

# DATA SHEET



**BF240**

**NPN medium frequency transistor**

Product specification  
Supersedes data of 1998 Dec 02

1999 Apr 21

## NPN medium frequency transistor

BF240

## FEATURES

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

## APPLICATIONS

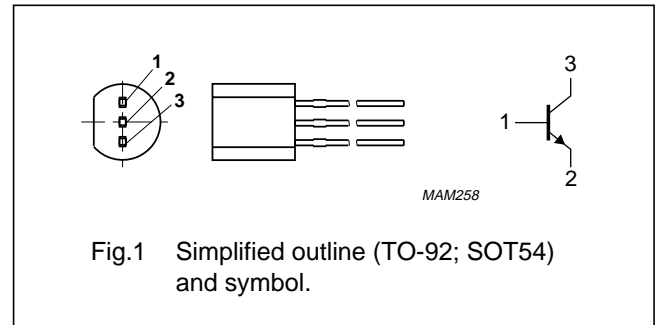
- AM mixers
- IF amplifiers in AM/FM receivers.

## DESCRIPTION

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

## PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CB0}$	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
$T_{amb}$	operating ambient temperature		–65	+150	°C

## Note

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

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

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	EIAJ		
SOT54		TO-92	SC-43		97-02-28

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**DEFINITIONS**

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
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**NOTES**

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**NOTES**

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