DATA SHEET

BF763

NPN 2 GHz wideband transistor

Product specification

File under Discrete Semiconductors, SC14

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Philips
Semiconductors

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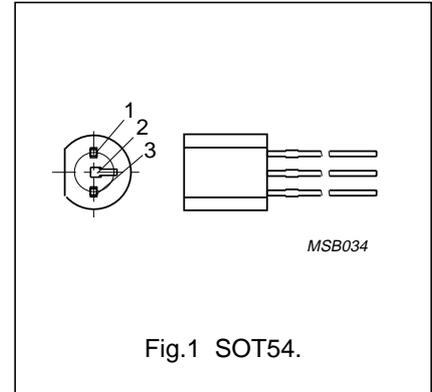
NPN 2 GHz wideband transistor

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DESCRIPTION

NPN transistor in a plastic SOT54 (TO-92 variant) envelope.

It is primarily intended for use in RF amplifiers and oscillators.

PINNING

PIN	DESCRIPTION
	Code: F763
1	emitter
2	base
3	collector

MSB034

Fig.1 SOT54.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base	15	–	–	V
I_C	DC collector current		–	–	25	mA
P_{tot}	total power dissipation	up to $T_{amb} = 60\ °C$	–	–	360	mW
h_{FE}	DC current gain	$I_C = 5\ mA$; $V_{CE} = 10\ V$; $T_j = 25\ °C$	25	–	250	
f_T	transition frequency	$I_C = 5\ mA$; $V_{CE} = 10\ V$; f = 100 MHz	–	1.8	–	GHz

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	15	V
V_{CEO}	collector-emitter voltage	open base	–	25	V
I_C	DC collector current		–	25	mA
P_{tot}	total power dissipation	up to $T_{amb} = 60\ °C$	–	360	mW
T_{stg}	storage temperature		–65	150	°C
T_j	junction temperature		–	150	°C

THERMAL RESISTANCE

SYMBOL	PARAMETER	CONDITIONS	THERMAL RESISTANCE
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air	250 K/W

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CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

| SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CEO}$	collector-emitter breakdown voltage	I_C = 1 mA; I_B = 0	15	–	–	V
$V_{(BR)CBO}$	collector-base breakdown voltage	I_C = 10 μA; I_E = 0	25	–	–	V
$V_{CE\ sat}$	collector-emitter saturation voltage	I_C = 10 mA; I_B = 1 mA	–	–	0.5	V
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = 10 V	–	–	50	nA
h_{FE}	DC current gain	I_C = 5 mA; V_{CE} = 10 V	25	–	250	
f_T	transition frequency	I_C = 5 mA; V_{CE} = 10 V; f = 100 MHz	–	1.8	–	GHz
F	noise figure	I_C = 5 mA; V_{CE} = 10 V; f = 800 MHz; T_{amb} = 25 °C; Z_s = 60 Ω	–	5.0	–	dB

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PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; 3 leads (on-circle)　　　　　　**SOT54 variant**


```
0        2.5       5 mm
|_|_|_|_|_|_|_|_|_|_|
        scale
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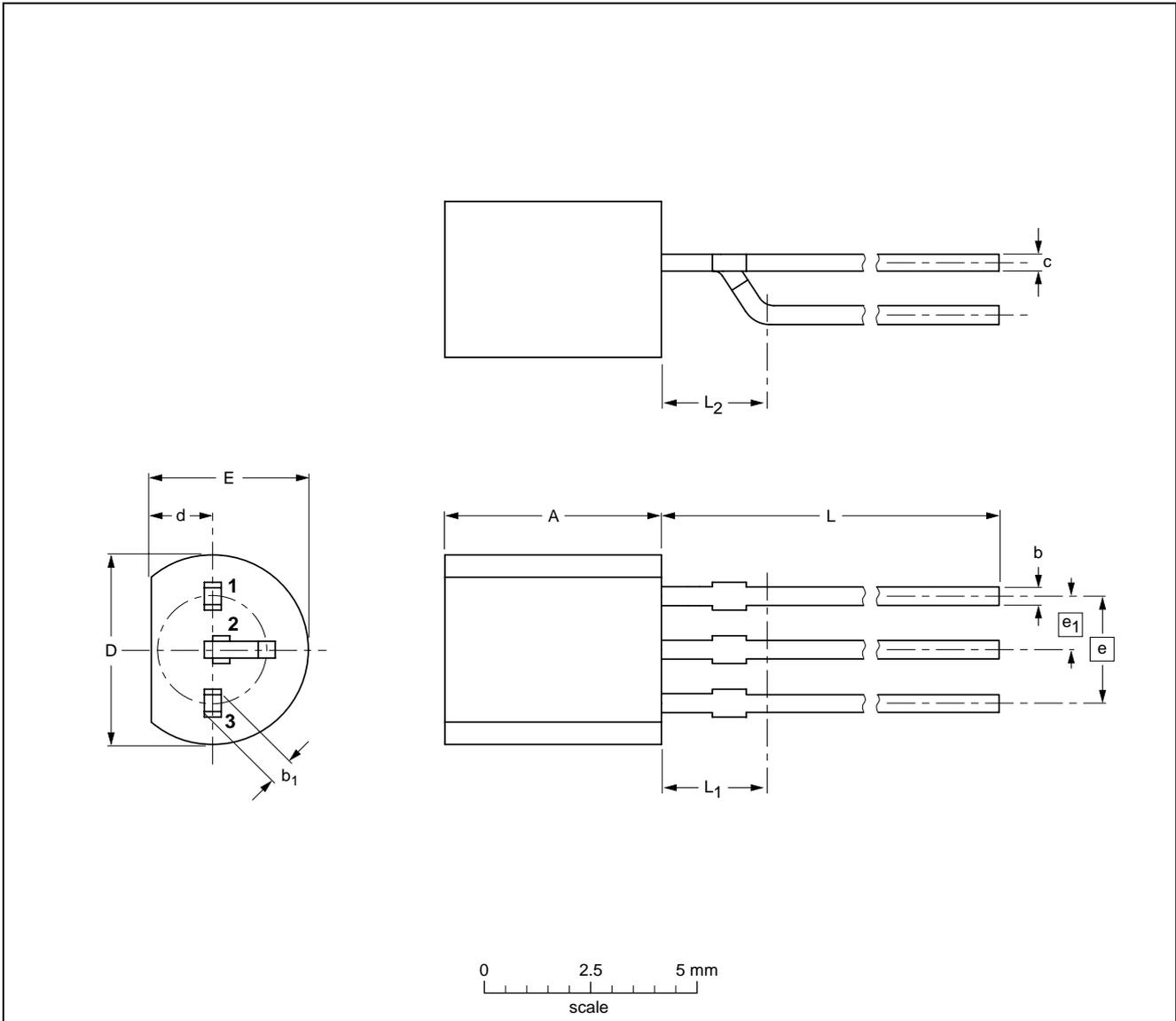
DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b₁	c	D	d	E	e	e₁	L	L₁(1) max	L₂ max
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	2.5

Notes

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 variant		TO-92	SC-43			97-04-14

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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

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