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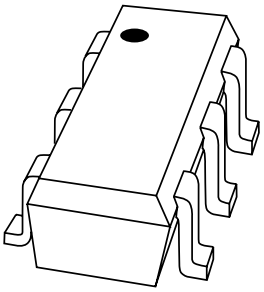
Team Nexperia

DATA SHEET



PBSS5240Y

40 V low V_{CEsat} PNP transistor

Product data sheet
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

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

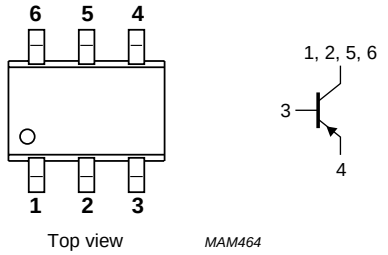


Fig.1 Simplified outline (SOT363; SC-88) and symbol.

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.

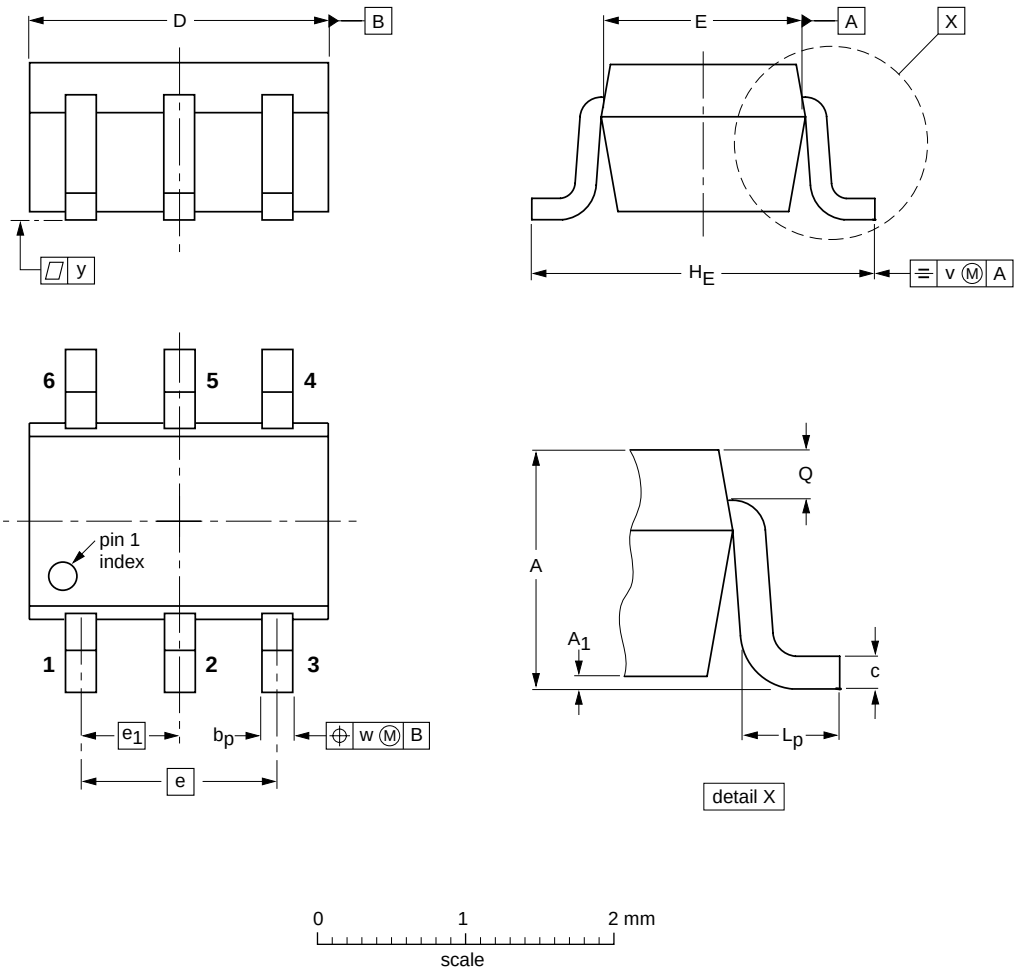
CHARACTERISTICS

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

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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NXP Semiconductors

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For sales offices addresses send e-mail to: **salesaddresses@nxp.com**

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>>Nexperia(安世)