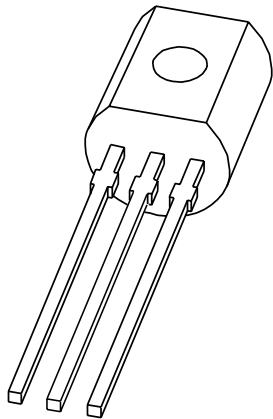


DATA SHEET



PSS8550

PNP medium power 25 V transistor

Product specification
Supersedes data of 2002 Nov 19

2004 Aug 10

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

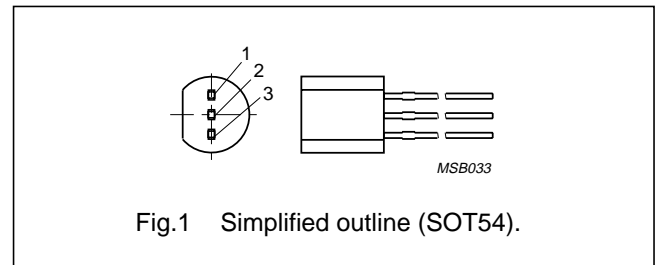
| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| PSS8550C | S8550C |
| PSS8550D | S8550D |

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 |



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 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

- 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 cm².
- 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 $\delta \leq 0.75\%$.

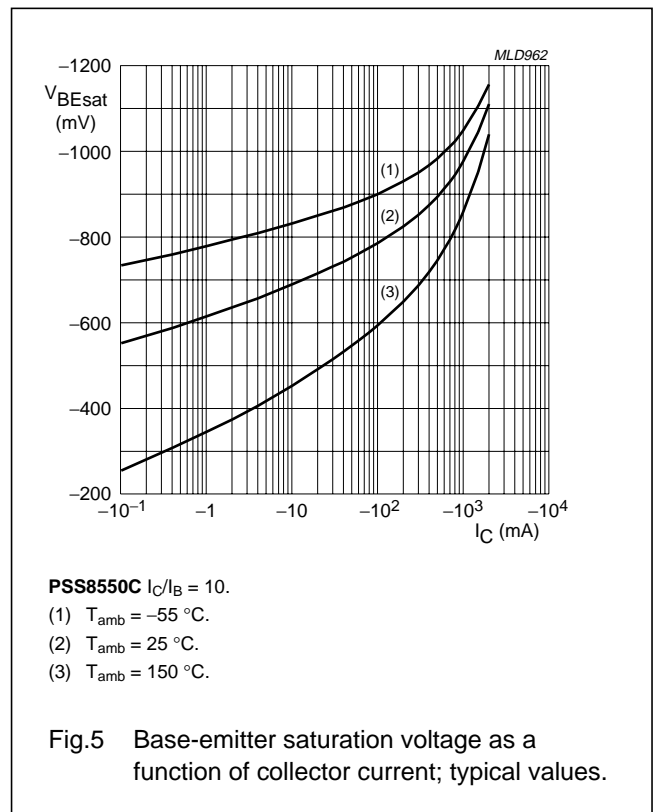
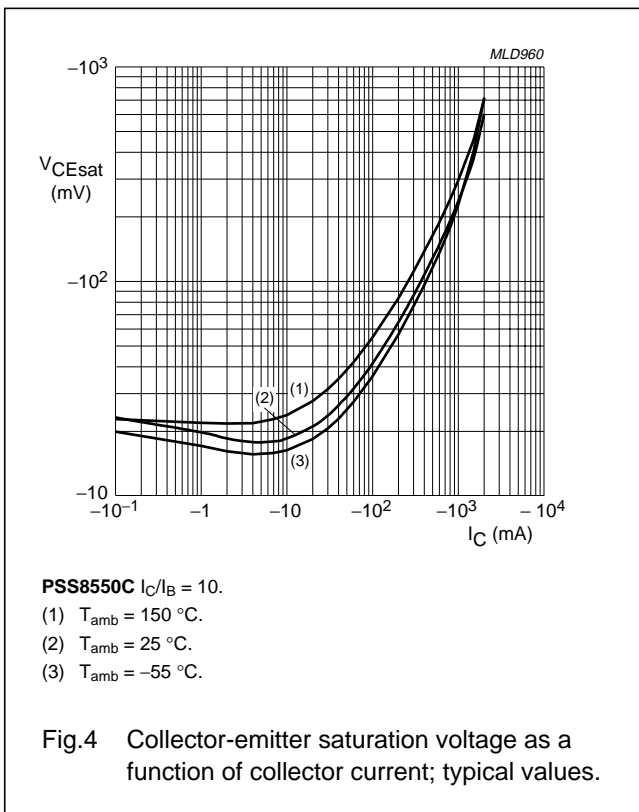
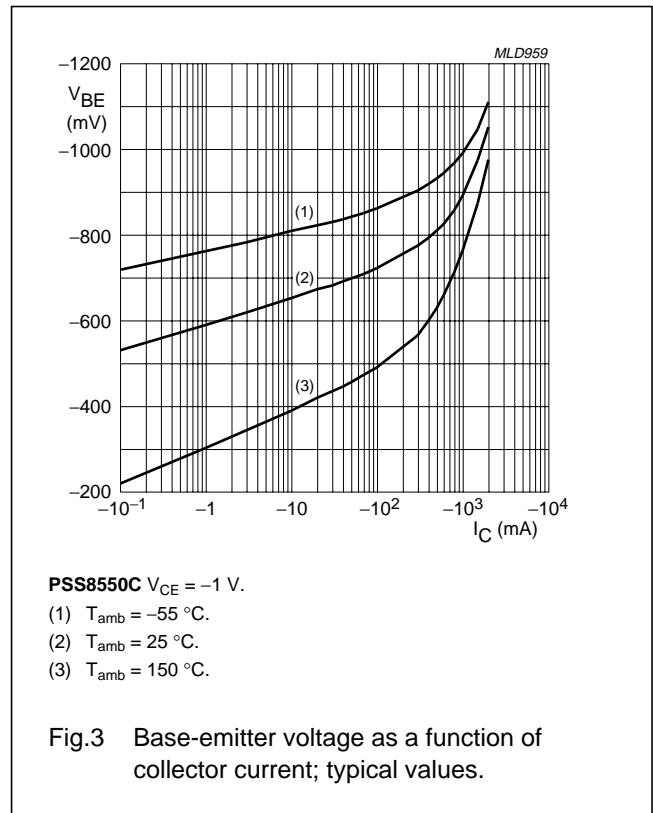
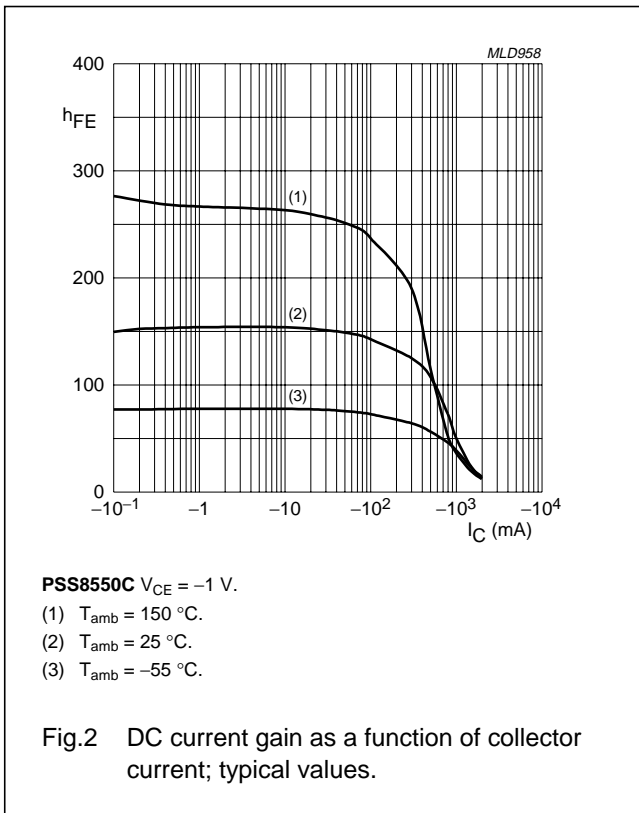
CHARACTERISTICS

$T_{amb} = 25$ °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 | 120 160 | – – | 200 300 | |
| 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; $I_E = I_E = 0$; $f = 1$ MHz | – | – | 12 | pF |

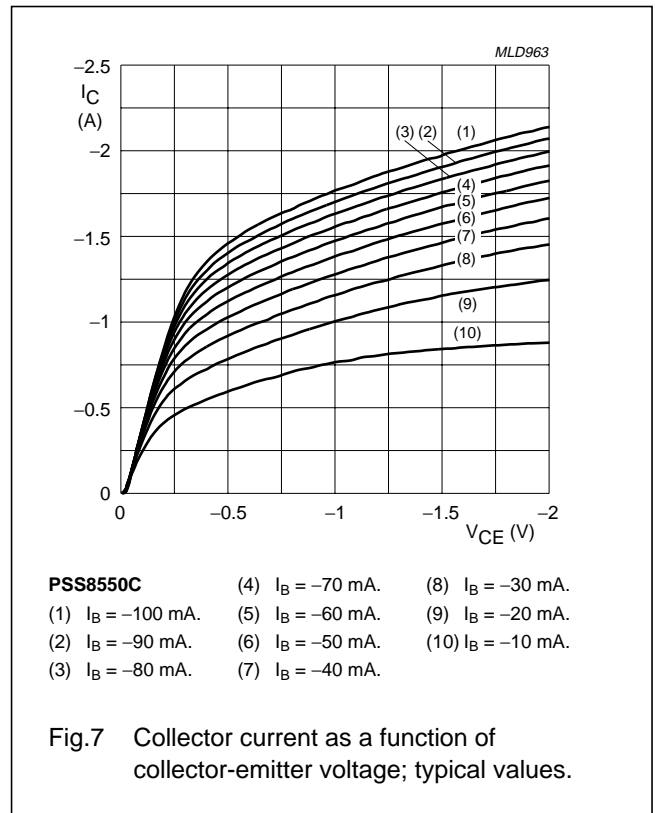
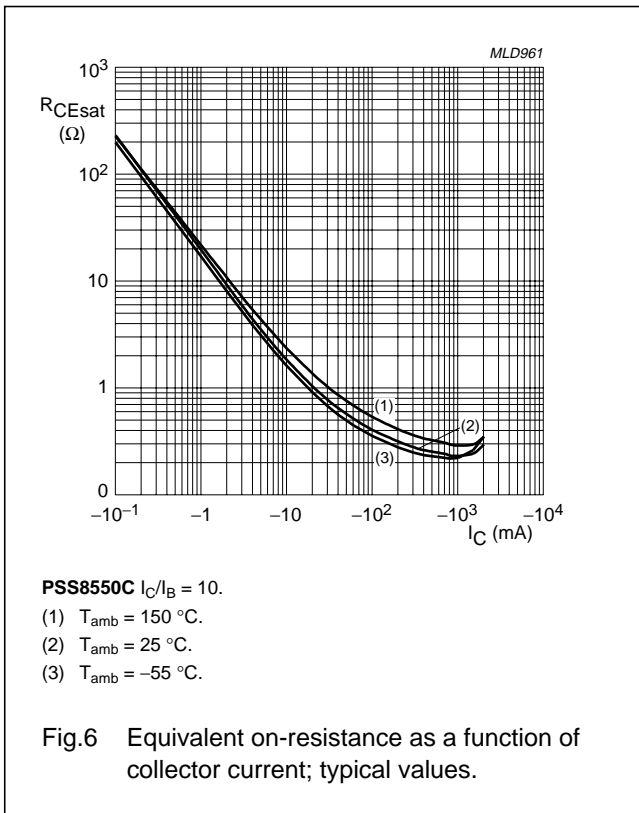
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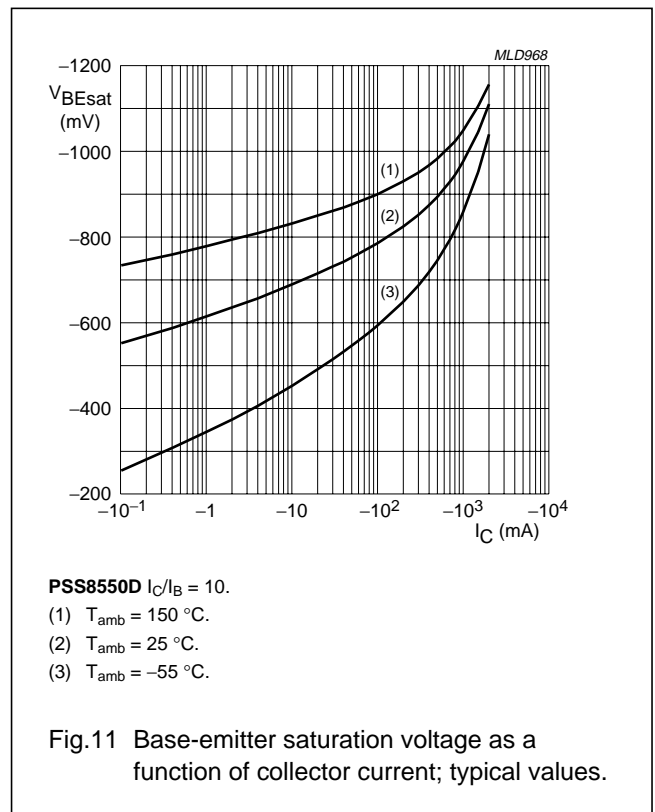
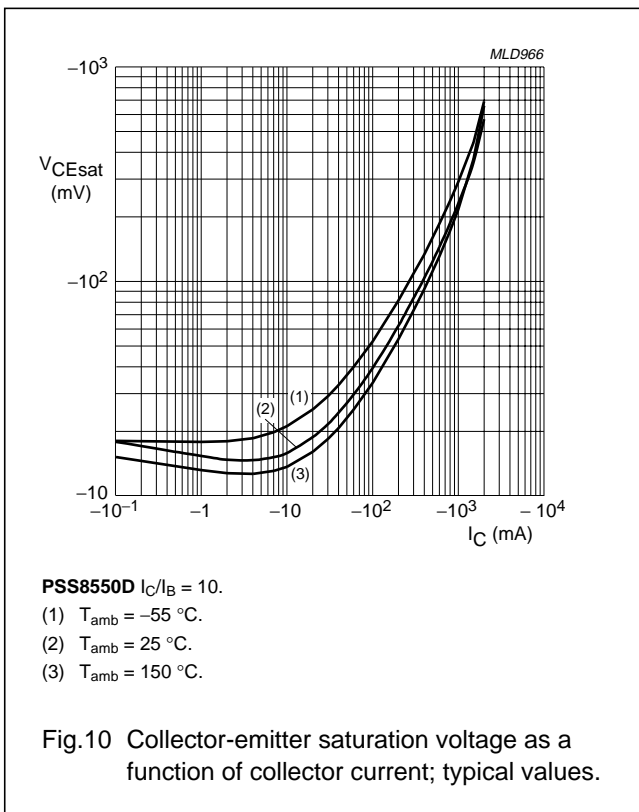
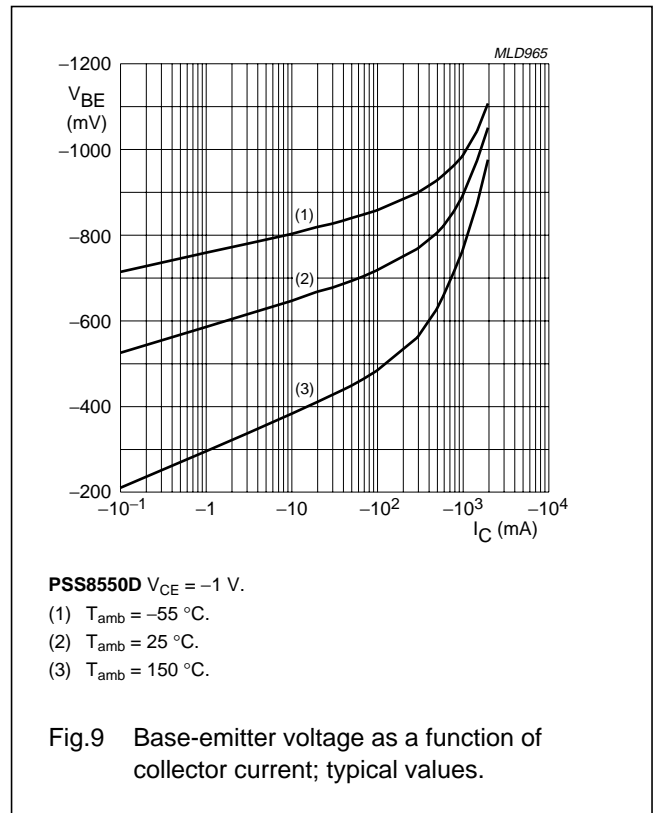
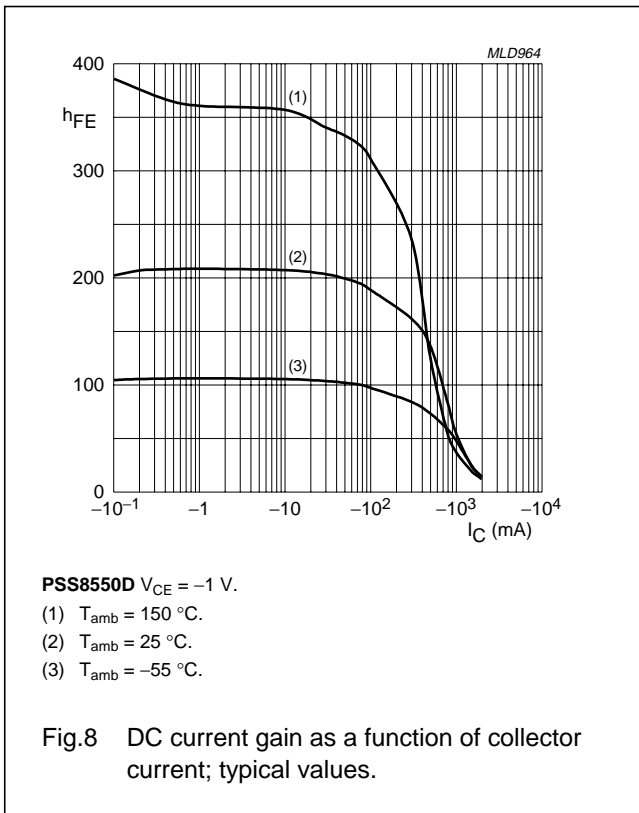
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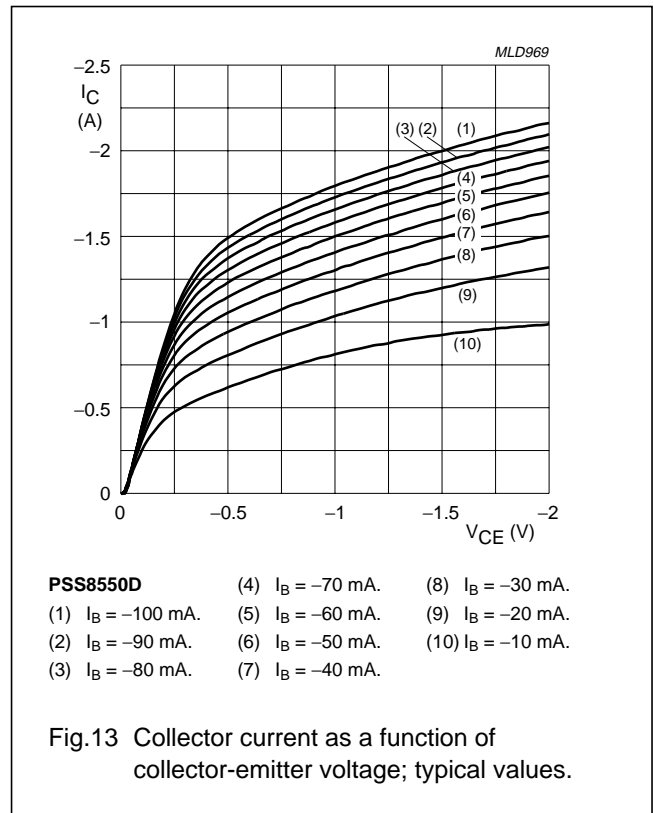
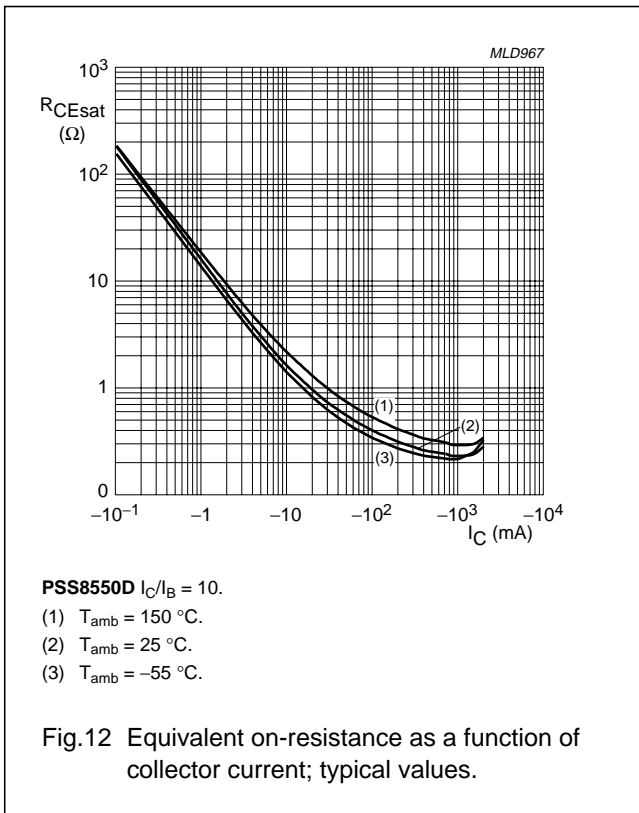
PNP medium power 25 V transistor

PSS8550



PNP medium power 25 V transistor

PSS8550



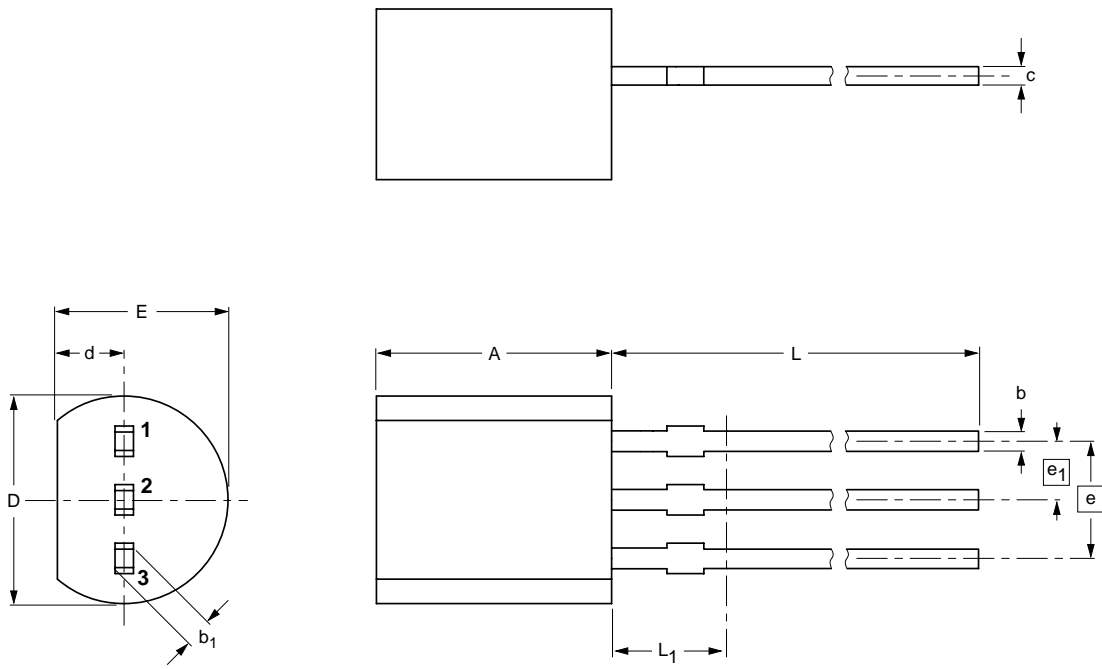
PNP medium power 25 V transistor

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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⁾ max. |
|------|------------|--------------|----------------|--------------|------------|------------|------------|------|----------------|--------------|---------------------------------------|
| mm | 5.2 5.0 | 0.48 0.40 | 0.66 0.55 | 0.45 0.38 | 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 | JEITA | | |
| SOT54 | | TO-92 | SC-43A | | 97-02-28 04-06-28 |

PNP medium power 25 V transistor

PSS8550

DATA SHEET STATUS

| LEVEL | DATA SHEET STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾⁽³⁾ | 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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