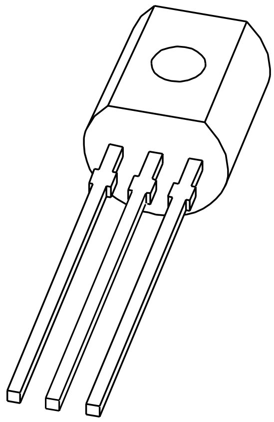
DISCRETE SEMICONDUCTORS

DATA SHEET



PSS9015B
PNP general purpose transistor

Product specification

2002 Sep 20

Philips Semiconductors

PHILIPS

PNP general purpose transistor PSS9015B

FEATURES

- Low collector capacitance.

APPLICATIONS

- General purpose switching and amplification
- Low frequency, low noise amplifier.

DESCRIPTION

PNP transistor in a SOT54 plastic package.
NPN complement: PSS9014.

MARKING

TYPE NUMBER	MARKING CODE
PSS9015B	S9015B

PINNING

PIN	DESCRIPTION
1	collector
2	base
3	emitter

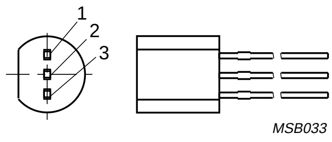


Fig.1 Simplified outline (SOT54).

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	–	–50	V
V_{CEO}	collector-emitter voltage	open base	–	–45	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–200	mA
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	up to T_{amb} = 25 °C; note 1	–	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	in free air; note 1	240	K/W

Note

1. Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.

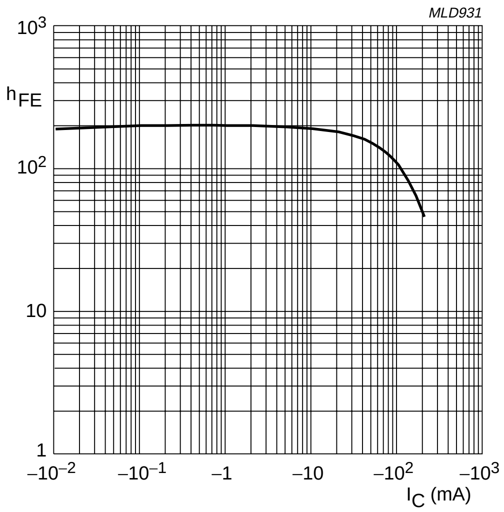
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	V_{CB} = –30 V; I_E = 0	–	–	–50	nA
		V_{CB} = –30 V; I_E = 0; T_{amb} = 150 °C	–	–	–5	μA
I_{CEO}	collector-emitter cut-off current	V_{CE} = –30 V; I_B = 0	–	–	–100	nA
I_{EBO}	emitter-base cut-off current	V_{EB} = –5 V; I_C = 0	–	–	–100	nA
h_{FE}	DC current gain	I_C = –1 mA; V_{CE} = –5 V	100	200	300	
V_{CEsat}	saturation voltage	I_C = –100 mA; I_B = –5 mA; note 1	–	–	–700	mV
V_{BEsat}	saturation voltage	I_C = –100 mA; I_B = –5 mA; note 1	–	–	–1000	mV
V_{BEon}	base-emitter turn-on voltage	I_C = –2 mA; V_{CE} = –5 V	–600	–	–750	mV
f_T	transition frequency	I_C = –10 mA; V_{CE} = –10 V; f = 100 MHz	100	–	–	MHz
C_c	collector capacitance	V_{CB} = –10 V; I_E = I_e = 0; f = 1 MHz	–	–	7	pF
F	noise figure	V_{CE} = –5 V; I_C = –0.2 mA; R_S = 1 kΩ; f = 1 kHz; B = 200 Hz	–	–	10	dB

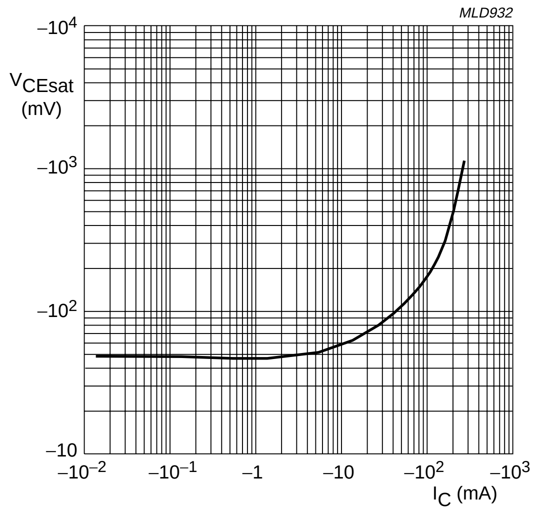
Note

1. Pulse test: $t_p \leq 300$ μs; $\delta \leq 0.02$.



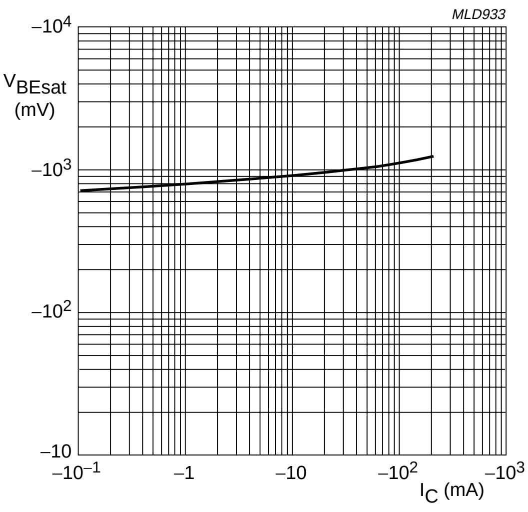
$V_{CE} = -5$ V.

Fig.2 DC current gain as a function of collector current; typical values.



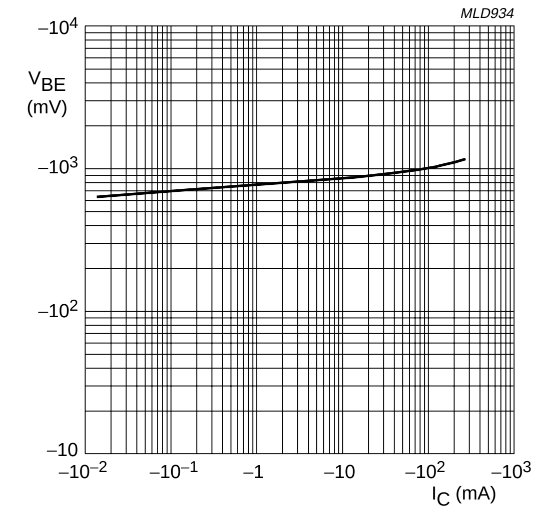
$I_C/I_B = 20$.

Fig.3 Collector-emitter saturation voltage as a function of collector current; typical values.



$I_C/I_B = 20$.

Fig.4 Base-emitter saturation voltage as a function of collector current; typical values.

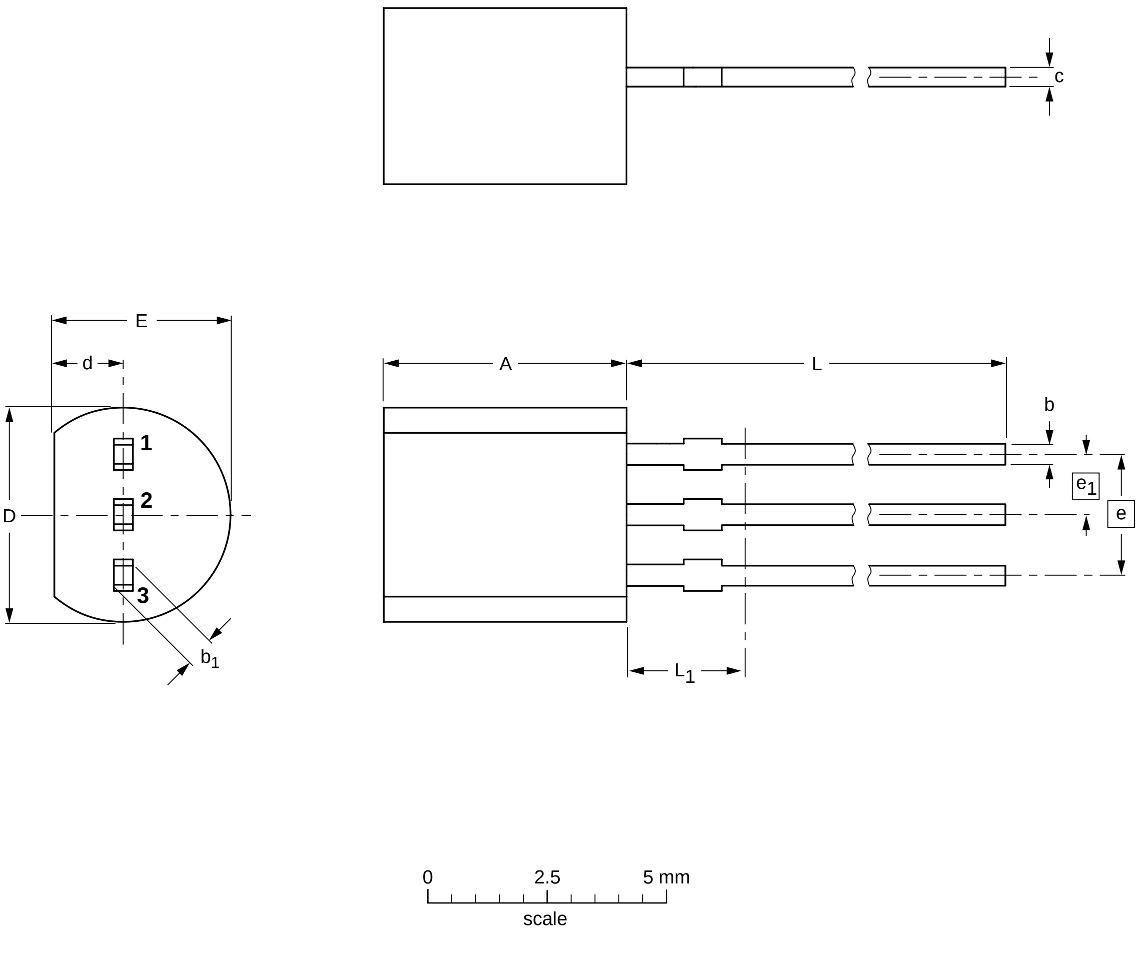


$V_{CE} = -5$ V.

Fig.5 Base-emitter voltage as a function of collector current; typical values.

PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; 3 leads **SOT54**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b_1	c	D	d	E	e	e_1	L	$L_1^{(1)}$
mm	5.2 5.0	0.48 0.40	0.66 0.56	0.45 0.40	4.8 4.4	1.7 1.4	4.2 3.6	2.54	1.27	14.5 12.7	2.5

Note

1. Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT54		TO-92	SC-43			97-02-28

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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