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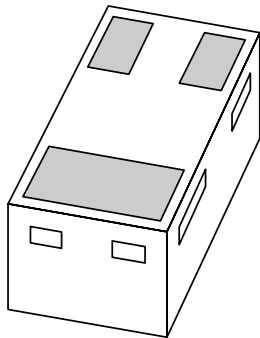
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Kind regards,

Team Nexperia

DATA SHEET



BC857M series PNP general purpose transistors

Product data sheet
Supersedes data of 2003 Jul 15

2004 Mar 10

PNP general purpose transistors

BC857M series

FEATURES

- Leadless ultra small plastic package (1 mm × 0.6 mm × 0.5 mm)
- Board space 1.3 × 0.9 mm
- Power dissipation comparable to SOT23.

APPLICATIONS

- General purpose small signal DC
- Low and medium frequency AC applications
- Mobile communications, digital (still) cameras, PDAs, PCMCIA cards.

DESCRIPTION

PNP general purpose transistor in a SOT883 leadless ultra small plastic package.
 NPN complement: BC847M series.

MARKING

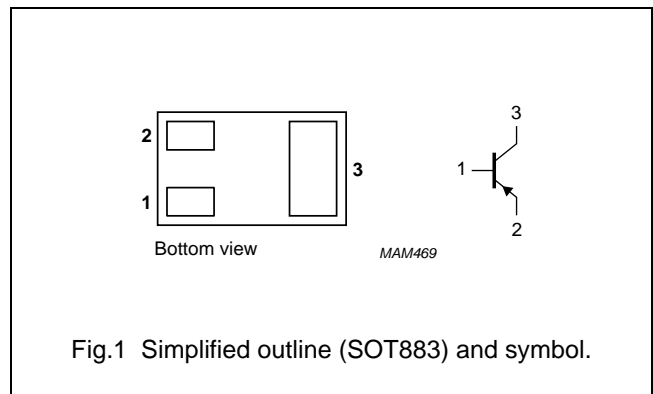
| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BC857AM | D1 |
| BC857BM | D2 |
| BC857CM | D3 |

QUICK REFERENCE DATA

| SYMBOL | PARAMETER | MAX. | UNIT |
|-----------|---------------------------|------|------|
| V_{CEO} | collector-emitter voltage | -45 | V |
| I_C | collector current (DC) | -100 | mA |
| I_{CM} | peak collector current | -200 | mA |

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | base |
| 2 | emitter |
| 3 | collector |



ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|-------------|---------|---|---------|
| | NAME | DESCRIPTION | VERSION |
| BC857AM | - | Leadless ultra small plastic package; 3 solder lands; body 1.0 x 0.6 x 0.5 mm | SOT883 |
| BC857BM | | | |
| BC857CM | | | |

PNP general purpose transistors

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LIMITING VALUES

In accordance with the Absolute Maximum 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 | | – | –100 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C note 1 note 2 | – – | 250 430 | mW mW |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 150 | °C |
| T _{amb} | operating ambient temperature | | –65 | +150 | °C |

Notes

1. Refer to SOT883 standard mounting conditions (footprint), FR4 with 60 μm copper strip line.
2. Device mounted on a FR4 printed-circuit board, single-sided copper, mounting pad for collector 1 cm².

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|----------------------|---|---------------------------------|------------|------------|
| R _{th(j-a)} | thermal resistance from junction to ambient | in free air note 1 note 2 | 500 290 | K/W K/W |

Notes

1. Refer to SOT883 standard mounting conditions (footprint), FR4 with 60 μm copper strip line.
2. Device mounted on a FR4 printed-circuit board, single-sided copper, mounting pad for collector 1 cm².

PNP general purpose transistors

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CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--|---|------|------|---------------|
| I_{CBO} | collector-base cut-off current | $V_{CB} = -30\text{ V}; I_E = 0$ | – | –15 | nA |
| | | $V_{CB} = -30\text{ V}; I_E = 0; T_j = 150\text{ °C}$ | – | –5 | μA |
| I_{EBO} | emitter-base cut-off current | $V_{EB} = -5\text{ V}; I_C = 0$ | – | –100 | nA |
| h_{FE} | DC current gain BC857AM BC857BM BC857CM | $V_{CE} = -5\text{ V}; I_C = -2\text{ mA}$ | | | |
| | | | 125 | 250 | |
| | | | 220 | 475 | |
| | | | 420 | 800 | |
| V_{BE} | base-emitter voltage | $I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$ | –600 | –750 | mV |
| | | $I_C = -10\text{ mA}; V_{CE} = -5\text{ V}$ | – | –820 | mV |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$ | – | –200 | mV |
| | | $I_C = -100\text{ mA}; I_B = -5\text{ mA}; \text{note 1}$ | – | –400 | mV |
| C_c | collector capacitance | $I_E = I_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$ | – | 2.5 | pF |
| f_T | transition frequency | $V_{CE} = -5\text{ V}; I_C = -10\text{ mA};$ $f = 100\text{ MHz}$ | 100 | – | MHz |
| F | noise figure | $I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V};$ $R_S = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}$ | – | 10 | dB |

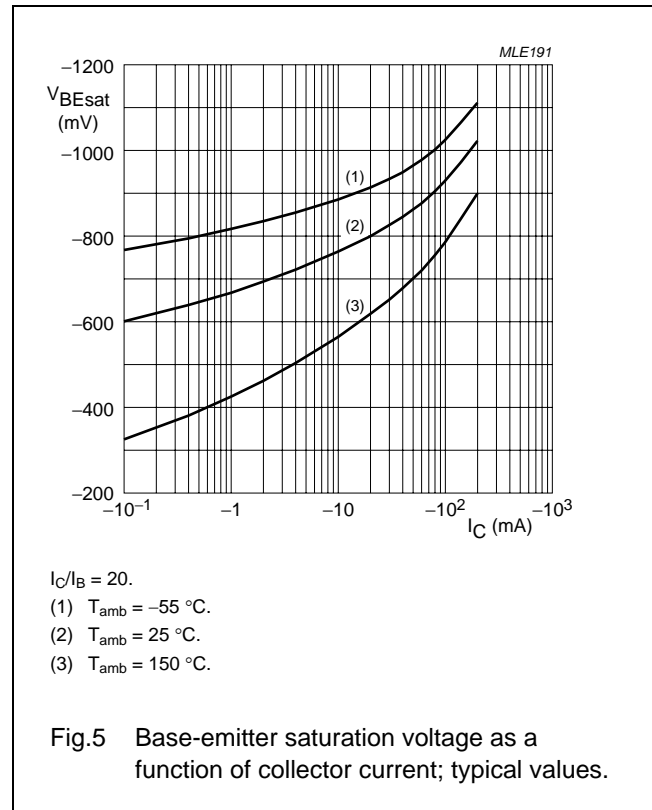
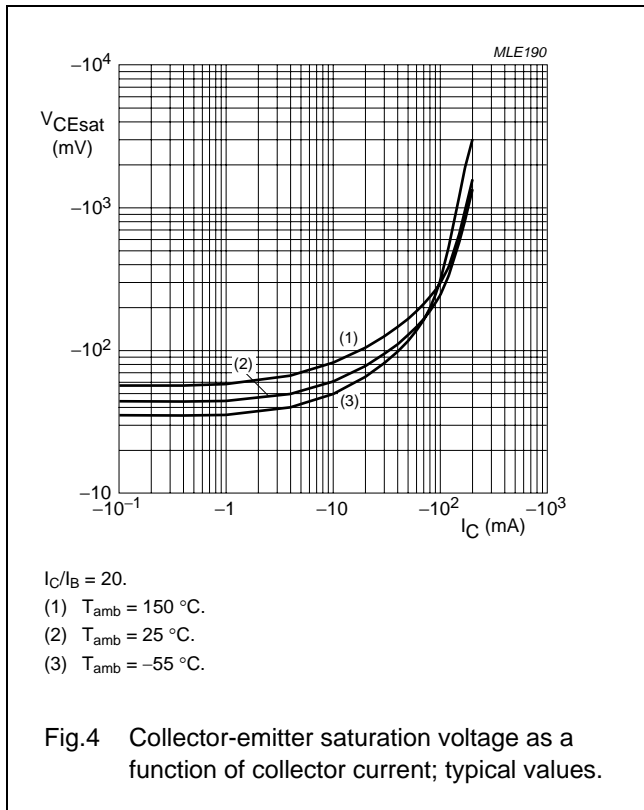
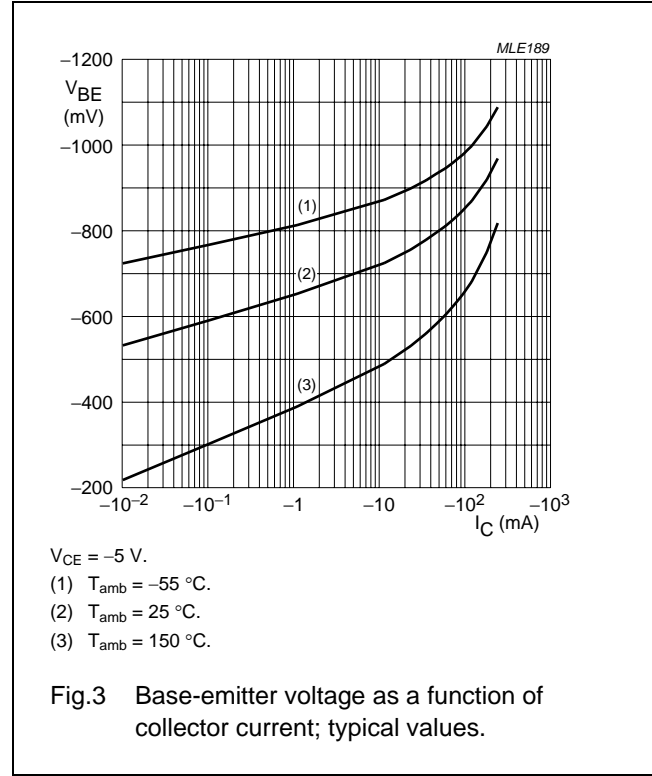
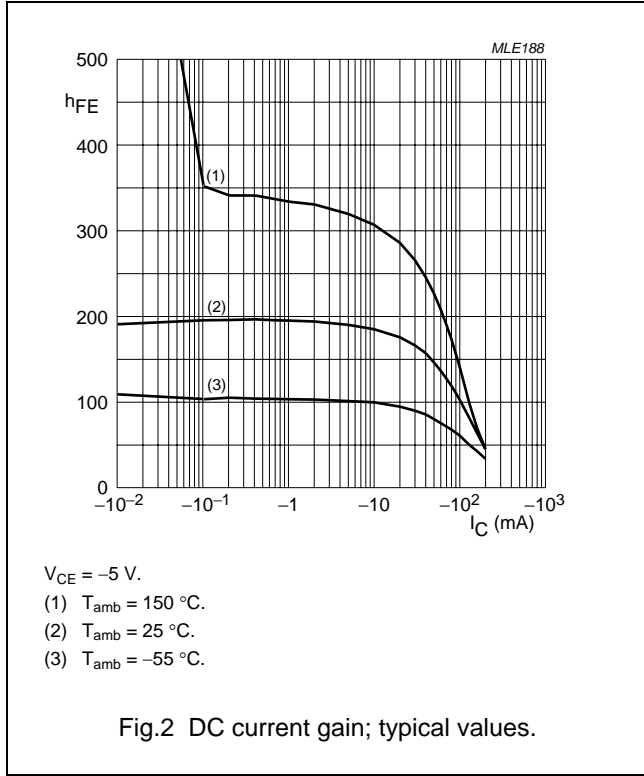
Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$.

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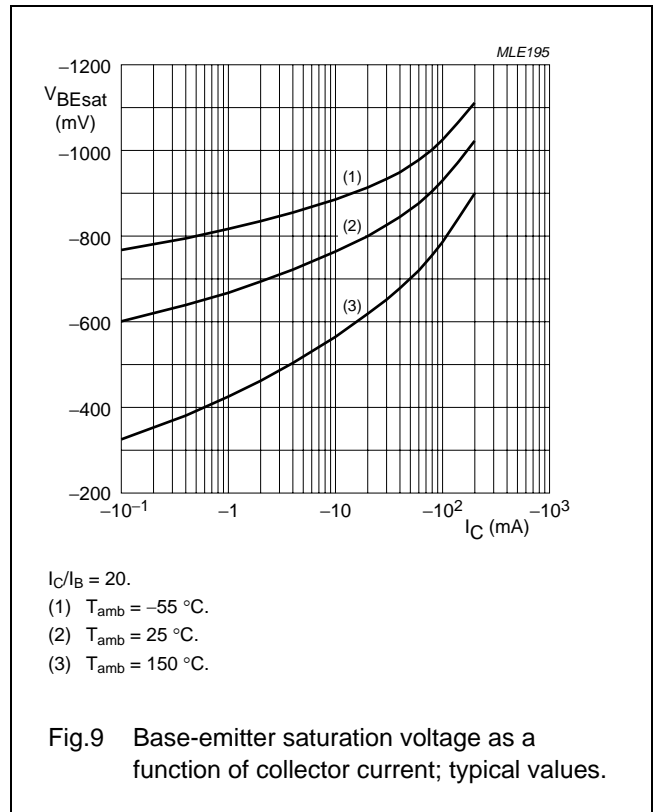
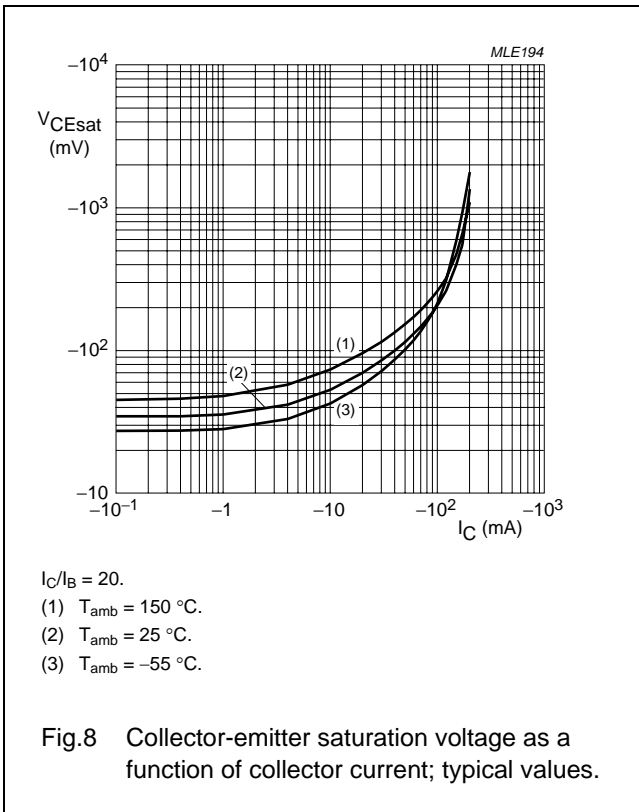
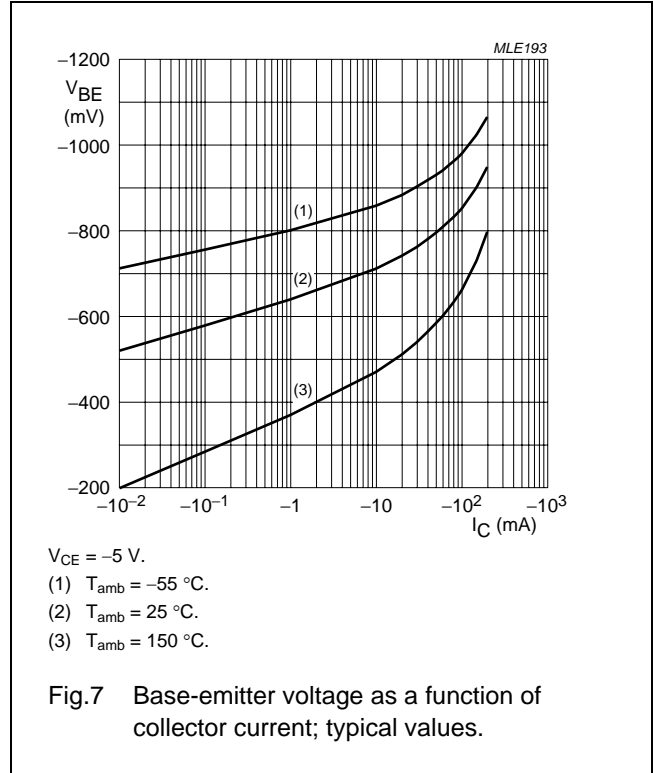
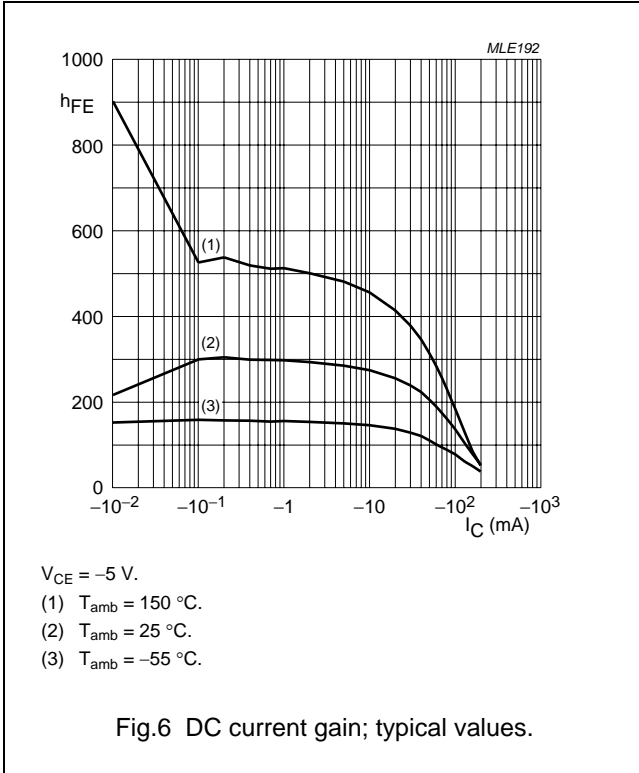
GRAPHICAL INFORMATION BC857AM



PNP general purpose transistors

BC857M series

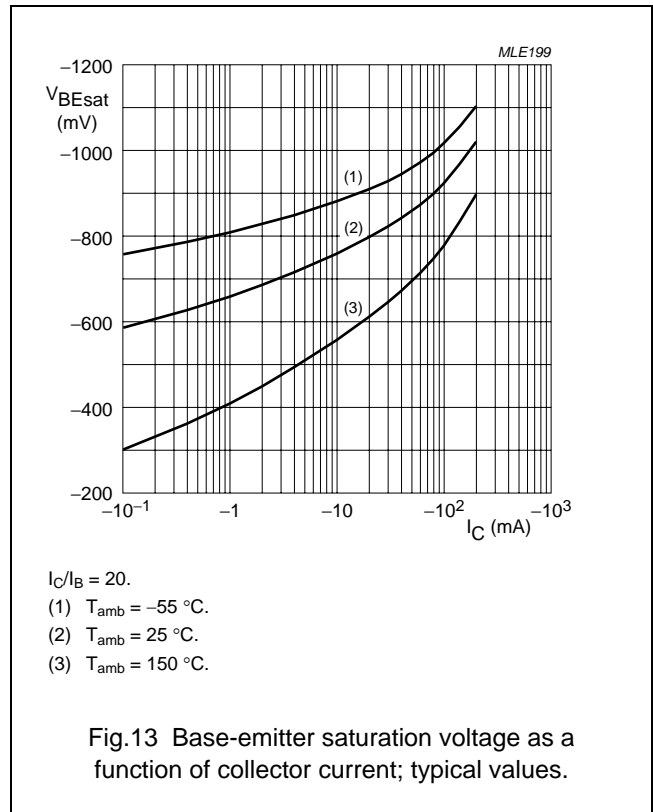
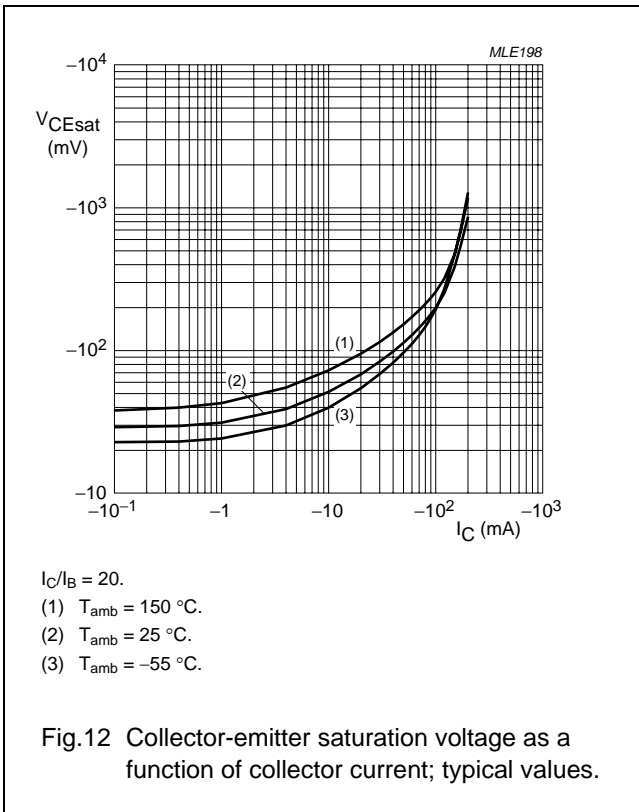
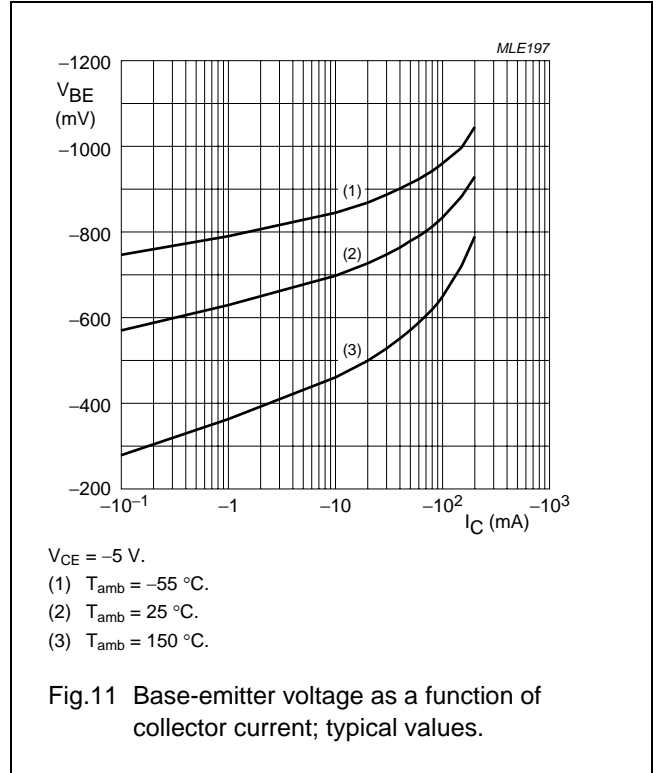
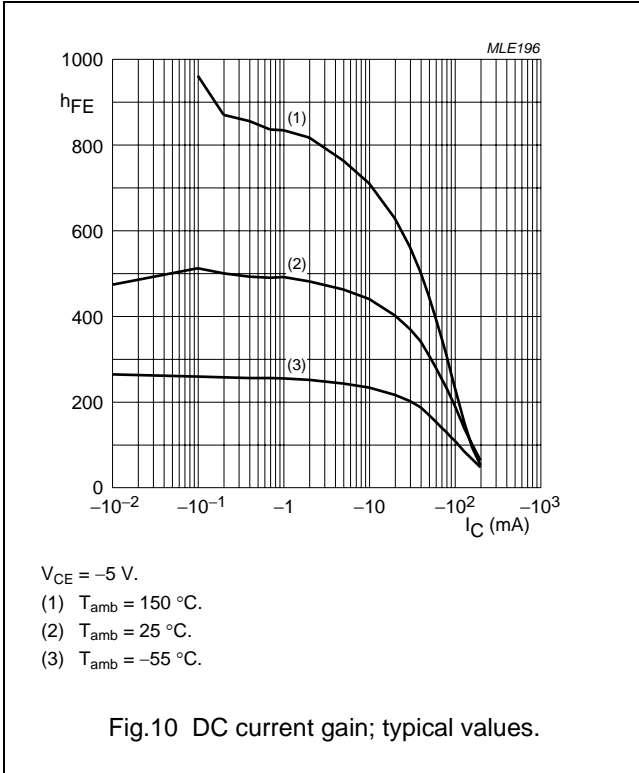
GRAPHICAL INFORMATION BC857BM



PNP general purpose transistors

BC857M series

GRAPHICAL INFORMATION BC857CM



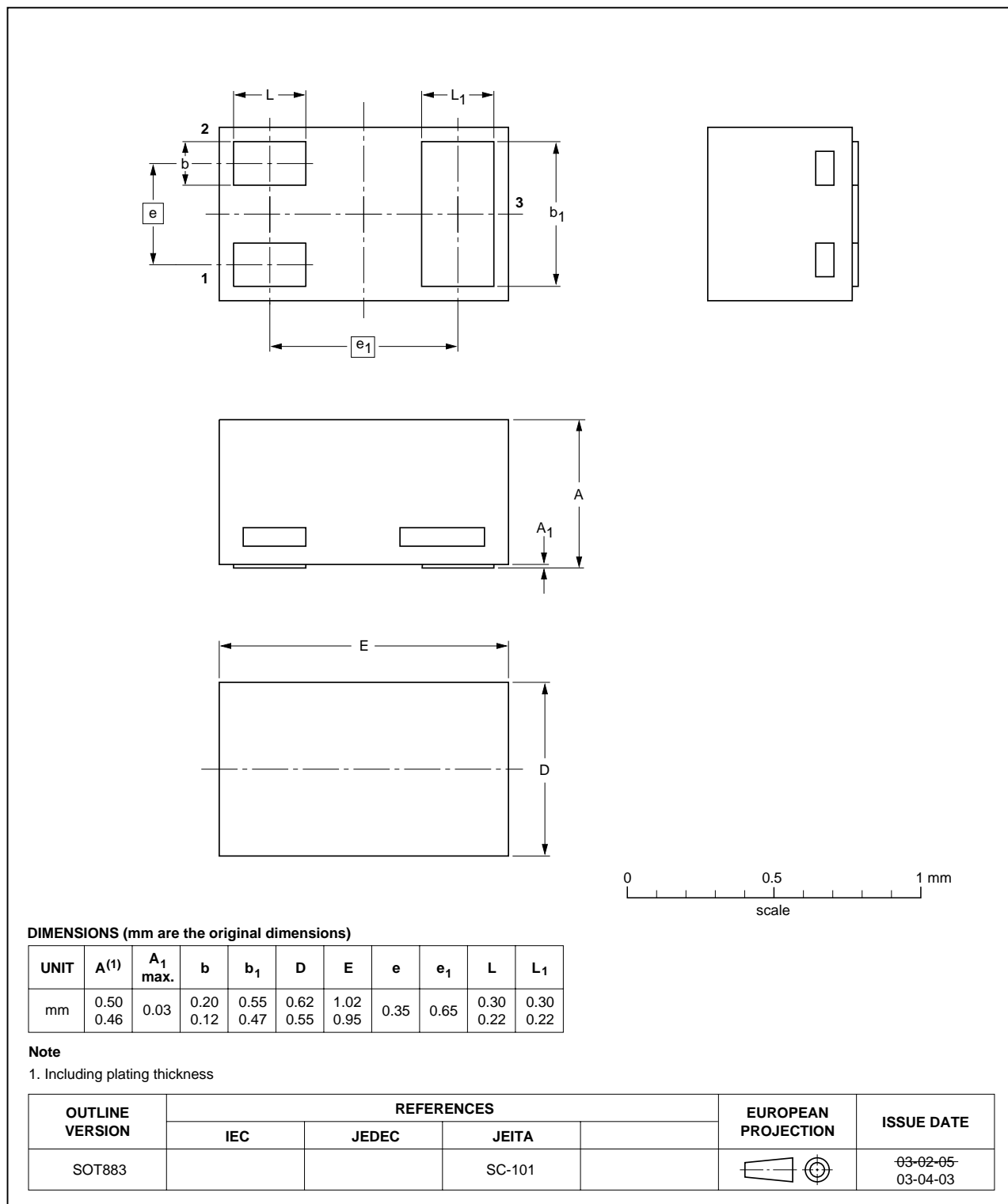
PNP general purpose transistors

BC857M series

PACKAGE OUTLINE

Leadless ultra small plastic package; 3 solder lands; body 1.0 x 0.6 x 0.5 mm

SOT883



PNP general purpose transistors

BC857M series

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. |

Notes

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2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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NXP Semiconductors

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Contact information

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