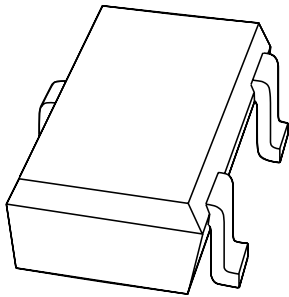


DATA SHEET



BF824W PNP medium frequency transistor

Product specification
Supersedes data of September 1994
File under Discrete Semiconductors, SC04

1997 Jul 07

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

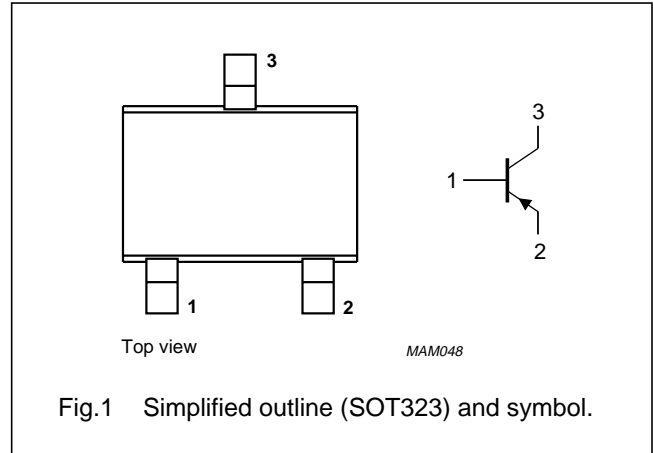
PNP medium frequency transistor in a SOT323 plastic package.

MARKING

TYPE NUMBER	MARKING CODE
BF824W	F8t

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–30	V
V_{CEO}	collector-emitter voltage	open base	–	–30	V
I_{CM}	peak collector current		–	–25	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	200	mW
h_{FE}	DC current gain	$I_C = -4\text{ mA}; V_{CE} = -10\text{ V}$	25	–	
f_T	transition frequency	$I_C = -4\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	400	–	MHz

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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	$T_{amb} \leq 25\text{ °C}$; 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.

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

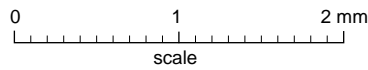
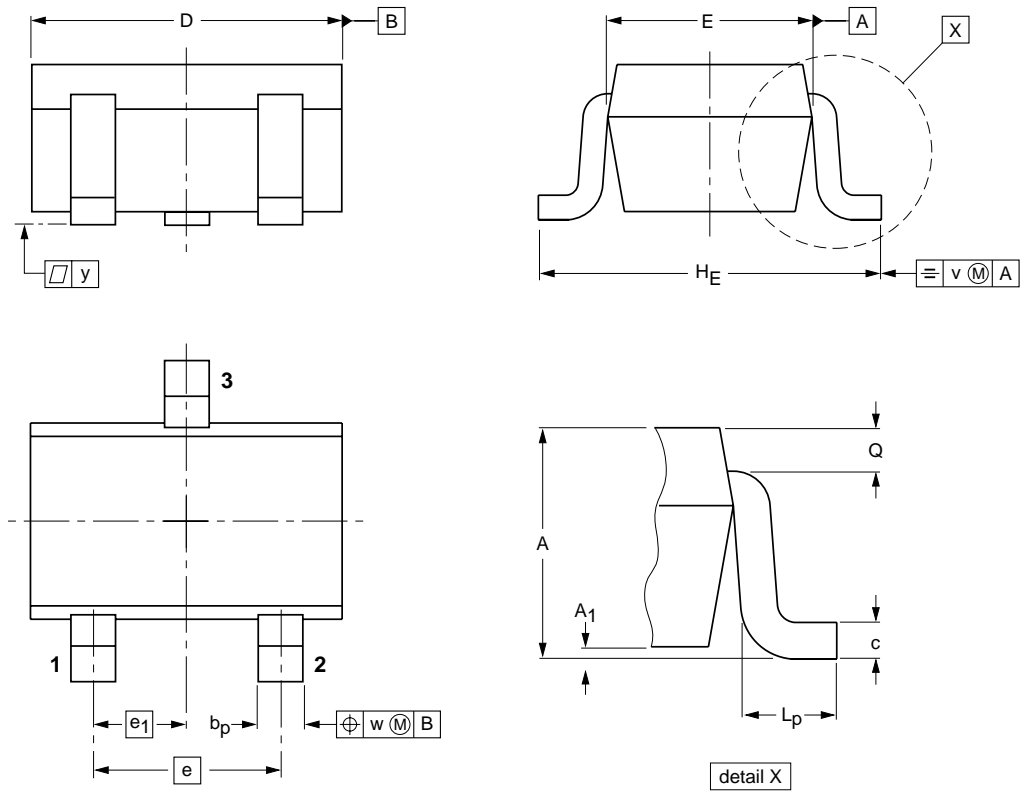
PNP medium frequency transistor

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

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.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

PNP medium frequency transistor

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NOTES

PNP medium frequency transistor

BF824W

NOTES

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