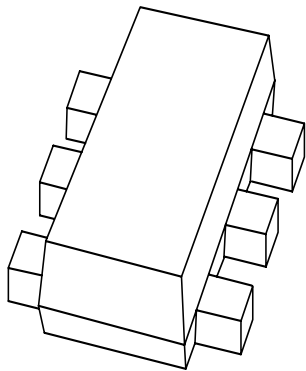


DATA SHEET



BC857BV

PNP general purpose double
transistor

Product data sheet
Supersedes data of 2001 Aug 10

2001 Nov 07

PNP general purpose double transistor

BC857BV

FEATURES

- 300 mW total power dissipation
- Very small 1.6 mm × 1.2 mm × 0.55 mm ultra thin package
- Excellent coplanarity due to straight leads
- Improved thermal behaviour due to flat leads
- Reduces number of components as replacement of two SC-75/SC-89 packaged BISS transistors
- Reduces required board space
- Reduces pick and place costs.

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

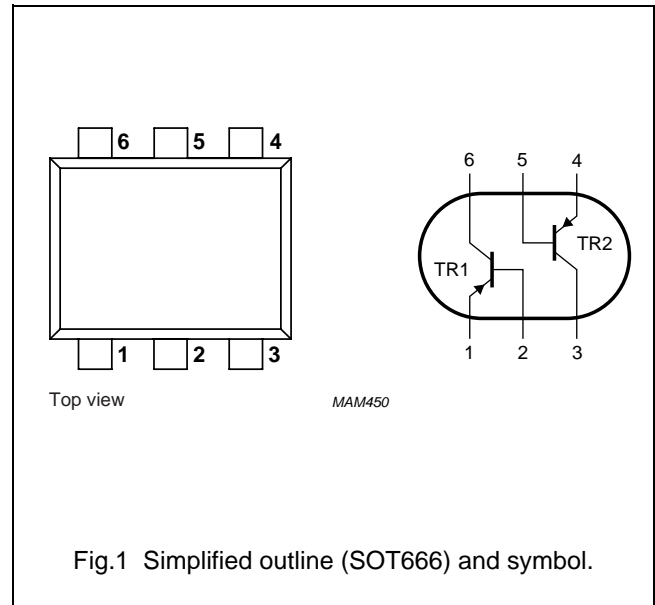
PNP double transistor in a SOT666 plastic package.
NPN complement: BC847BV.

MARKING

| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BC857BV | 3F |

PINNING

| PIN | DESCRIPTION |
|------|--------------------|
| 1, 4 | emitter TR1; TR2 |
| 2, 5 | base TR1; TR2 |
| 6, 3 | collector TR1; TR2 |



PNP general purpose double transistor

BC857BV

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------------------|-------------------------------|----------------------------------|------|------|------|
| Per transistor | | | | | |
| 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 | T _{amb} ≤ 25 °C; note 1 | – | 200 | mW |
| T _{stg} | storage temperature | | –65 | +150 | °C |
| T _j | junction temperature | | – | 150 | °C |
| T _{amb} | operating ambient temperature | | –65 | +150 | °C |
| Per device | | | | | |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C; note 1 | – | 300 | mW |

Note

1. Transistor mounted on an FR4 printed-circuit board.

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------------|---|---------------|-------|------|
| R _{th j-a} | thermal resistance from junction to ambient | notes 1 and 2 | 416 | K/W |

Notes

1. Transistor mounted on an FR4 printed-circuit board.
2. The only recommended soldering method is reflow soldering.

PNP general purpose double transistor

BC857BV

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

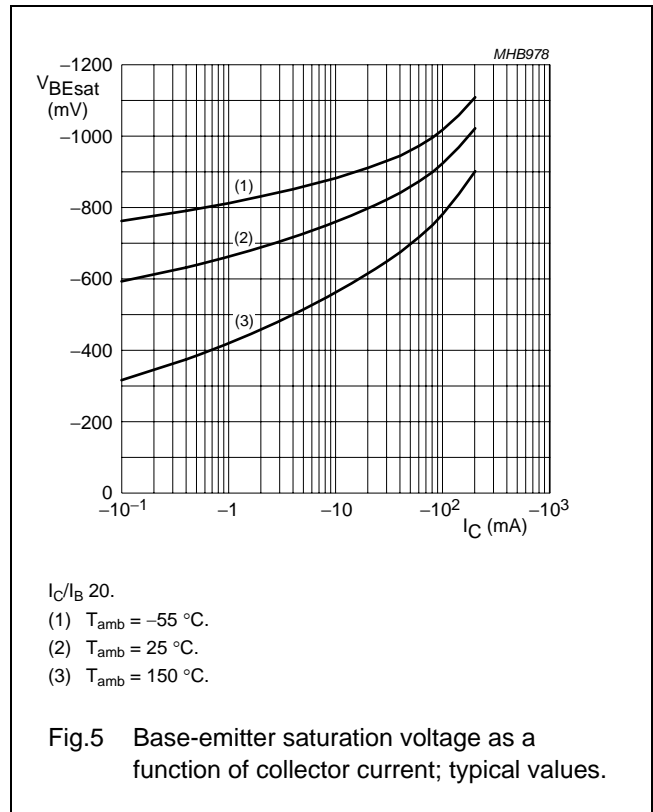
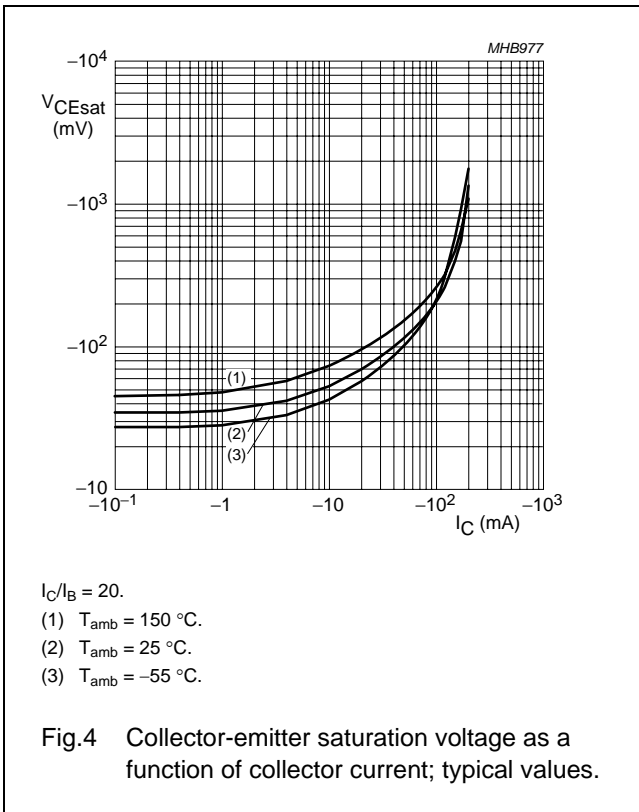
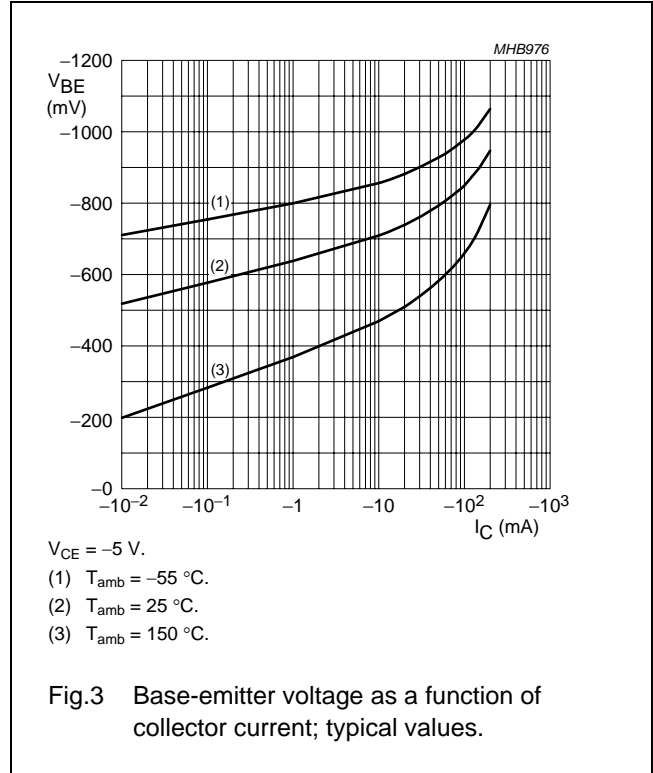
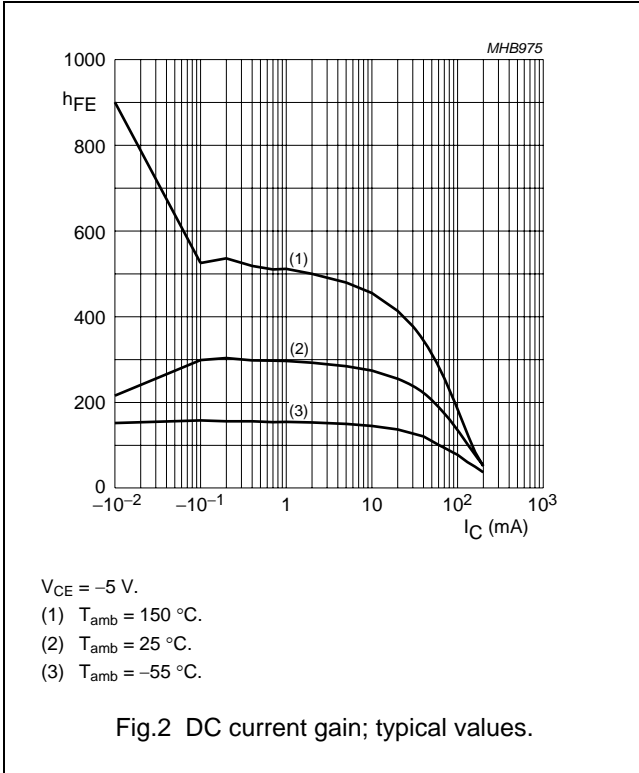
| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------------------|--------------------------------------|---|------|------|------|---------------|
| Per transistor | | | | | | |
| I_{CBO} | collector-base cut-off current | $I_E = 0; V_{CB} = -30\text{ V}$ | – | – | –15 | nA |
| | | $I_E = 0; V_{CB} = -30\text{ V}; T_J = 150\text{ °C}$ | – | – | –5 | μA |
| I_{EBO} | emitter-base cut-off current | $I_C = 0; V_{EB} = -5\text{ V}$ | – | – | –100 | nA |
| h_{FE} | DC current gain | $I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$ | 200 | – | 450 | |
| V_{BE} | base-emitter voltage | $I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$ | –600 | –655 | –750 | mV |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$ | – | – | –100 | mV |
| | | $I_C = -100\text{ mA}; I_B = -5\text{ mA}; \text{note 1}$ | – | – | –400 | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$ | – | –755 | – | mV |
| C_c | collector capacitance | $I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$ | – | – | 2.2 | pF |
| C_e | emitter capacitance | $I_C = i_c = 0; V_{EB} = -500\text{ mV}; f = 1\text{ MHz}$ | – | 10 | – | pF |
| f_T | transition frequency | $I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$ | 100 | – | – | MHz |

Note1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

PNP general purpose double transistor

BC857BV

Graphical information BC857BV



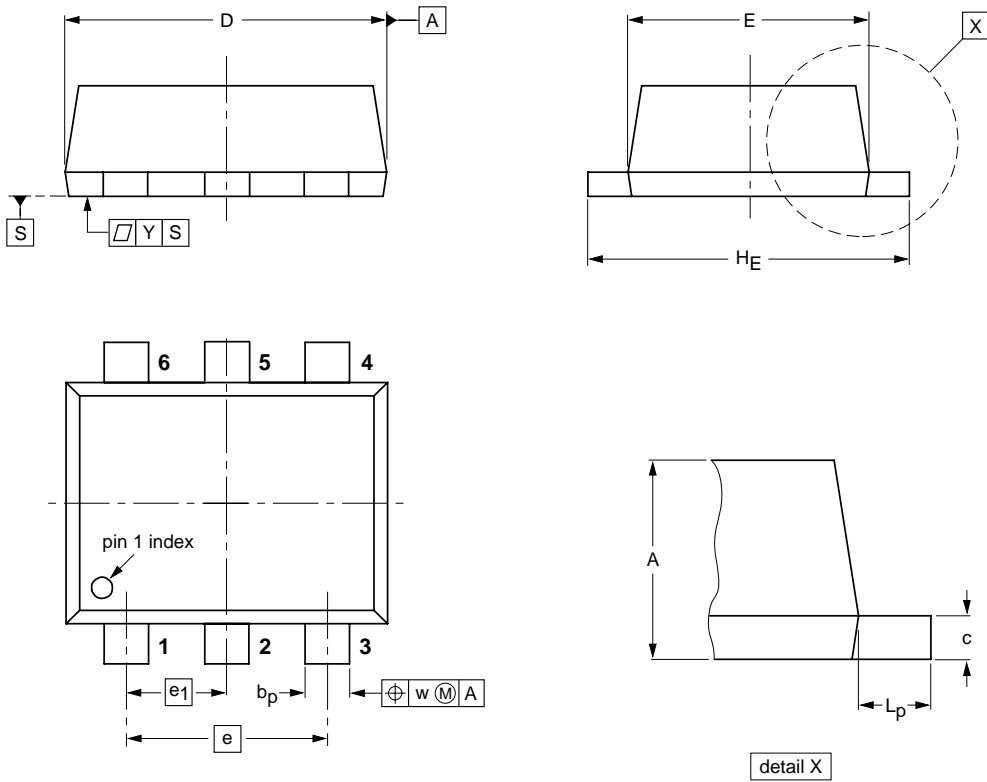
PNP general purpose double transistor

BC857BV

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



DIMENSIONS (mm are the original dimensions)

| UNIT | A | b_p | c | D | E | e | e_1 | H_E | L_p | w | y |
|------|------------|--------------|--------------|------------|------------|-----|-------|------------|------------|-----|-----|
| mm | 0.6 0.5 | 0.27 0.17 | 0.18 0.08 | 1.7 1.5 | 1.3 1.1 | 1.0 | 0.5 | 1.7 1.5 | 0.3 0.1 | 0.1 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|------|---------------------|----------------------|
| | IEC | JEDEC | EIAJ | | |
| SOT666 | | | | | 01-01-04 01-08-27 |

PNP general purpose double transistor

BC857BV

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. |

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