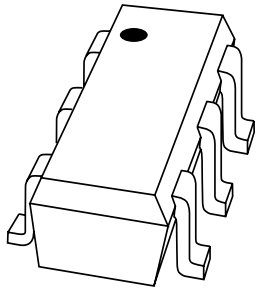


DATA SHEET



BC856S

**PNP general purpose double
transistor**

Product specification

1999 Aug 24

PNP general purpose double transistor

BC856S

FEATURES

- Two transistors in one package
- Reduces number of components and board space
- No mutual interference between the transistors.

APPLICATIONS

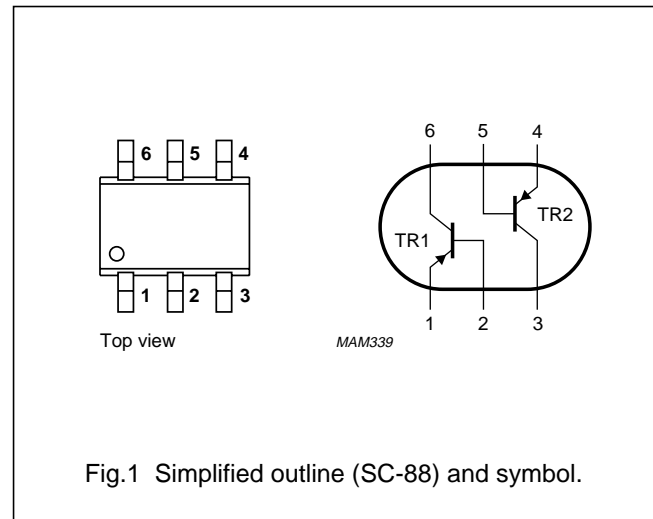
- General purpose switching and small signal amplification.

DESCRIPTION

PNP double transistor in an SC-88 (SOT363) plastic six lead package.

PINNING

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



MARKING

| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| BC856S | 5Ft |

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------------------|-------------------------------|--------------------------------------|------|------|------|
| Per transistor | | | | | |
| V_{CBO} | collector-base voltage | open emitter | – | –80 | V |
| V_{CEO} | collector-emitter voltage | open base | – | –65 | V |
| V_{EBO} | emitter-base voltage | open collector | – | –5 | V |
| I_C | collector current (DC) | | – | –100 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ °C}$ | – | 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 | $T_{amb} \leq 25\text{ °C}$; note 1 | – | 300 | mW |

Note

1. Refer to SC-88 (SOT363) standard mounting conditions.

PNP general purpose double transistor

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 416 | K/W |

Note

1. Refer to SC-88 (SOT363) standard mounting conditions.

CHARACTERISTICS

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

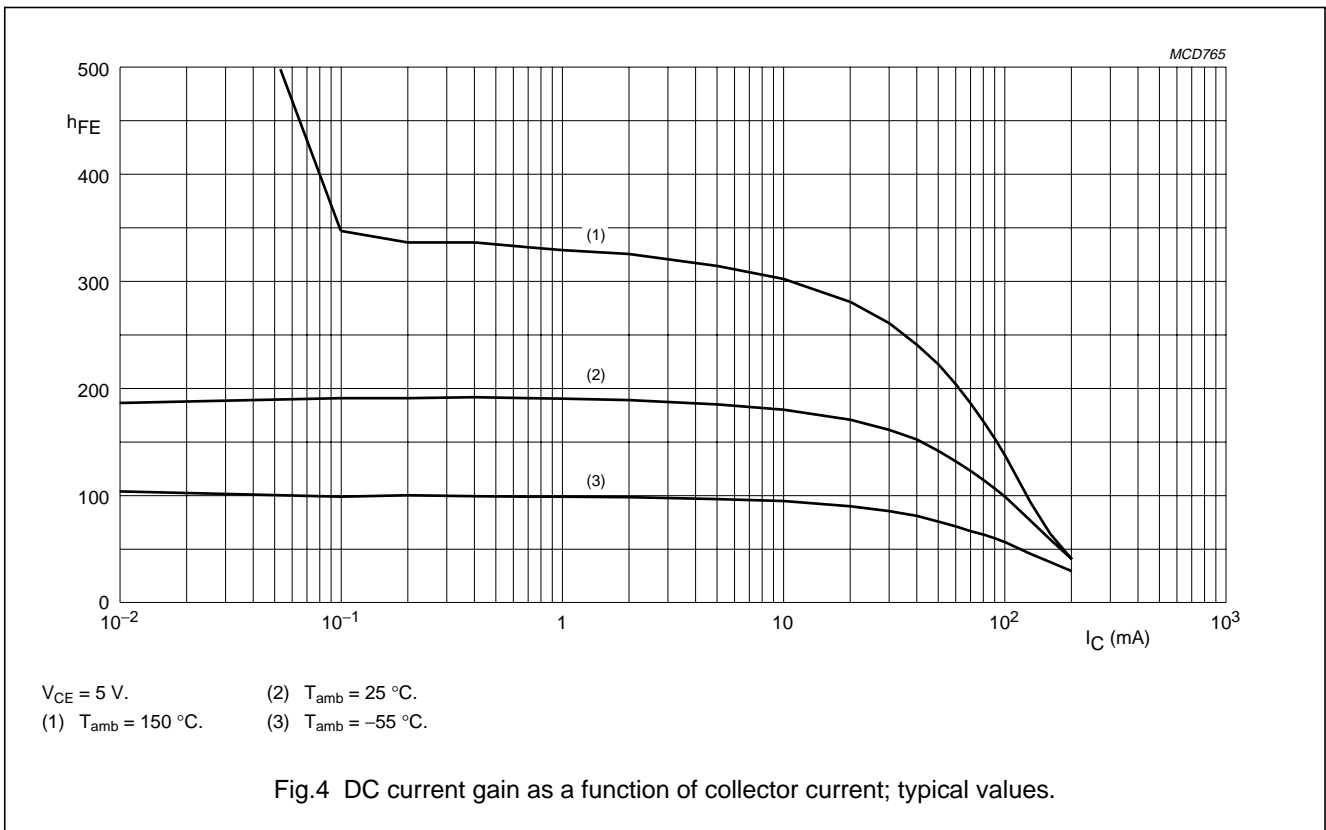
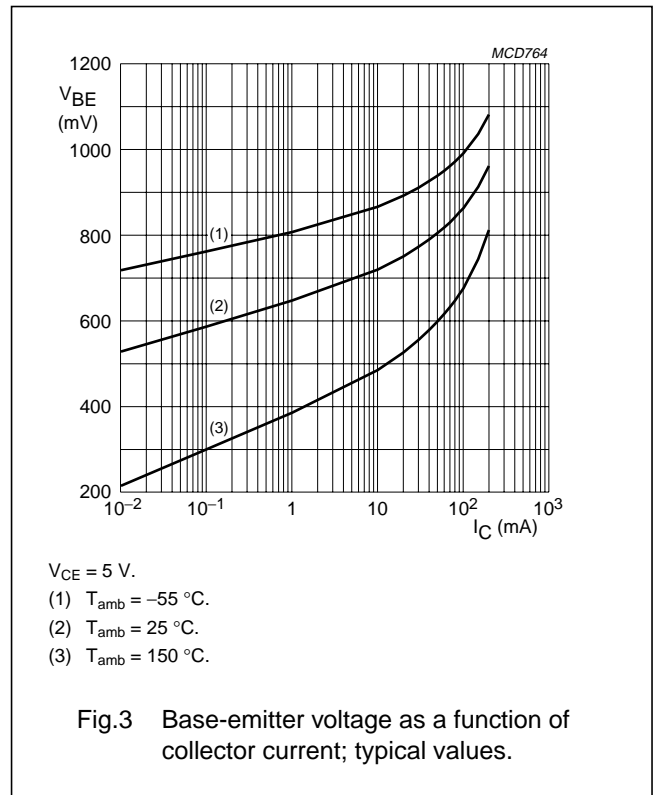
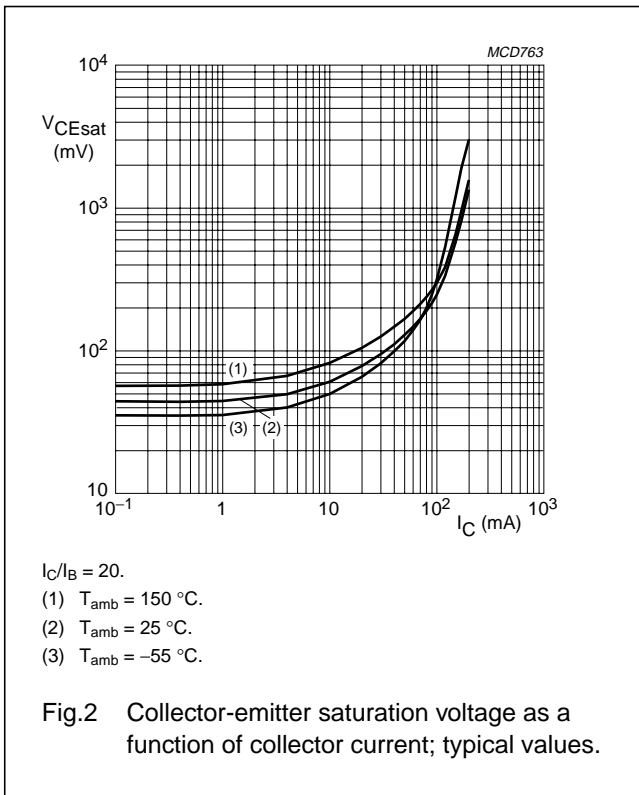
| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-----------------------|--------------------------------------|---|------|------|------|---------------|
| Per transistor | | | | | | |
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = -30\text{ V}$ | – | – | –15 | nA |
| | | $I_E = 0; V_{CB} = -30\text{ V}; T_j = 150\text{ °C}$ | – | – | –5 | μA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = -5\text{ V}$ | – | – | –100 | nA |
| h_{FE} | DC current gain | $I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$ | 110 | – | – | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$ | – | – | –100 | mV |
| | | $I_C = -100\text{ mA}; I_B = -5\text{ mA}; \text{note 1}$ | – | – | –300 | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$ | – | 700 | – | 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 | $I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$ | 100 | – | – | MHz |

Note

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

PNP general purpose double transistor

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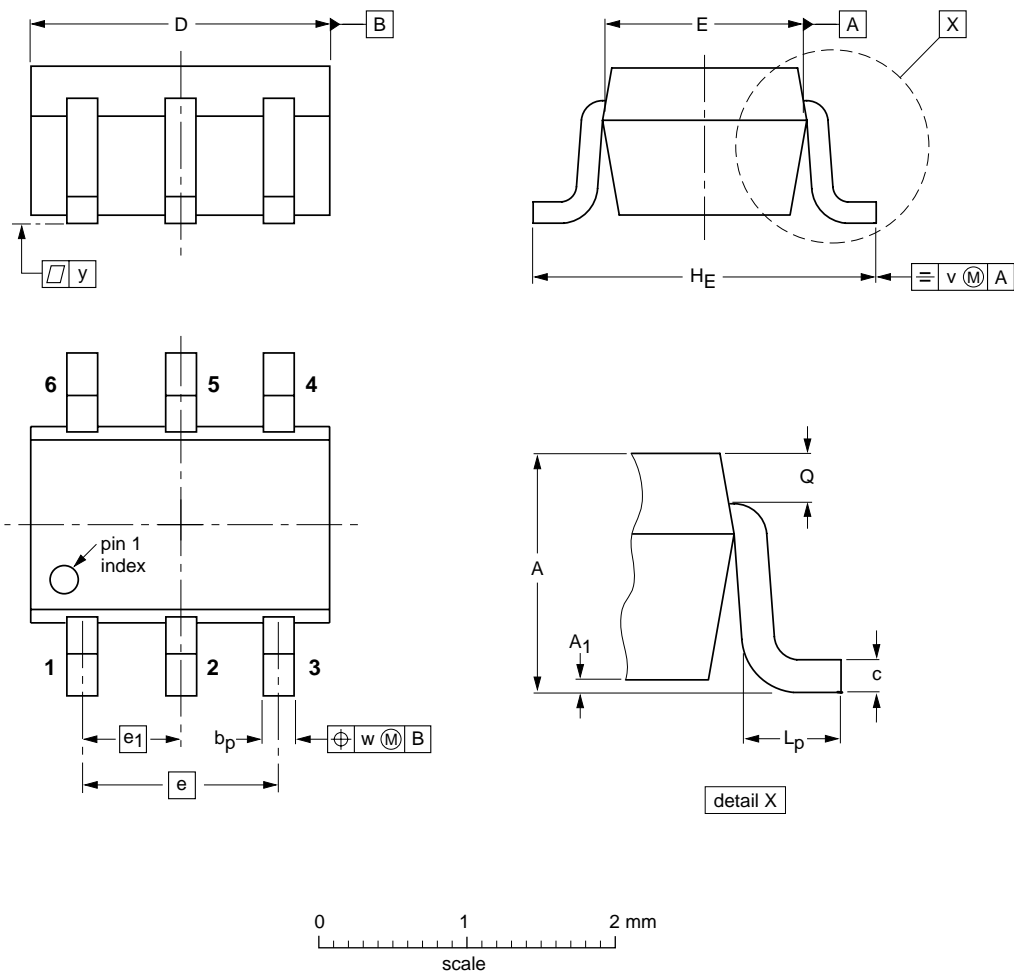
PNP general purpose double transistor

BC856S

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

| UNIT | A | A ₁ max | b _p | c | D | E | e | e ₁ | H _E | L _p | Q | v | w | y |
|------|------------|--------------------|----------------|--------------|------------|--------------|-----|----------------|----------------|----------------|--------------|-----|-----|-----|
| mm | 1.1 0.8 | 0.1 | 0.30 0.20 | 0.25 0.10 | 2.2 1.8 | 1.35 1.15 | 1.3 | 0.65 | 2.2 2.0 | 0.45 0.15 | 0.25 0.15 | 0.2 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|-------|--|---------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT363 | | | SC-88 | | | 97-02-28 |

PNP general purpose double transistor

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DEFINITIONS

| | |
|---|---|
| Data sheet status | |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |

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PNP general purpose double transistor

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