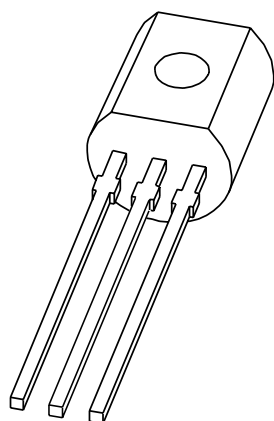


DATA SHEET



PSS8550

PNP medium power 25 V transistor

Product specification

2002 Nov 19

PNP medium power 25 V transistor

PSS8550

FEATURES

- High total power dissipation
- High current capability.

APPLICATIONS

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

DESCRIPTION

PNP transistor in a SOT54 (TO-92) plastic package.
NPN complement: PSS8050.

MARKING

TYPE NUMBER	MARKING CODE
PSS8550C	S8550C
PSS8550D	S8550D

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

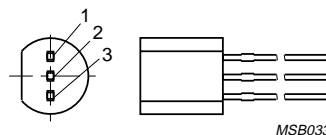


Fig.1 Simplified outline (SOT54).

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	−	−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	$T_{amb} \leq 25\text{ °C}$; note 1	−	850	mW
		$T_{amb} \leq 25\text{ °C}$; note 2	−	900	mW
		$T_{amb} \leq 25\text{ °C}$; note 3	−	1	W
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 sided copper; tinplated; standard footprint.
2. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm².
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

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 cm².
3. 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 $\delta \leq 0.75\%$.

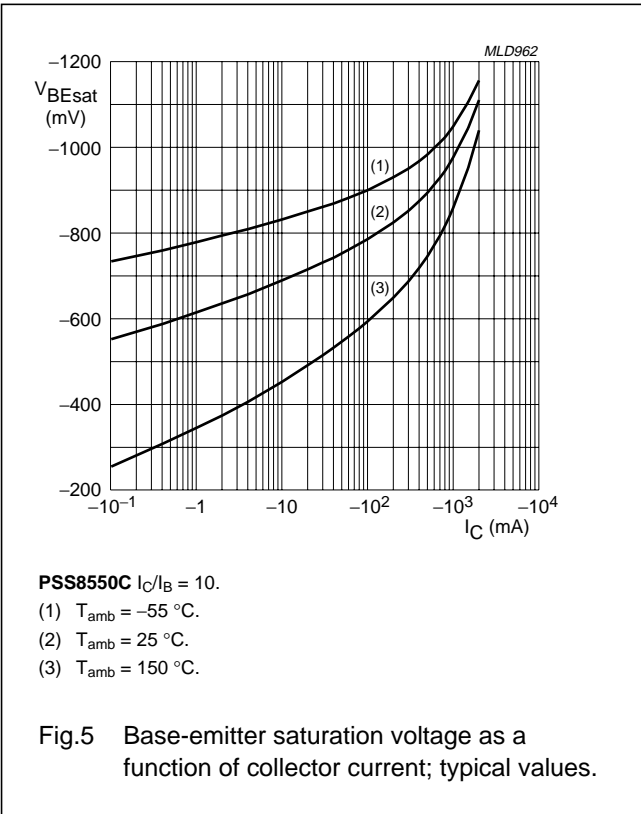
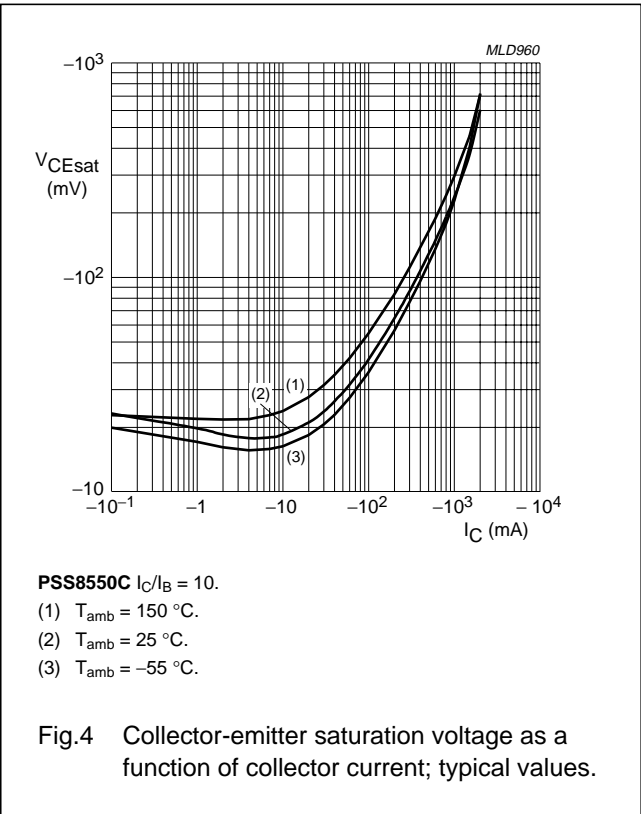
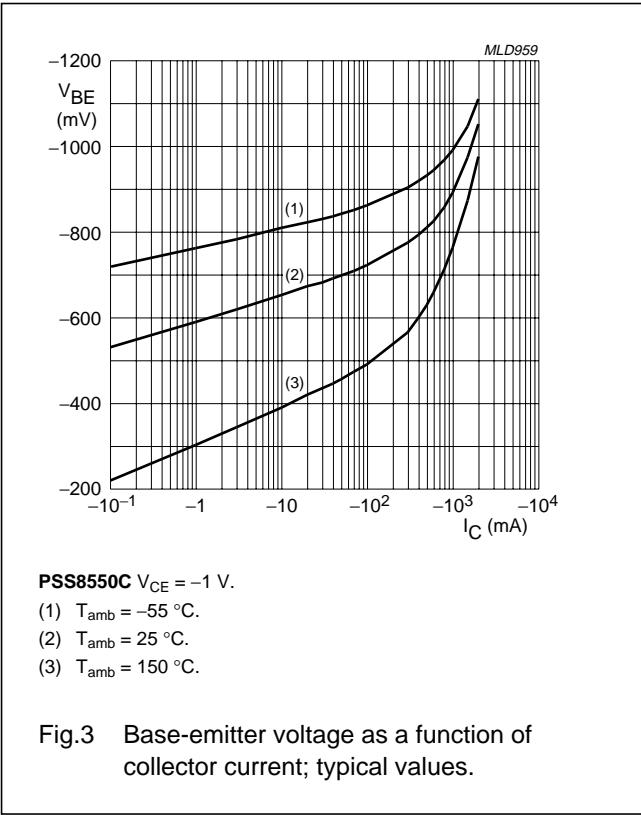
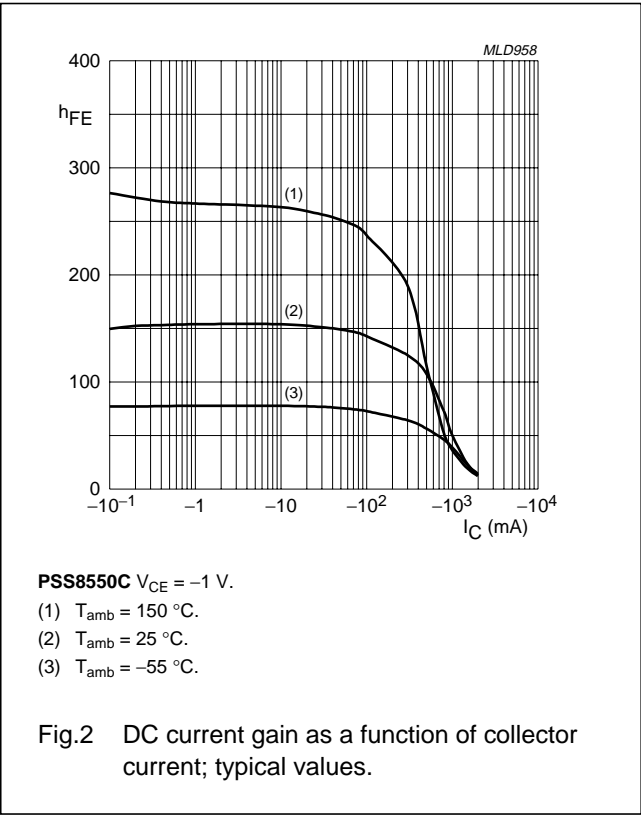
CHARACTERISTICS

$T_{amb} = 25$ °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 PSS8550C PSS8550D	$I_C = -100$ mA; $V_{CE} = -1$ V	120	–	200	
			160	–	300	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -800$ mA; $I_B = -80$ mA	–	–190	–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; $I_E = I_C = 0$; $f = 1$ MHz	–	–	12	pF

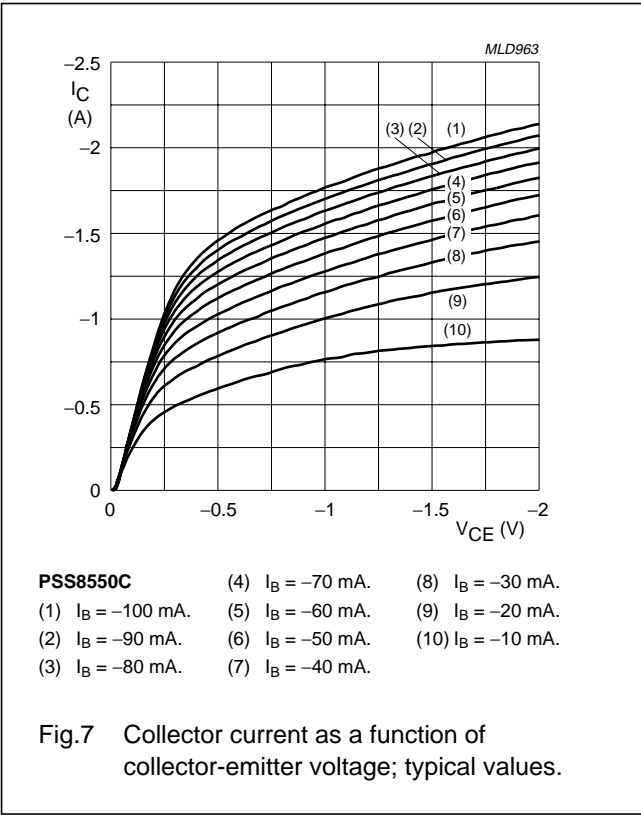
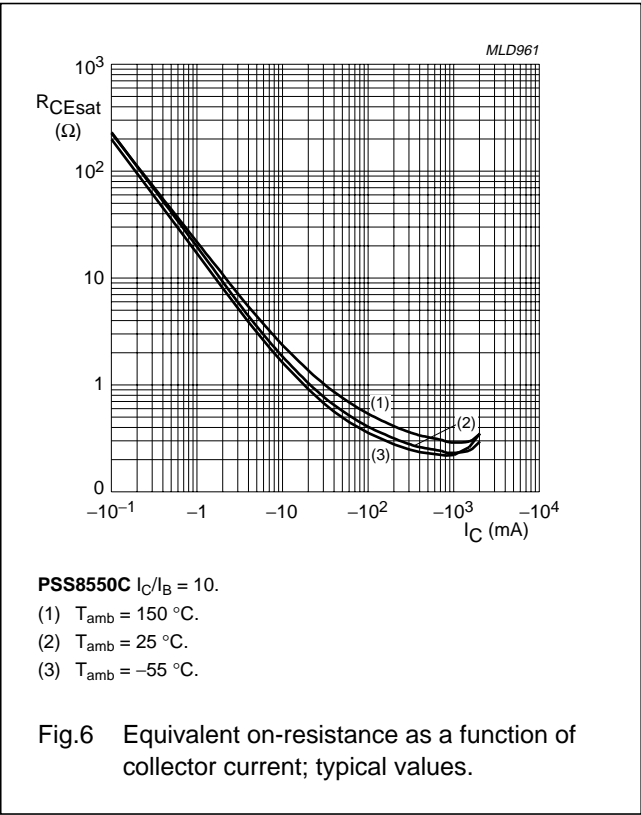
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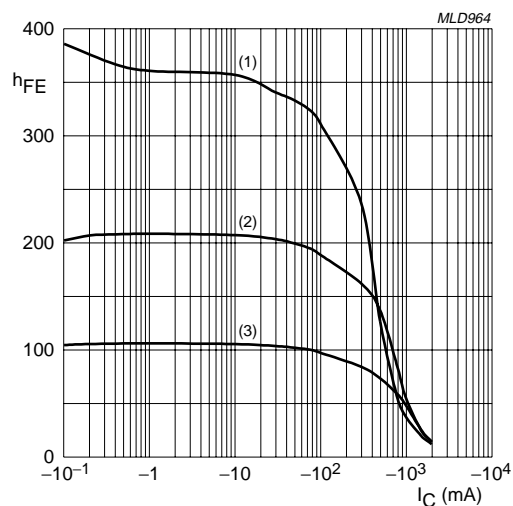
PNP medium power 25 V transistor

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PNP medium power 25 V transistor

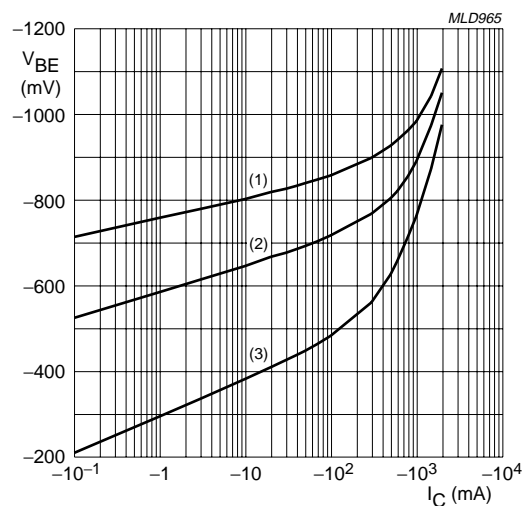
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PSS8550D $V_{CE} = -1$ V.

- (1) $T_{amb} = 150$ °C.
- (2) $T_{amb} = 25$ °C.
- (3) $T_{amb} = -55$ °C.

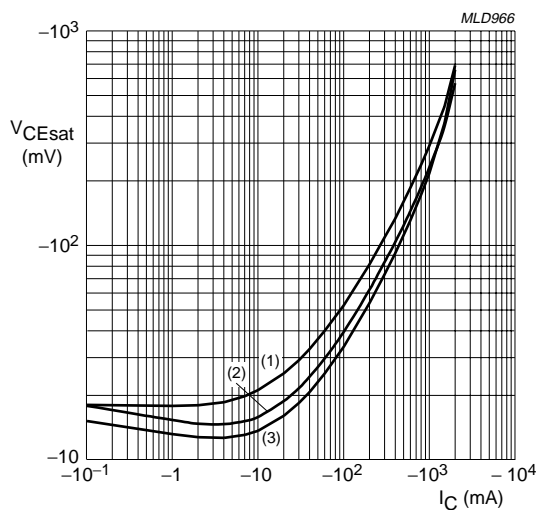
Fig.8 DC current gain as a function of collector current; typical values.



PSS8550D $V_{CE} = -1$ V.

- (1) $T_{amb} = -55$ °C.
- (2) $T_{amb} = 25$ °C.
- (3) $T_{amb} = 150$ °C.

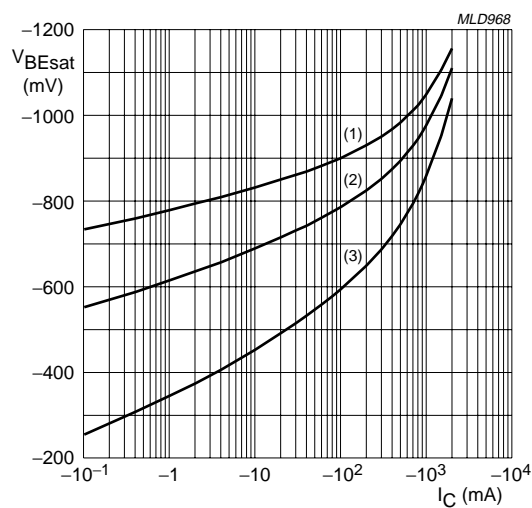
Fig.9 Base-emitter voltage as a function of collector current; typical values.



PSS8550D $I_C/I_B = 10$.

- (1) $T_{amb} = -55$ °C.
- (2) $T_{amb} = 25$ °C.
- (3) $T_{amb} = 150$ °C.

Fig.10 Collector-emitter saturation voltage as a function of collector current; typical values.



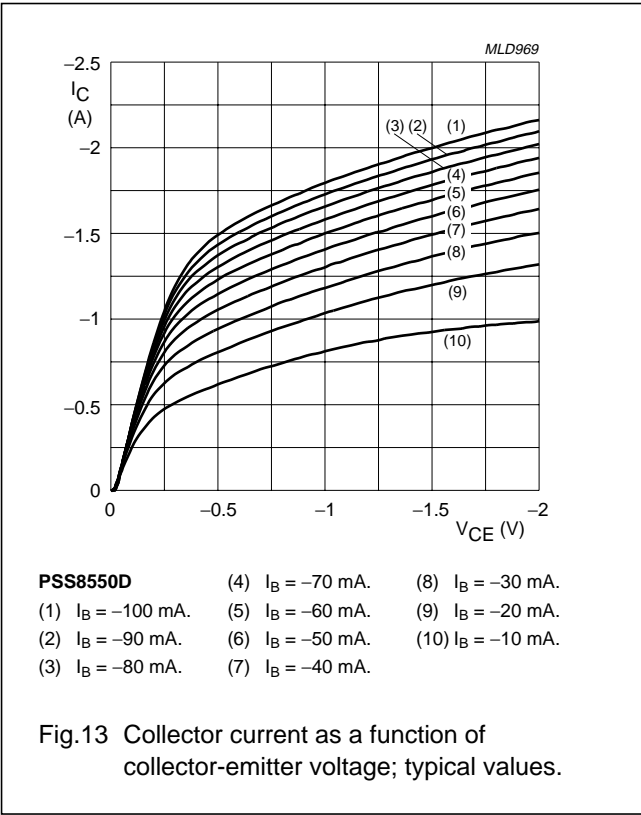
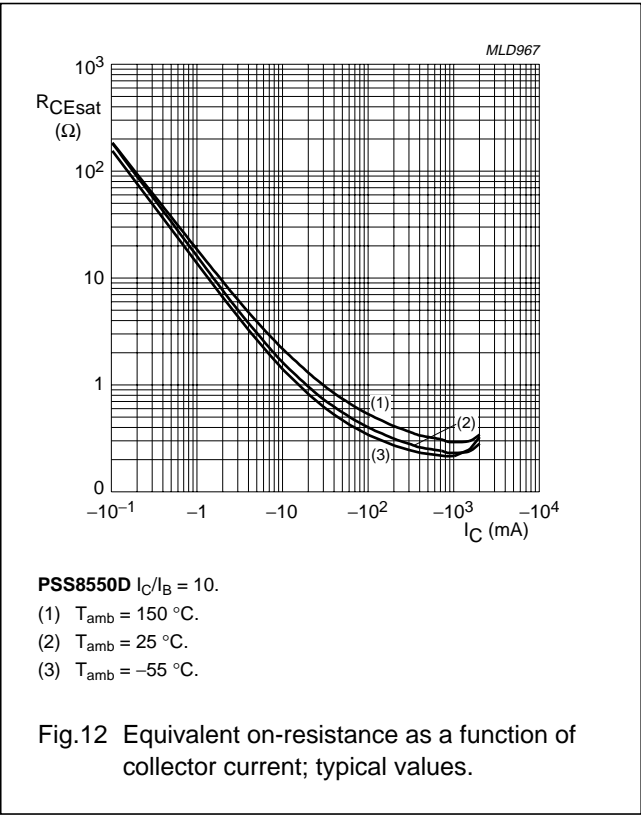
PSS8550D $I_C/I_B = 10$.

- (1) $T_{amb} = 150$ °C.
- (2) $T_{amb} = 25$ °C.
- (3) $T_{amb} = -55$ °C.

Fig.11 Base-emitter saturation voltage as a function of collector current; typical values.

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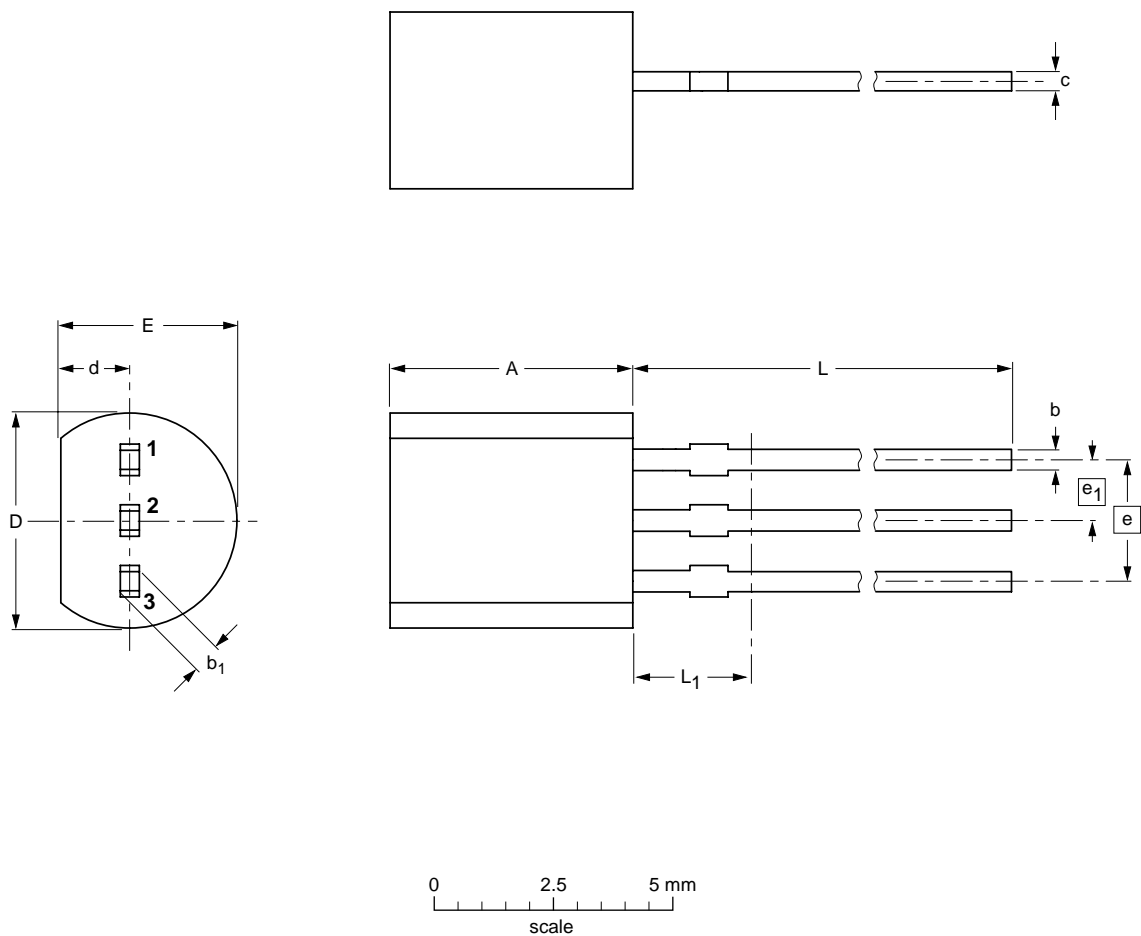
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PACKAGE OUTLINE

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

PNP medium power 25 V transistor

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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
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NOTES

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NOTES

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