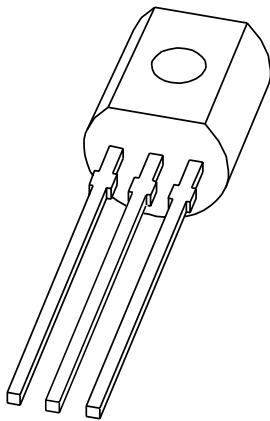


# DATA SHEET



**BF240**

**NPN medium frequency transistor**

Product specification  
Supersedes data of 1999 Apr 21

2004 Nov 05

# NPN medium frequency transistor

# BF240

### FEATURES

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

### APPLICATIONS

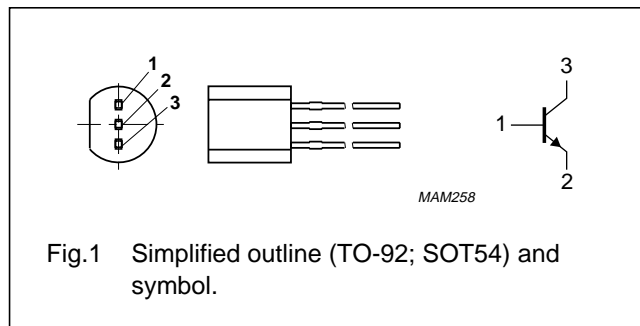
- AM mixers
- IF amplifiers in AM/FM receivers.

### DESCRIPTION

NPN 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
BF240	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54

## NPN medium frequency transistor

BF240

**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.	TYP.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$V_{CB} = 20\text{ V}$ ; $I_E = 0\text{ A}$	–	–	100	nA
		$V_{CB} = 20\text{ V}$ ; $I_E = 0\text{ A}$ ; $T_{amb} = 150\text{ °C}$	–	–	4	$\mu\text{A}$
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = 4\text{ V}$ ; $I_C = 0\text{ A}$	–	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 10\text{ V}$ ; $I_C = 1\text{ mA}$	67	–	220	
$V_{BE}$	base-emitter voltage	$V_{CE} = 10\text{ V}$ ; $I_C = 1\text{ mA}$	675	725	775	mV
$C_{re}$	feedback capacitance	$V_{CB} = 10\text{ V}$ ; $I_C = 0\text{ A}$ ; $f = 1\text{ MHz}$	–	–	0.5	pF
$f_T$	transition frequency	$V_{CE} = 10\text{ V}$ ; $I_C = 1\text{ mA}$ ; $f = 100\text{ MHz}$	150	–	–	MHz

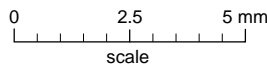
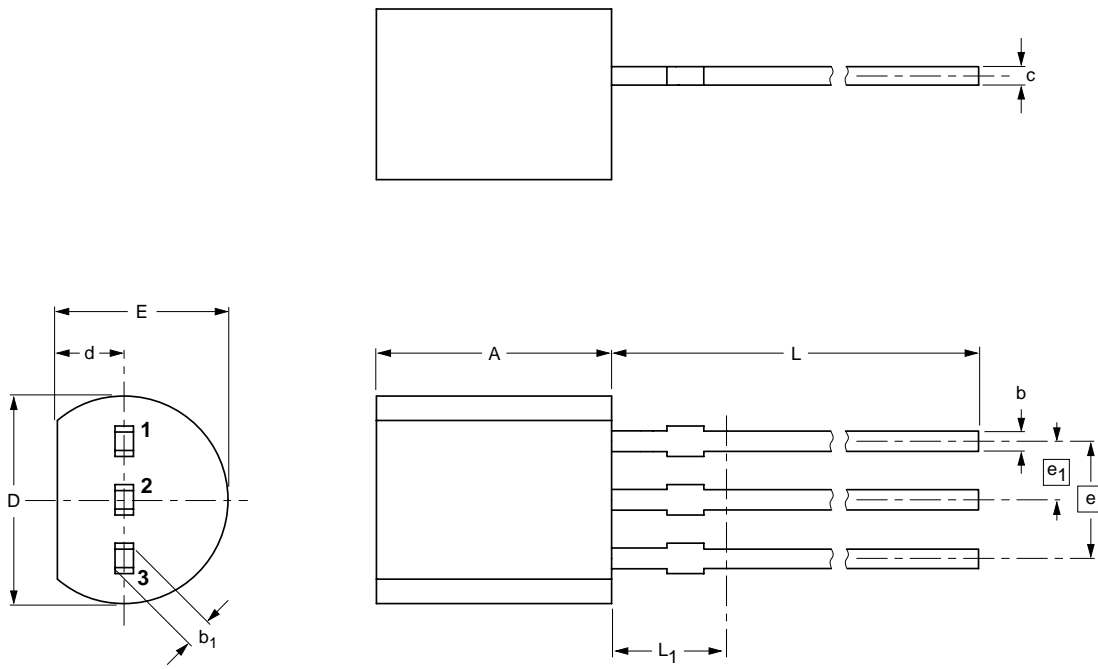
NPN medium frequency transistor

BF240

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

## NPN medium frequency transistor

BF240

## 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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**Limiting values definition** — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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