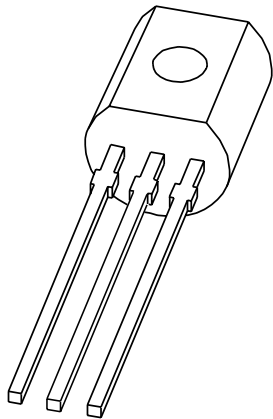


# DATA SHEET



**PSS8050**

**NPN medium power 25 V transistor**

Product specification

2002 Nov 18

# NPN medium power 25 V transistor

# PSS8050

## FEATURES

- High total power dissipation
- High current capability.

## APPLICATIONS

- Medium power switching and muting
- Amplification
- Portable radio output amplifier (class-B, push-pull).

## DESCRIPTION

NPN transistor in a SOT54 (TO-92) plastic package.  
PNP complement: PSS8550.

## MARKING

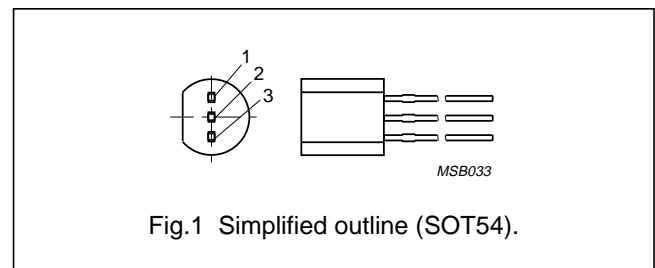
TYPE NUMBER	MARKING CODE
PSS8050C	S8050C
PSS8050D	S8050D

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
$V_{CEO}$	collector-emitter voltage	25	V
$I_C$	collector current (DC)	1.5	A

## PINNING

PIN	DESCRIPTION
1	collector
2	base
3	emitter



## 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	–	25	V
$V_{EBO}$	emitter-base voltage	open collector	–	6	V
$I_C$	collector current (DC)		–	1.5	A
$I_{CM}$	peak collector current		–	2	A
$I_B$	base current (DC)		–	300	mA
$I_{BM}$	peak base current		–	1	A
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 1	–	850	mW
		$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 2	–	900	mW
		$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 3	–	1	W
$T_{stg}$	storage temperature		–65	+150	$^\circ\text{C}$
$T_j$	junction temperature		–	150	$^\circ\text{C}$
$T_{amb}$	operating ambient temperature		–65	+150	$^\circ\text{C}$

## Notes

1. Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.
2. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm<sup>2</sup>.
3. Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint. Operated under pulsed conditions: pulse width  $t_p \leq 1\text{ s}$ ; duty cycle  $\delta \leq 0.75\%$ .

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## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air; note 1	147	K/W
		in free air; note 2	139	K/W
		in free air; note 3	125	K/W

## Notes

- Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.
- Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm<sup>2</sup>.
- Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.  
Operated under pulsed conditions: pulse width  $t_p \leq 1$  s; duty cycle  $\delta \leq 0.75\%$ .

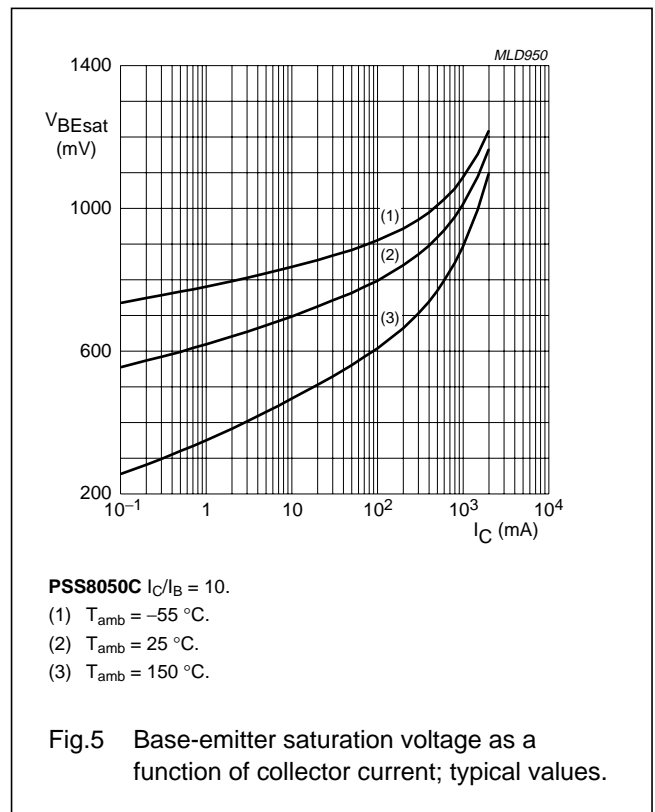
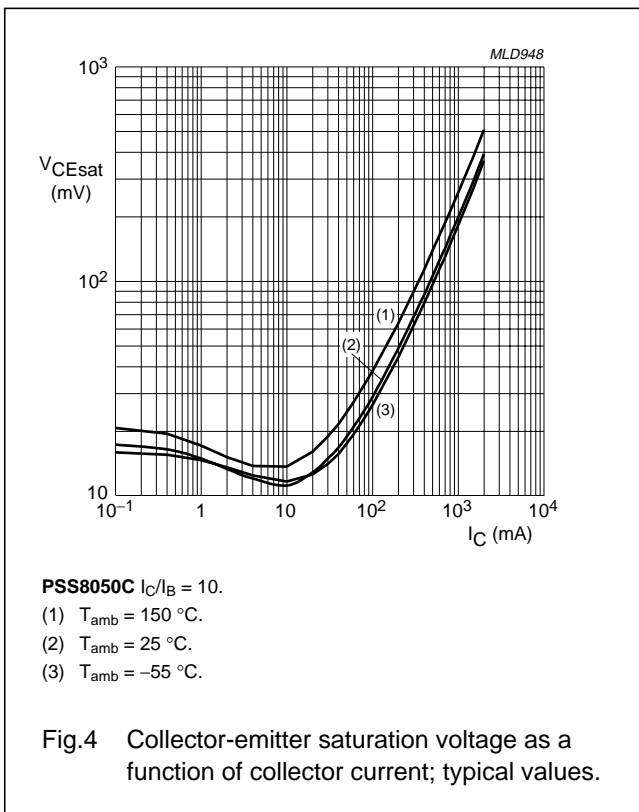
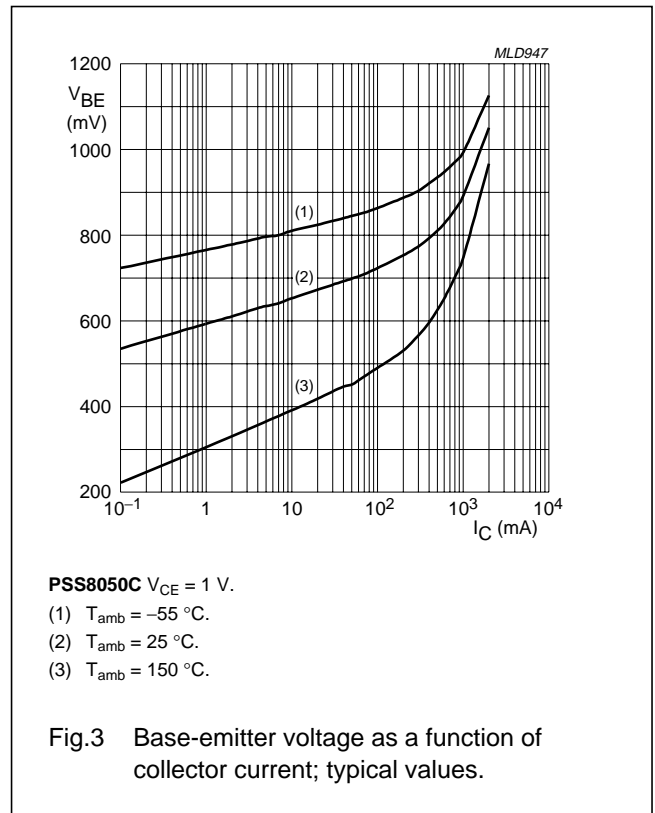
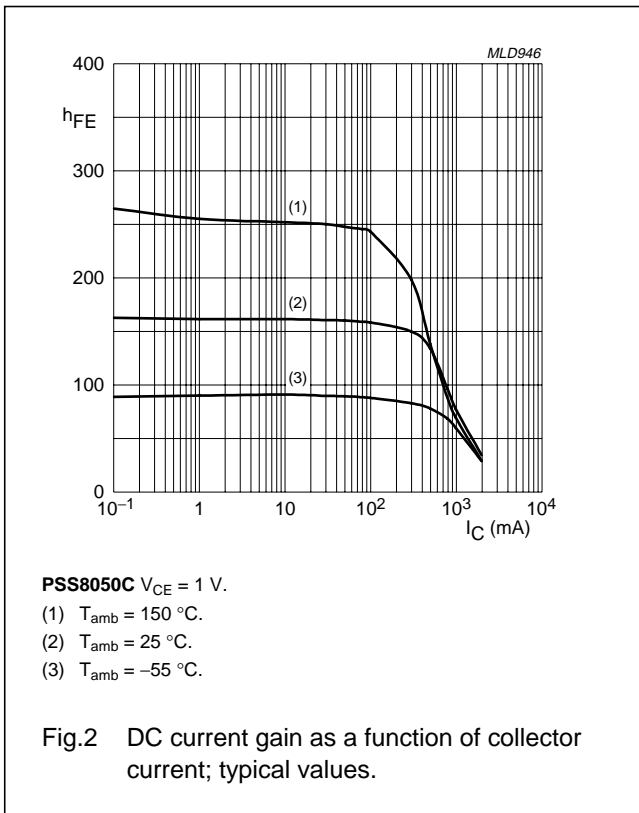
## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$V_{CB} = 35$ V; $I_E = 0$	–	–	100	nA
		$V_{CB} = 35$ V; $I_E = 0$ ; $T_{amb} = 150$ °C	–	–	50	µA
$I_{CEO}$	collector-emitter cut-off current	$V_{CE} = 25$ V; $I_B = 0$	–	–	100	nA
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = 6$ V; $I_C = 0$	–	–	100	nA
$h_{FE}$	DC current gain	$I_C = 5$ mA; $V_{CE} = 1$ V	45	–	–	
		$I_C = 800$ mA; $V_{CE} = 1$ V	40	–	–	
	DC current gain PSS8050C PSS8050D	$I_C = 100$ mA; $V_{CE} = 1$ V	120 160	– –	200 300	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 800$ mA; $I_B = 80$ mA	–	165	500	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 800$ mA; $I_B = 80$ mA	–	–	1.2	V
$V_{BEon}$	base-emitter turn-on voltage	$I_C = 10$ mA; $V_{CE} = 1$ V	–	–	1	V
$f_T$	transition frequency	$I_C = 50$ 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	–	–	10	pF

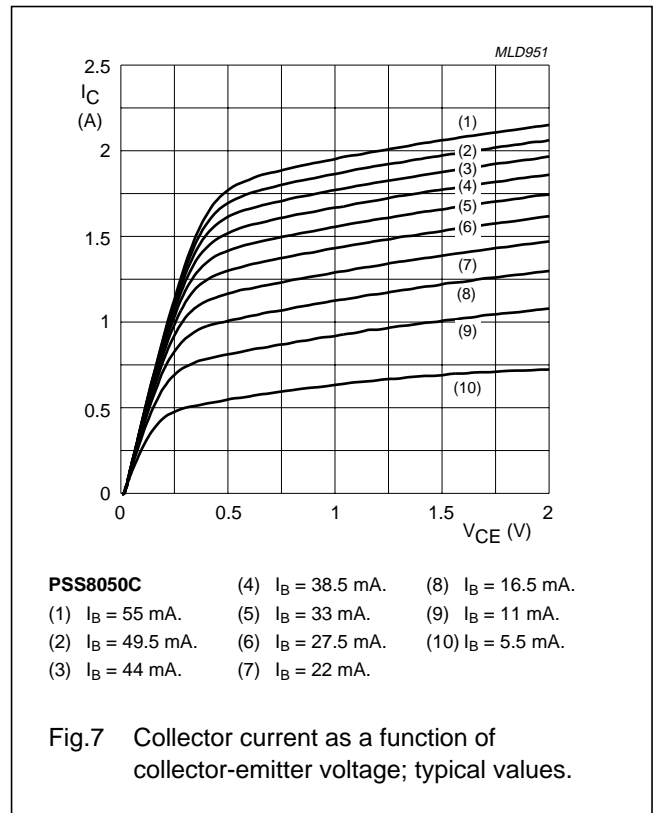
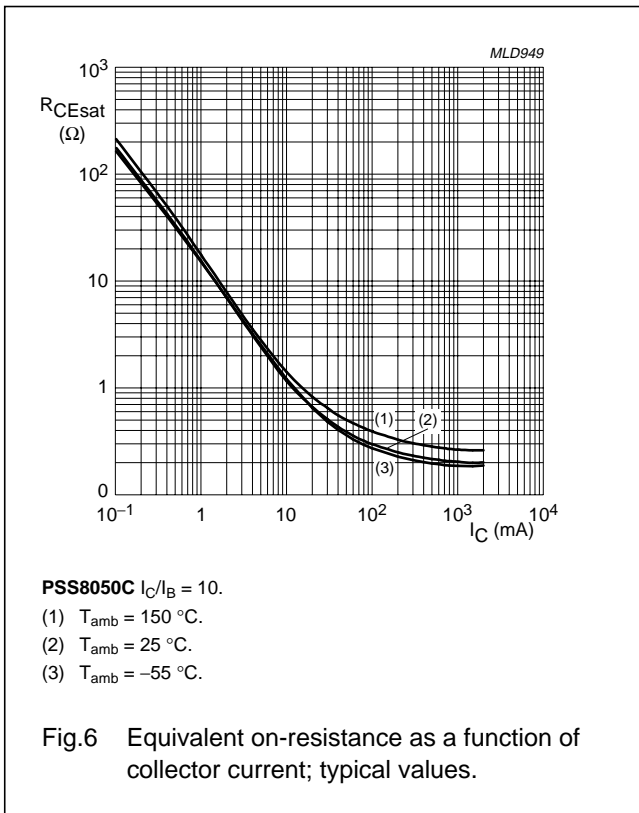
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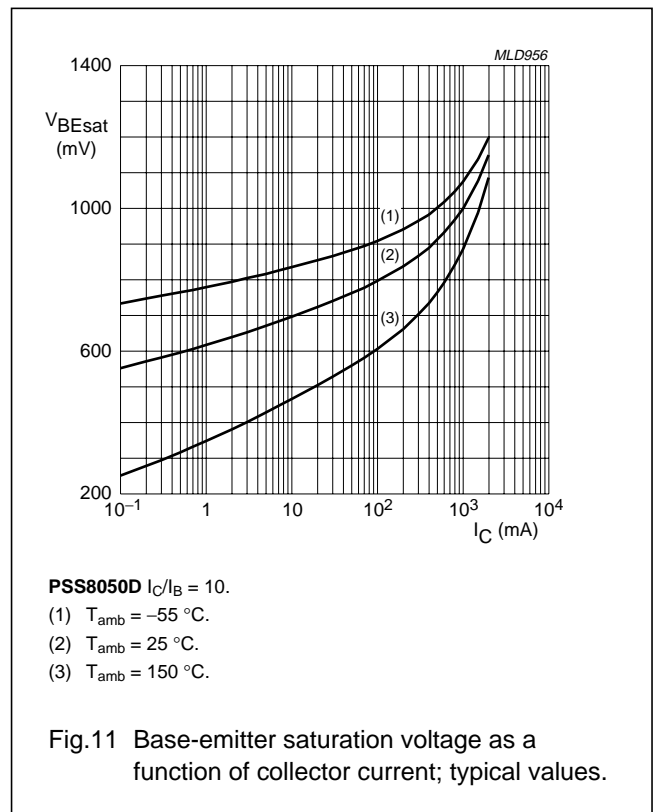
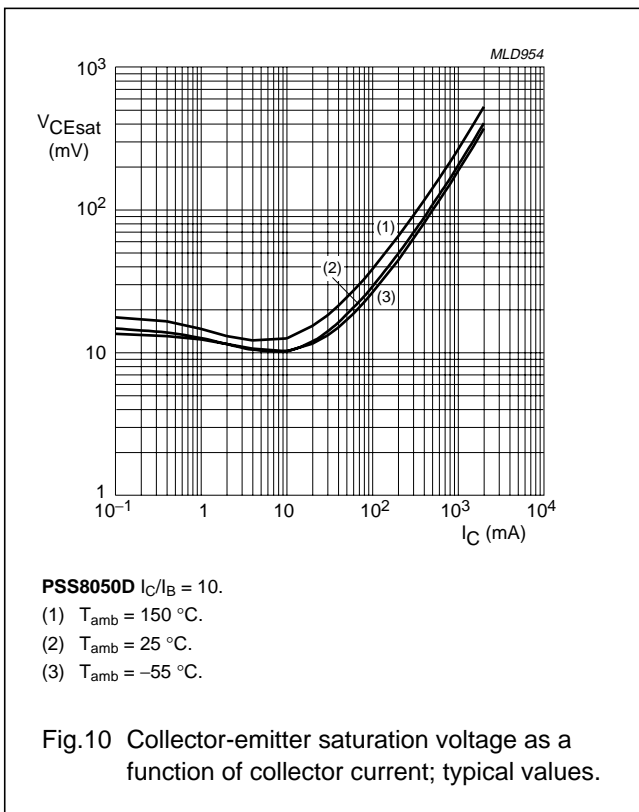
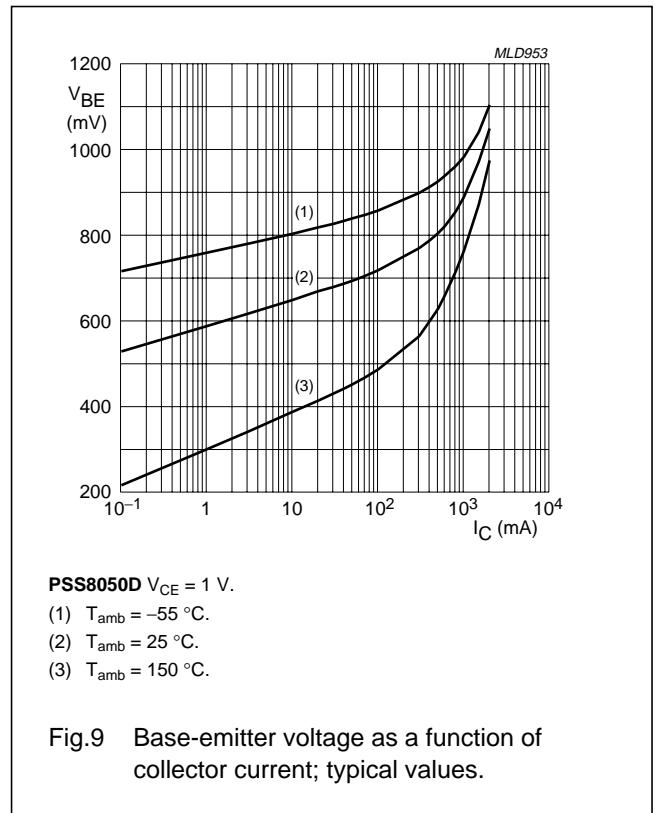
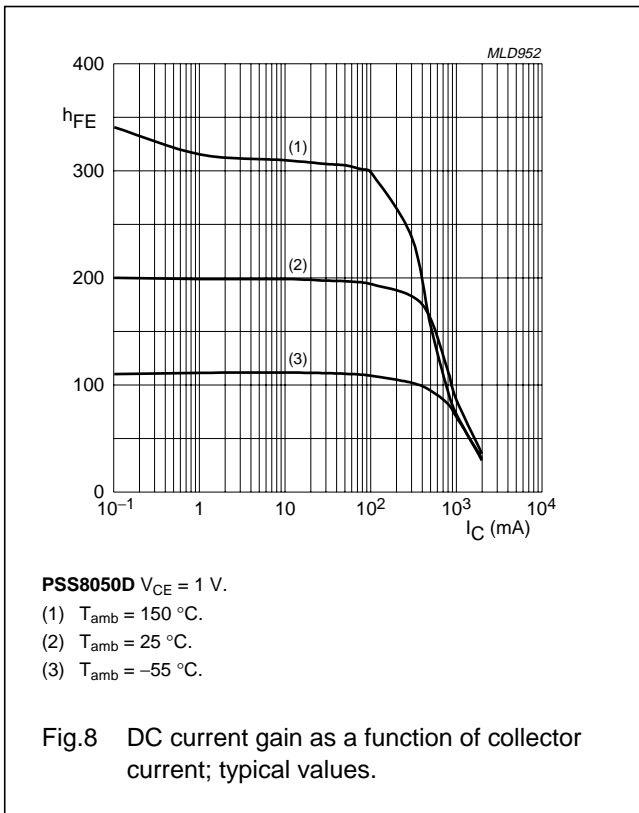
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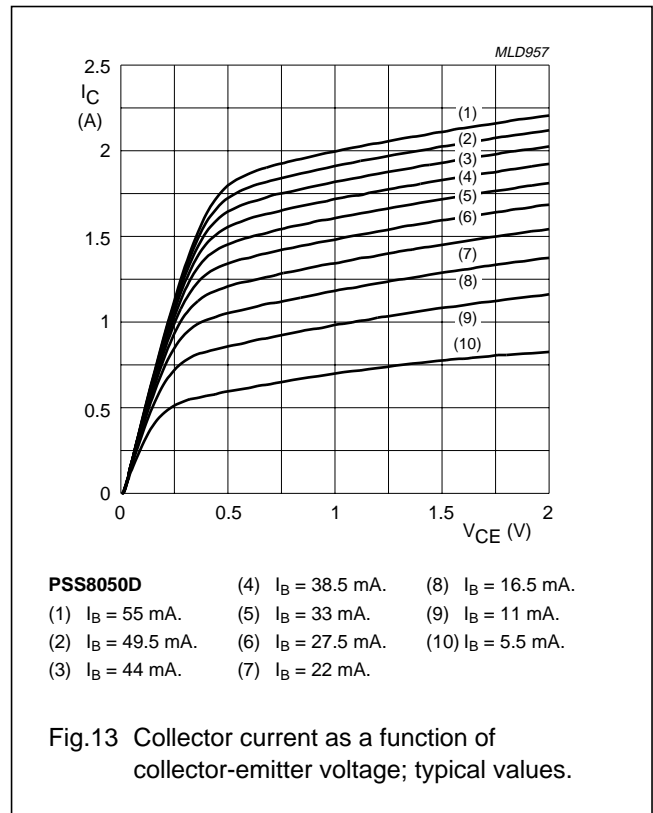
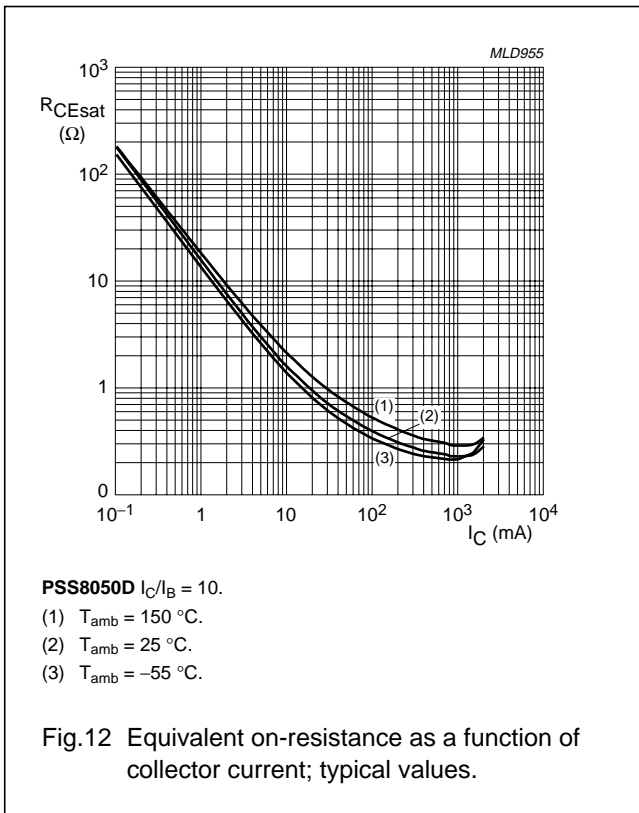
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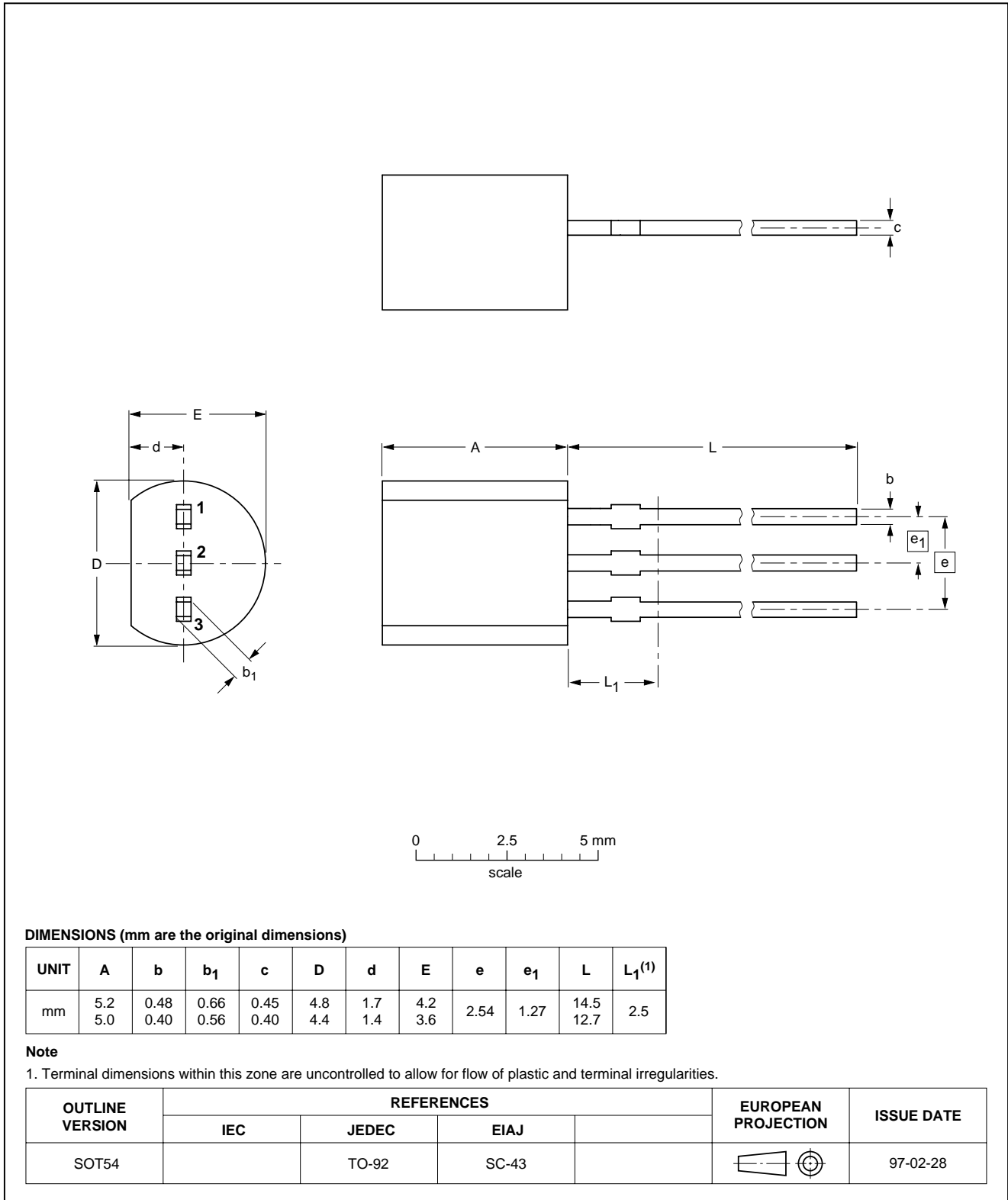
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PACKAGE OUTLINE

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

SOT54





## NPN medium power 25 V transistor

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	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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**NOTES**

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Printed in The Netherlands

613514/01/pp12

Date of release: 2002 Nov 18

Document order number: 9397 750 10625

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