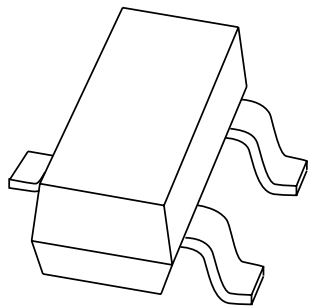


DATA SHEET



BF840

NPN medium frequency transistor

Product specification
Supersedes data of 1998 Dec 02

1999 Apr 12

NPN medium frequency transistor

BF840

FEATURES

- Low current (max. 25 mA)
- Low voltage (max. 40 V).

APPLICATIONS

- AM mixers
- IF amplifiers in AM/FM receivers.

DESCRIPTION

NPN medium frequency transistor in a SOT23 plastic package.

MARKING

| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| BF840 | NC* |

Note

- * = p : Made in Hong Kong.
* = t : Made in Malaysia.

PINNING

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

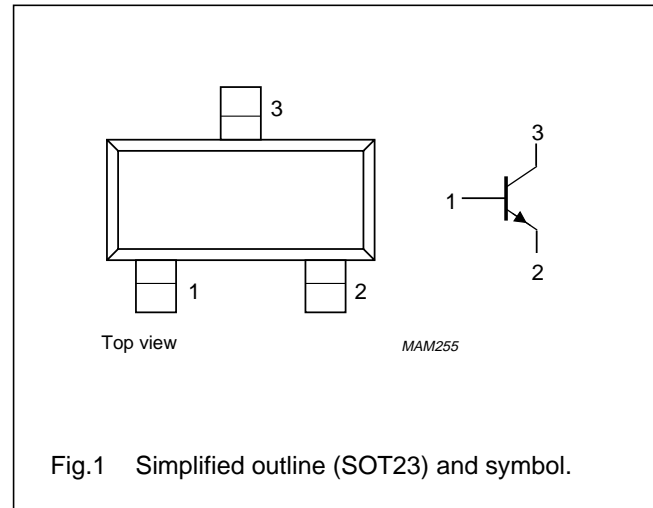


Fig.1 Simplified outline (SOT23) and symbol.

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 | – | 40 | V |
| V_{CEO} | collector-emitter voltage | open base | – | 40 | V |
| V_{EBO} | emitter-base voltage | open collector | – | 4 | V |
| I_C | collector current (DC) | | – | 25 | mA |
| I_{CM} | peak collector current | | – | 25 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1 | – | 250 | mW |
| T_{stg} | storage temperature | | –65 | +150 | $^\circ\text{C}$ |
| T_j | junction temperature | | – | 150 | $^\circ\text{C}$ |
| T_{amb} | operating ambient temperature | | –65 | +150 | $^\circ\text{C}$ |

Note

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

NPN medium frequency transistor

BF840

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_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = 4\text{ V}$ | – | – | 100 | nA |
| h_{FE} | DC current gain | $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$ | 67 | – | 222 | |
| V_{BE} | base-emitter voltage | $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$ | 675 | 725 | 775 | mV |
| C_{re} | feedback capacitance | $I_C = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$ | – | 0.3 | – | pF |
| f_T | transition frequency | $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$ | – | 380 | – | MHz |

NPN medium frequency transistor

BF840

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



NPN medium frequency transistor

BF840

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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NPN medium frequency transistor

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NOTES

NPN medium frequency transistor

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NOTES

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