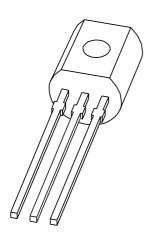
## **DISCRETE SEMICONDUCTORS**

# DATA SHEET



# **BF324**PNP medium frequency transistor

Product specification Supersedes data of September 1994 File under Discrete Semiconductors, SC04 1997 Jul 07





## PNP medium frequency transistor

**BF324** 

### **FEATURES**

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

#### **APPLICATIONS**

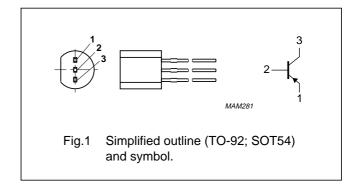
• RF stages in FM front-ends in common base configuration.

#### **DESCRIPTION**

PNP medium frequency transistor in a TO-92; SOT54 plastic package.

#### **PINNING**

PIN	DESCRIPTION
1	emitter
2	base
3	collector



### **QUICK REFERENCE DATA**

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter	_	_	-30	V
$V_{CEO}$	collector-emitter voltage	open base	_	_	-30	V
I <sub>CM</sub>	peak collector current		_	_	-25	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	_	_	300	mW
h <sub>FE</sub>	DC current gain	$I_C = -4 \text{ mA}; V_{CE} = -10 \text{ V}$	25	_	_	
f <sub>T</sub>	transition frequency	$I_C = -4 \text{ mA}; V_{CE} = -10 \text{ V}; f = 100 \text{ MHz}$	_	450	_	MHz

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### **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
$V_{CEO}$	collector-emitter voltage	open base	_	-30	V
$V_{EBO}$	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	_	300	mW
T <sub>stg</sub>	storage temperature		<b>–65</b>	+150	°C
Tj	junction temperature		_	150	°C
T <sub>amb</sub>	operating ambient temperature		-65	+150	°C

#### Note

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

#### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	420	K/W

#### Note

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

### **CHARACTERISTICS**

 $T_i = 25$  °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current	$I_E = 0; V_{CB} = -30 \text{ V}$	_	_	-50	nA
I <sub>EBO</sub>	emitter cut-off current	$I_C = 0; V_{EB} = -4 V$	_	_	-100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = -10 V				
		$I_C = -1 \text{ mA}$	_	45	_	
		$I_C = -4 \text{ mA}$	25	_	_	
$V_{BE}$	base-emitter voltage	$I_C = -4 \text{ mA}; V_{CE} = -10 \text{ V}$	-	760	_	mV
$C_{rb}$	feedback capacitance	$I_C = 0$ ; $V_{CE} = -10 \text{ V}$ ; $f = 1 \text{ MHz}$	_	_	0.3	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = −10 V; f = 100 MHz				
		$I_C = -1 \text{ mA}$	_	350	_	MHz
		$I_C = -4 \text{ mA}$	400	450	_	MHz
		$I_C = -8 \text{ mA}$	_	440	_	MHz

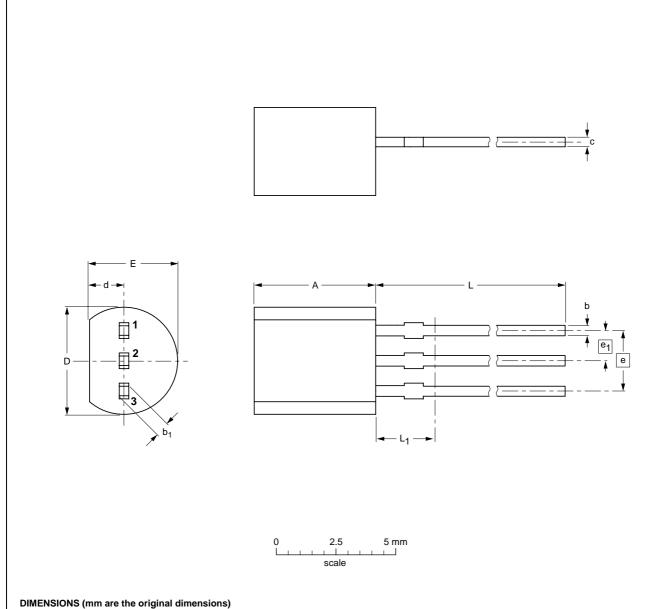
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### **PACKAGE OUTLINE**

Plastic single-ended leaded (through hole) package; 3 leads

SOT54



UNIT	A	b	b <sub>1</sub>	С	D	d	E	е	e <sub>1</sub>	L	L <sub>1</sub> <sup>(1)</sup>
mm	5.2 5.0	0.48 0.40	0.66 0.56	0.45 0.40	4.8 4.4	1.7 1.4	4.2 3.6	2.54	1.27	14.5 12.7	2.5

1. Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

OUTLINE		REFER	ENCES	EUROPEAN	ISSUE DATE
VERSION	IEC	JEDEC	EIAJ	PROJECTION	ISSUE DATE
SOT54		TO-92	SC-43		97-02-28

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#### **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.

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NOTES

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NOTES

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