

## PNP general purpose transistor

## BC807

## FEATURES

- High current (max. 500 mA)
- Low voltage (max. 45 V).

## APPLICATIONS

- General purpose switching and amplification.

## DESCRIPTION

PNP transistor in a SOT23 plastic package.  
NPN complements: BC817.

## MARKING

| TYPE NUMBER | MARKING CODE (1) |
|-------------|------------------|
| BC807       | 5D*              |
| BC807-16    | 5A*              |
| BC807-25    | 5B*              |
| BC807-40    | 5C*              |

## Note

1. \* = p: Made in Hong Kong. \* = t: Made in Malaysia.

## LIMITING VALUES

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

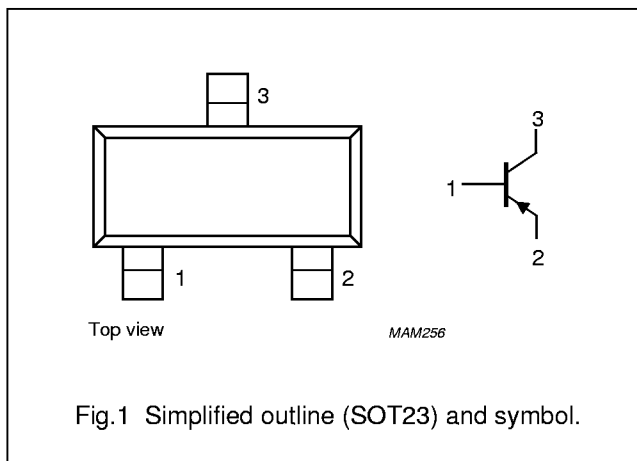
| SYMBOL    | PARAMETER                     | CONDITIONS                   | MIN. | MAX. | UNIT |
|-----------|-------------------------------|------------------------------|------|------|------|
| $V_{CBO}$ | collector-base voltage        | open emitter                 | —    | –50  | V    |
| $V_{CEO}$ | collector-emitter voltage     | open base; $I_C = -10$ mA    | —    | –45  | V    |
| $V_{EBO}$ | emitter-base voltage          | open collector               | —    | –5   | V    |
| $I_C$     | collector current (DC)        |                              | —    | –500 | mA   |
| $I_{CM}$  | peak collector current        |                              | —    | –1   | A    |
| $I_{BM}$  | peak base current             |                              | —    | –200 | mA   |
| $P_{tot}$ | total power dissipation       | $T_{amb} \leq 25$ °C; note 1 | —    | 250  | mW   |
| $T_{stg}$ | storage temperature           |                              | –65  | +150 | °C   |
| $T_j$     | junction temperature          |                              | —    | 150  | °C   |
| $T_{amb}$ | operating ambient temperature |                              | –65  | +150 | °C   |

## Note

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

## PINNING

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



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## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|---------------|---------------------------------------------|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1     | 500   | K/W  |

## Note

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

## CHARACTERISTICS

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

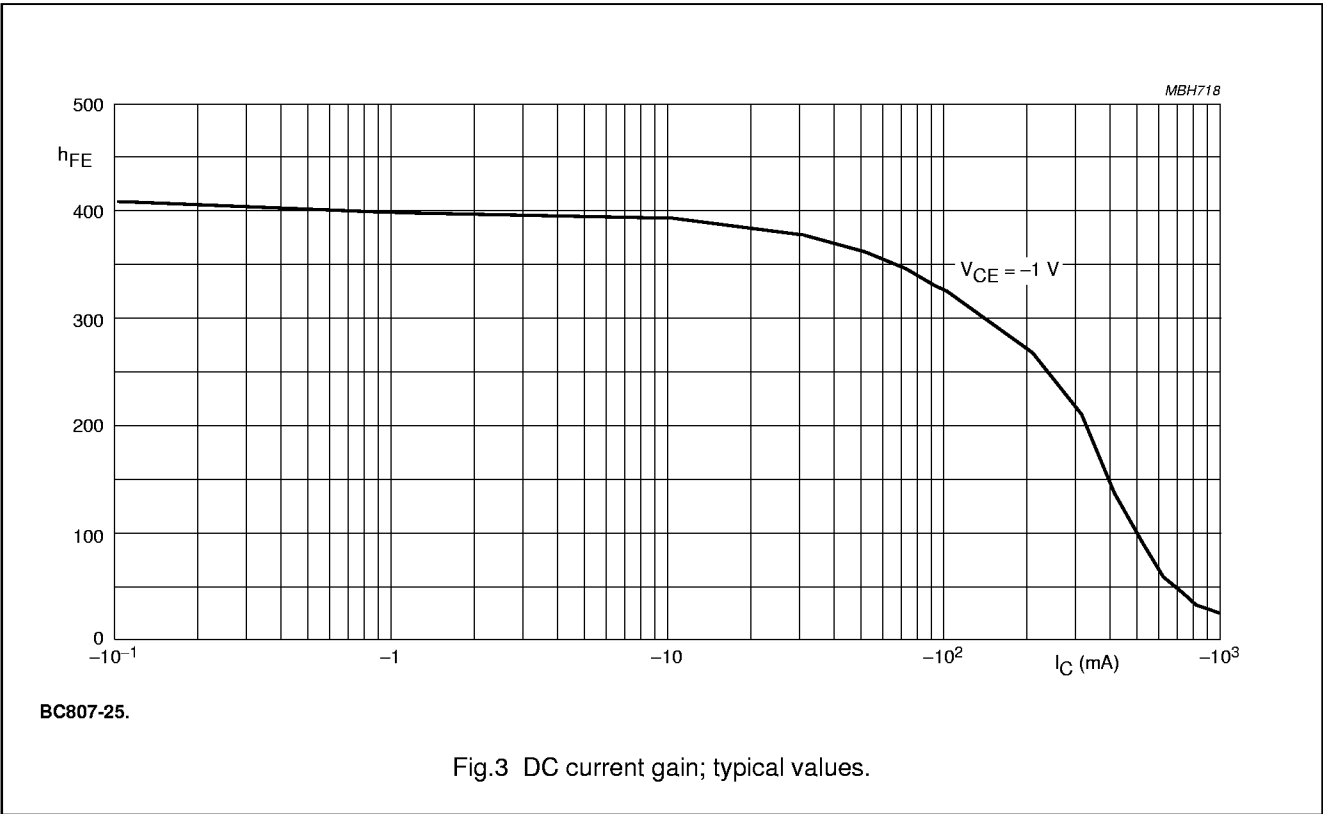
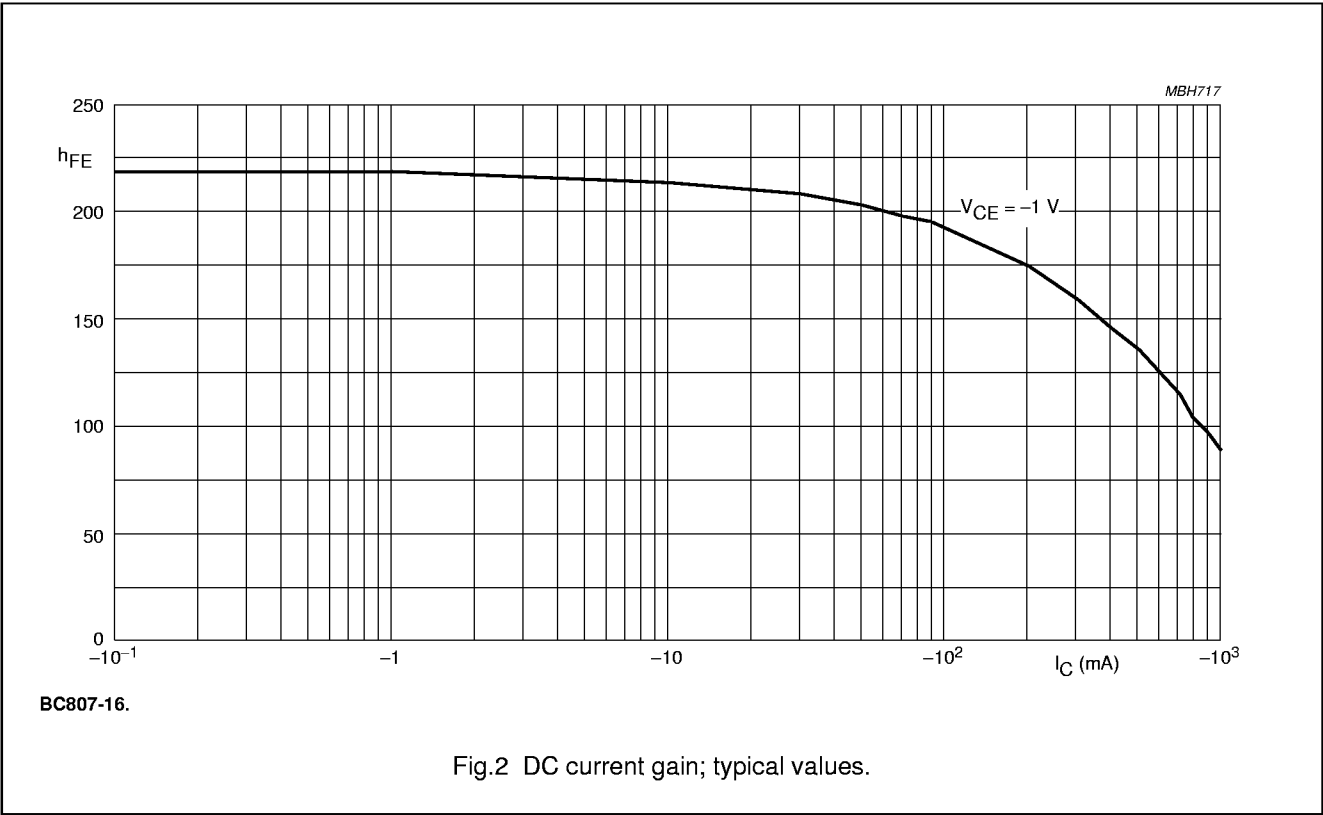
| SYMBOL      | PARAMETER                            | CONDITIONS                                                                  | MIN. | TYP. | MAX. | UNIT          |
|-------------|--------------------------------------|-----------------------------------------------------------------------------|------|------|------|---------------|
| $I_{CBO}$   | collector cut-off current            | $I_E = 0; V_{CB} = -20\text{ V}$                                            | —    | —    | –100 | nA            |
|             |                                      | $I_E = 0; V_{CB} = -20\text{ V}; T_j = 150\text{ °C}$                       | —    | —    | –5   | $\mu\text{A}$ |
| $I_{EBO}$   | emitter cut-off current              | $I_C = 0; V_{EB} = -5\text{ V}$                                             | —    | —    | –100 | nA            |
| $h_{FE}$    | DC current gain                      | $I_C = -100\text{ mA}; V_{CE} = -1\text{ V};$ note 1<br>see Figs 2, 3 and 4 | 100  | —    | 600  |               |
|             | BC807                                |                                                                             |      |      |      |               |
|             | BC807-16                             |                                                                             |      |      |      |               |
|             | BC807-25                             |                                                                             |      |      |      |               |
| $h_{FE}$    | DC current gain                      | $I_C = -500\text{ mA}; V_{CE} = -1\text{ V};$ note 1                        | 40   | —    | —    |               |
|             | BC807-40                             |                                                                             |      |      |      |               |
| $V_{CEsat}$ | collector-emitter saturation voltage | $I_C = -500\text{ mA}; I_B = -50\text{ mA};$ note 1                         | —    | —    | –700 | mV            |
| $V_{BE}$    | base-emitter voltage                 | $I_C = -500\text{ mA}; V_{CE} = -1\text{ V};$<br>notes 1 and 2              | —    | —    | –1.2 | V             |
| $C_c$       | collector capacitance                | $I_E = I_B = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$                    | —    | 9    | —    | pF            |
| $f_T$       | transition frequency                 | $I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$             | 80   | —    | —    | MHz           |

## Notes

1. Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .
2.  $V_{BE}$  decreases by about  $-2\text{ mV/K}$  with increasing temperature.

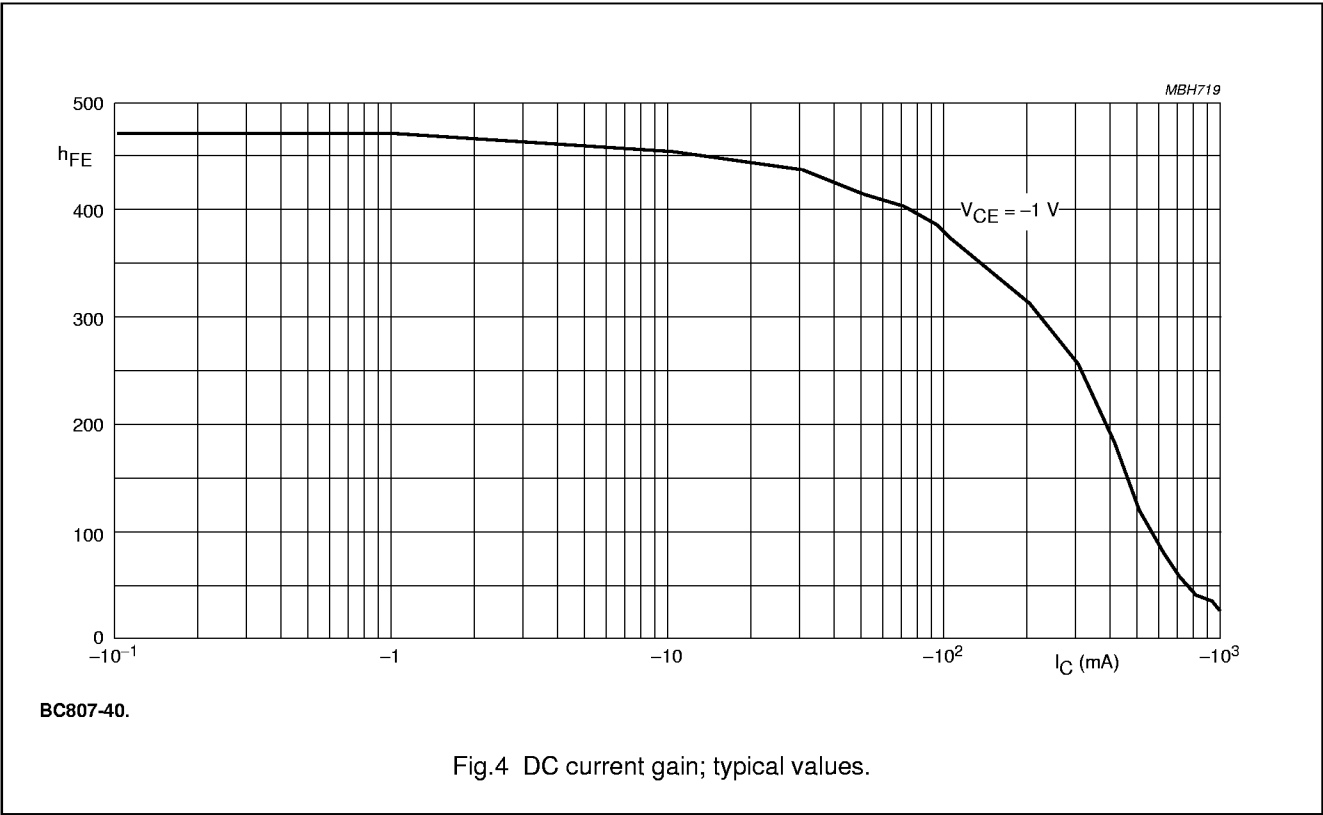
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23

