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Should be replaced with:

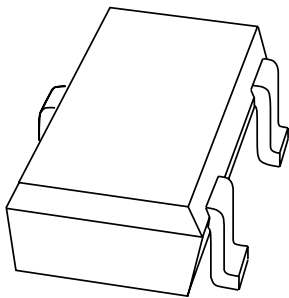
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)). Thank you for your cooperation and understanding,

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

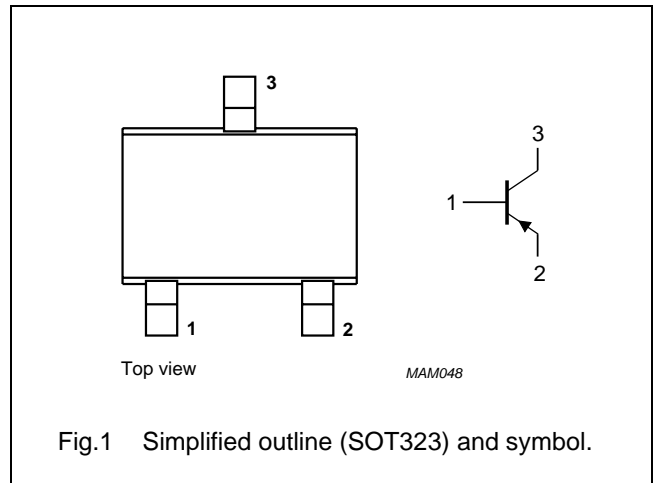
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BF824W	F8*

### 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 <sub>CBO</sub>	collector-base voltage	open emitter	-	-30	V
V <sub>CEO</sub>	collector-emitter voltage	open base	-	-30	V
V <sub>EBO</sub>	emitter-base voltage	open collector	-	-4	V
I <sub>C</sub>	collector current (DC)		-	-25	mA
I <sub>CM</sub>	peak collector current		-	-25	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	-	200	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
T <sub>j</sub>	junction temperature		-	150	°C
T <sub>amb</sub>	operating ambient temperature		-65	+150	°C

### Note

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

## PNP medium frequency transistor

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## 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	$\mu\text{A}$
$I_{EBO}$	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	$V_{CE} = -10\text{ V}; f = 100\text{ MHz};$ 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:  $t_p \leq 300\ \mu\text{s}; \delta \leq 0.02$ .

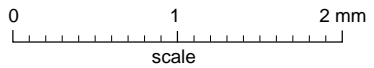
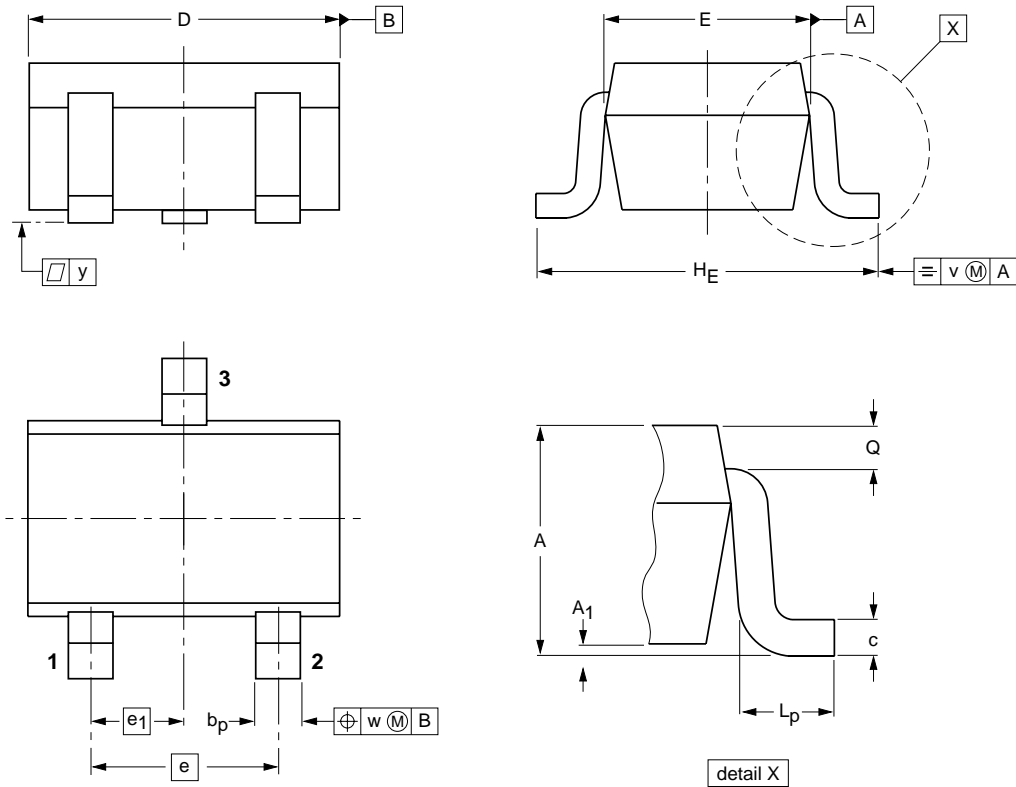
PNP medium frequency transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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

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## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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.

## Notes

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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

For additional information please visit: <http://www.nxp.com>

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