

# DATA SHEET



**BF450**

**PNP medium frequency transistor**

Product specification  
Supersedes data of 1997 Jul 11

2004 Nov 11

# PNP medium frequency transistor

**BF450**

## FEATURES

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

## APPLICATIONS

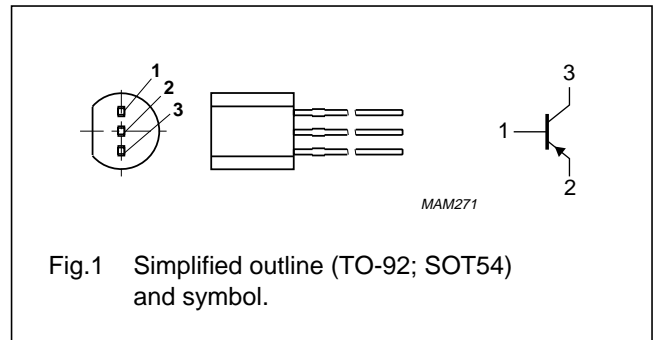
- HF and IF stages in radio receivers
- Mixer stages in AM receivers.

## DESCRIPTION

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

## PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BF450	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	–	–40	V
$V_{CEO}$	collector-emitter voltage	open base	–	–40	V
$I_{CM}$	peak collector current		–	–25	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$	–	300	mW
$h_{FE}$	DC current gain	$V_{CE} = -10\text{ V}; I_C = -1\text{ mA}$	50	–	
$f_T$	transition frequency	$V_{CE} = -10\text{ V}; I_C = -1\text{ mA}; f = 100\text{ MHz}$	350	–	MHz

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**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

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	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	300	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	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	420	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-base cut-off current	$V_{CB} = -30\text{ V}$ ; $I_E = 0\text{ A}$	–	–50	nA
		$V_{CB} = -30\text{ V}$ ; $I_E = 0\text{ A}$ ; $T_j = 150\text{ °C}$	–	–4	$\mu\text{A}$
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = -3\text{ V}$ ; $I_C = 0\text{ A}$	–	–100	nA
$h_{FE}$	DC current gain	$V_{CE} = -10\text{ V}$ ; $I_C = -1\text{ mA}$	50	–	
$V_{BE}$	base-emitter voltage	$V_{CE} = -10\text{ V}$ ; $I_C = -1\text{ mA}$	–680	–780	mV
$C_{re}$	feedback capacitance	$V_{CB} = -10\text{ V}$ ; $I_C = 0\text{ A}$ ; $f = 1\text{ MHz}$	–	0.55	pF
$f_T$	transition frequency	$V_{CE} = -10\text{ V}$ ; $I_C = -1\text{ mA}$ ; $f = 100\text{ MHz}$	350	–	MHz

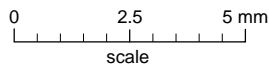
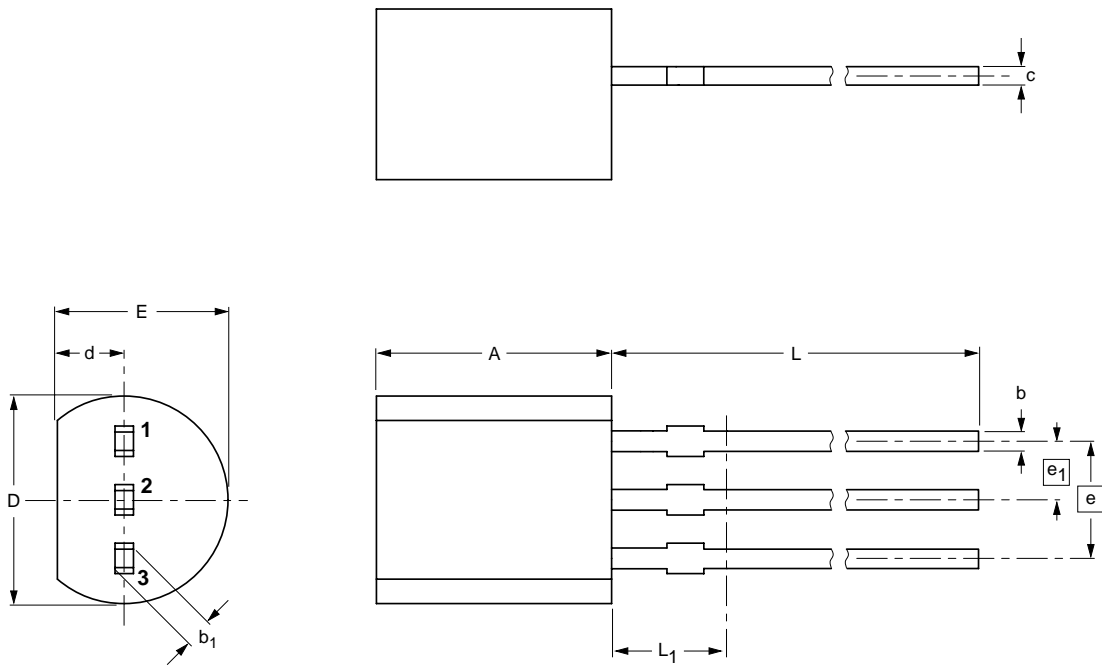
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PACKAGE OUTLINE

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

SOT54



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b <sub>1</sub>	c	D	d	E	e	e <sub>1</sub>	L	L <sub>1</sub> <sup>(1)</sup> max.
mm	5.2 5.0	0.48 0.40	0.66 0.55	0.45 0.38	4.8 4.4	1.7 1.4	4.2 3.6	2.54	1.27	14.5 12.7	2.5

Note

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

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT54		TO-92	SC-43A		-97-02-28 04-06-28

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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Printed in The Netherlands

R75/03/pp6

Date of release: 2004 Nov 11

Document order number: 9397 750 13586

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