



**THE DATASHEET OF
BF824W,135**



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Should be replaced with:

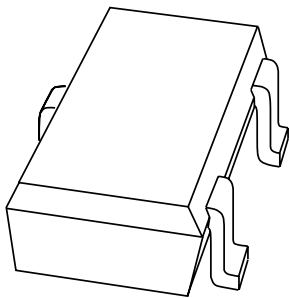
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Kind regards,

Team Nexperia

DATA SHEET



BF824W

PNP medium frequency transistor

Product data sheet
Supersedes data of 1997 Jul 07

1999 Apr 15

PNP medium frequency transistor

BF824W

FEATURES

- Low current (max. 25 mA)
- Low voltage (max. 30 V).

APPLICATIONS

- RF stages in FM front-ends in common base configuration.

DESCRIPTION

PNP medium frequency transistor in a SOT323 plastic package.

MARKING

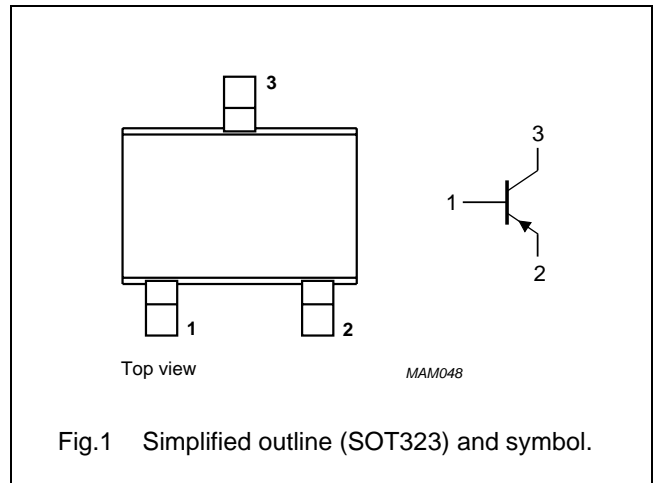
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| BF824W | F8* |

Note

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

PINNING

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



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 | - | -30 | V |
| V _{CEO} | collector-emitter voltage | open base | - | -30 | 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} ≤ 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 |

Note

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

PNP medium frequency transistor

BF824W

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 625 | K/W |

Note

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

CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|---------------------------|--|------|------|---------------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = -30\text{ V}$ | – | –50 | nA |
| | | $I_E = 0; V_{CB} = -30\text{ V}; T_j = 150\text{ °C}$ | – | –10 | μA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = -4\text{ V}$ | – | –100 | nA |
| h_{FE} | DC current gain | $I_C = -1\text{ mA}; V_{CE} = -10\text{ V}$ | 25 | – | |
| | | $I_C = -4\text{ mA}; V_{CE} = -10\text{ V}$ | 25 | – | |
| V_{BE} | base-emitter voltage | $I_C = -4\text{ mA}; V_{CE} = -10\text{ V}$ | – | –900 | mV |
| C_{rb} | feedback capacitance | $I_C = 0; V_{CE} = -10\text{ V}; f = 1\text{ MHz}$ | – | 0.3 | pF |
| f_T | transition frequency | $V_{CE} = -10\text{ V}; f = 100\text{ MHz}; \text{note 1}$ | | | |
| | | $I_C = -1\text{ mA}$ | 250 | – | MHz |
| | | $I_C = -4\text{ mA}$ | 400 | – | MHz |
| | | $I_C = -8\text{ mA}$ | 390 | – | MHz |

Note

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

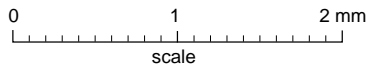
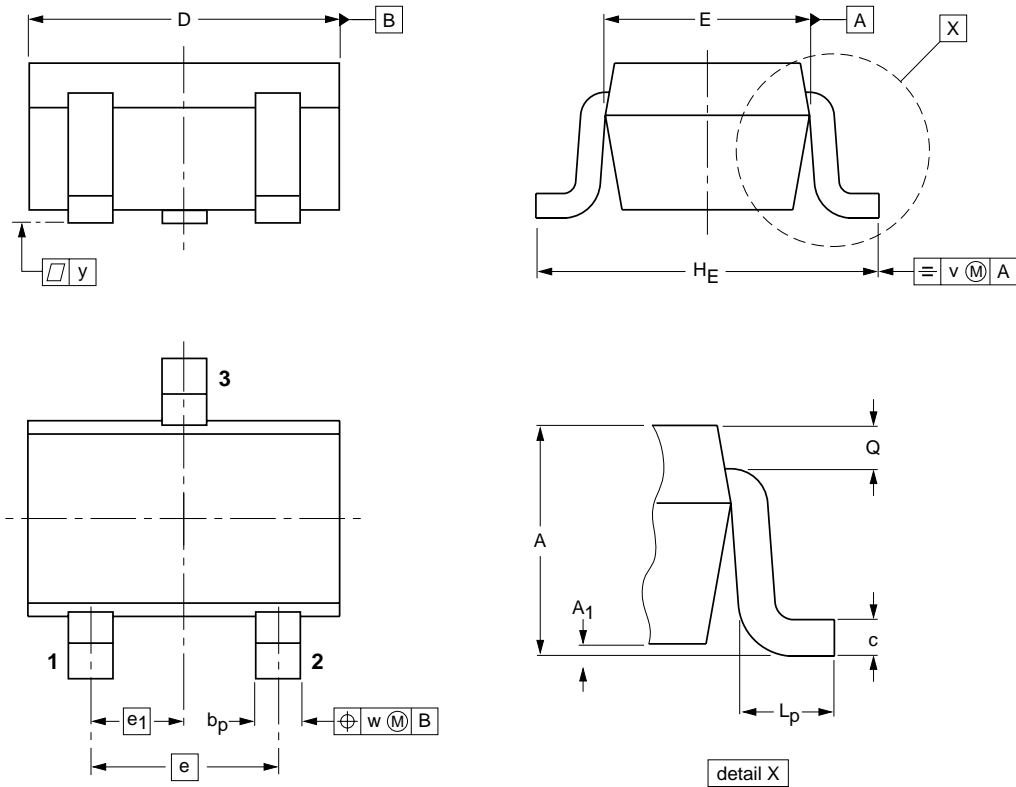
PNP medium frequency transistor

BF824W

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



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 |
|------|------------|-----------------------|----------------|--------------|------------|--------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm | 1.1 0.8 | 0.1 | 0.4 0.3 | 0.25 0.10 | 2.2 1.8 | 1.35 1.15 | 1.3 | 0.65 | 2.2 2.0 | 0.45 0.15 | 0.23 0.13 | 0.2 | 0.2 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|-----------------|------------|-------|-------|--|---------------------|------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT323 | | | SC-70 | | | 97-02-28 |

PNP medium frequency transistor

BF824W

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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NXP Semiconductors

Customer notification

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