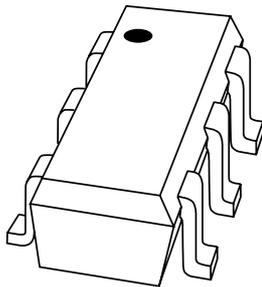


DATA SHEET



PBSS5240Y

40 V low V_{CEsat} PNP transistor

Product specification
Supersedes data of 2001 Oct 24

2002 Feb 28

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

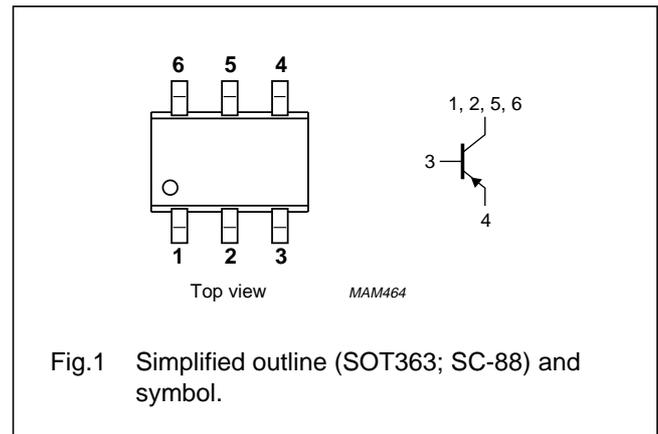
- * = p: made in Hongkong.
 * = t: made in Malaysia.

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	m Ω

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	–	–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	$T_{amb} \leq 25\text{ °C}$; note 1	–	270	mW
		$T_{amb} \leq 25\text{ °C}$; 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 cm².

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	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 cm².

40 V low V_{CEsat} PNP transistor

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

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

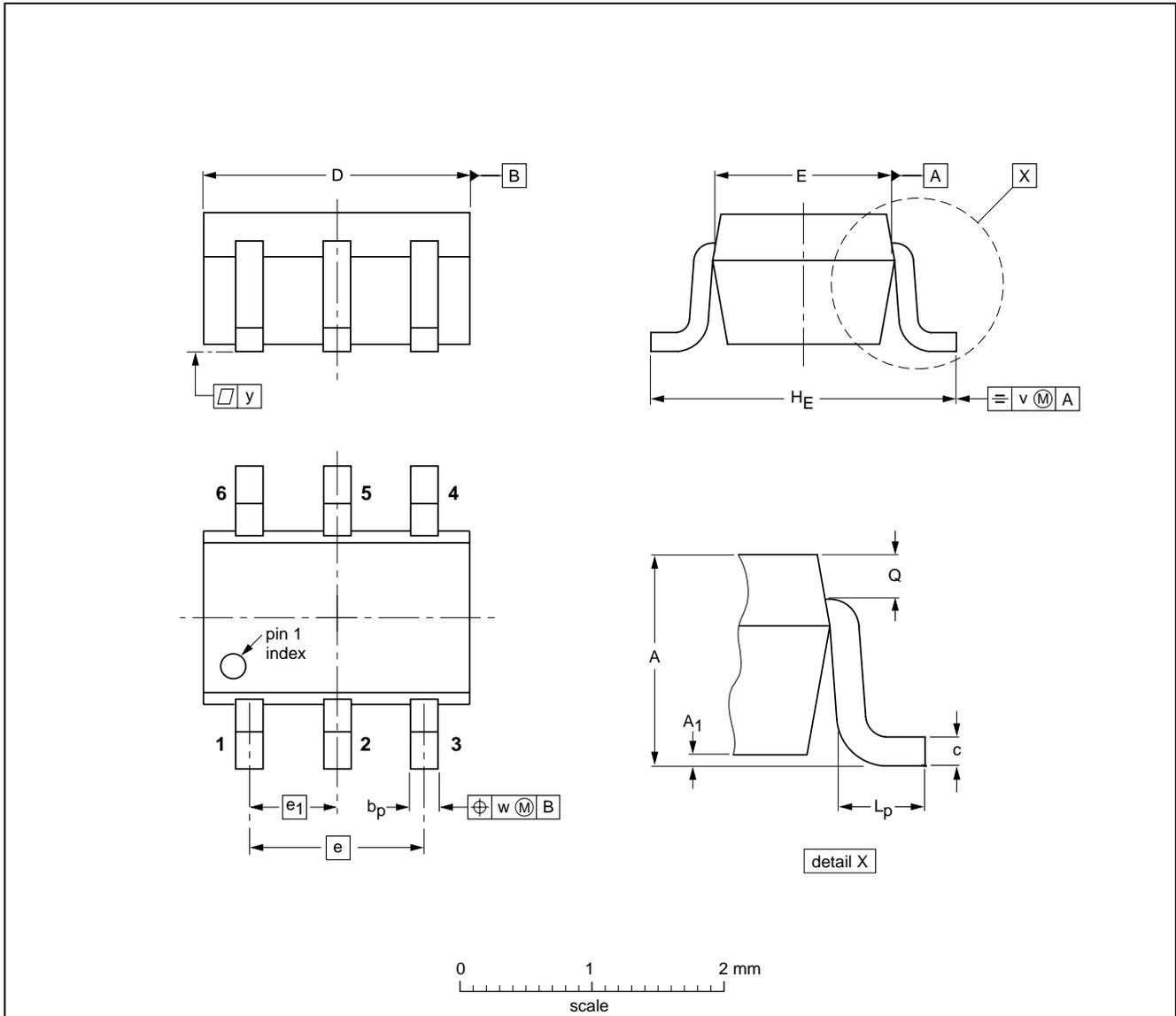
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PACKAGE OUTLINE

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

40 V low V_{CEsat} PNP transistor

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DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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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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NOTES

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