note 2	–	430	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 and standard footprint.
2. Device mounted on a printed-circuit board, single side copper, tinplated and mounting pad for collector 1 cm^2.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	463	K/W
		note 2	291	K/W

Notes

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

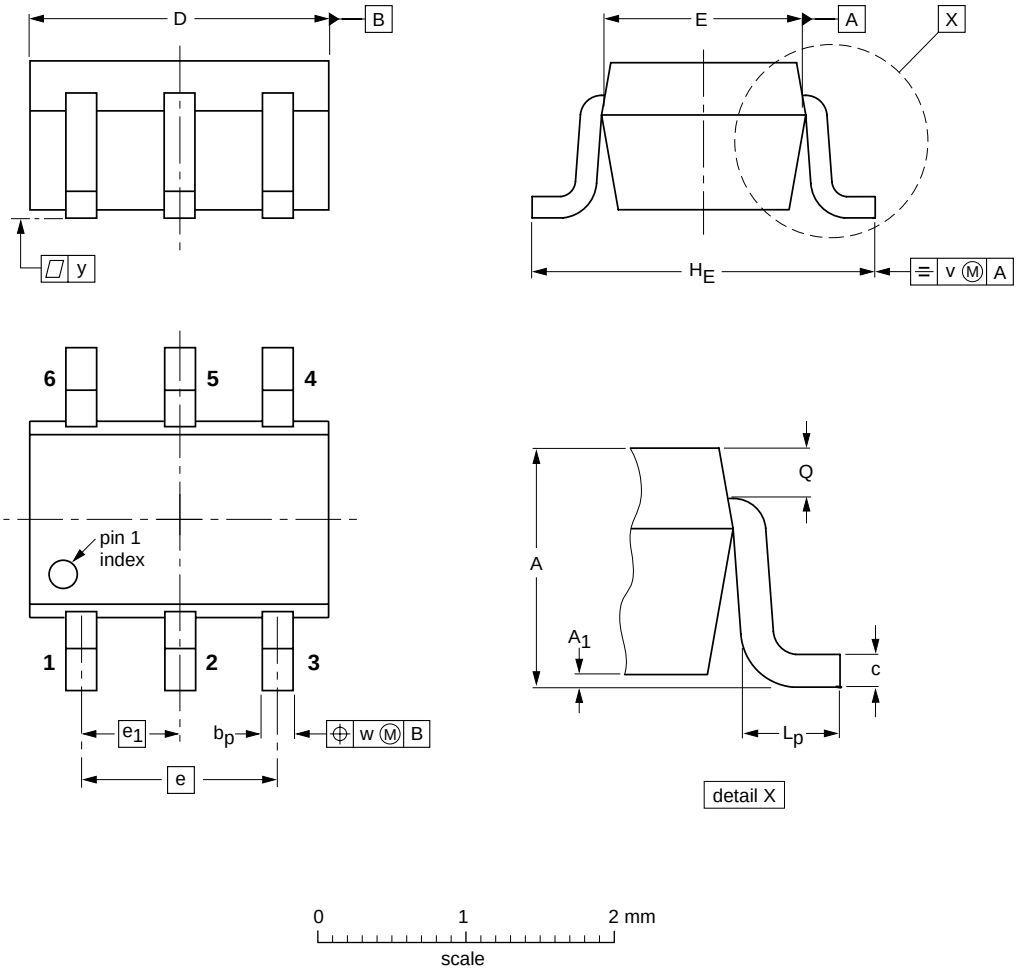
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	V_{CB} = –30 V; I_E = 0	–	–100	nA
		V_{CB} = –30 V; I_E = 0; T_j = 150 °C	–	–50	μA
I_{EBO}	emitter-base cut-off current	V_{EB} = –4 V; I_C = 0	–	–100	nA
h_{FE}	DC current gain	V_{CE} = –2 V; I_C = –100 mA	300	–	
		V_{CE} = –2 V; I_C = –500 mA	260	–	
		V_{CE} = –2 V; I_C = –1000 mA	210	–	
		V_{CE} = –2 V; I_C = –2000 mA	100	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –100 mA; I_B = –1 mA	–	–100	mV
		I_C = –500 mA; I_B = –50 mA	–	–110	mV
		I_C = –750 mA; I_B = –15 mA	–	–225	mV
		I_C = –1000 mA; I_B = –50 mA	–	–225	mV
		I_C = –2000 mA; I_B = –200 mA	–	–350	mV
V_{BEsat}	base-emitter saturation voltage	I_C = –2000 mA; I_B = –200 mA	–	–1.1	V
V_{BEon}	base-emitter turn-on voltage	V_{CE} = –2 V; I_C = –100 mA	–	–0.75	V
C_c	collector capacitance	V_{CB} = –10 V; I_E = I_e = 0; f = 1 MHz	–	40	pF
F_T	transition frequency	I_C = –100 mA; V_{CE} = –10 V; f = 100 MHz	100	–	MHz

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads **SOT363**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT363			SC-88			97-02-28

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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Notes

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