

# DATA SHEET

**BF763**

**NPN 2 GHz wideband transistor**

Product specification  
File under Discrete Semiconductors, SC14

September 1995

**NPN 2 GHz wideband transistor**

**BF763**

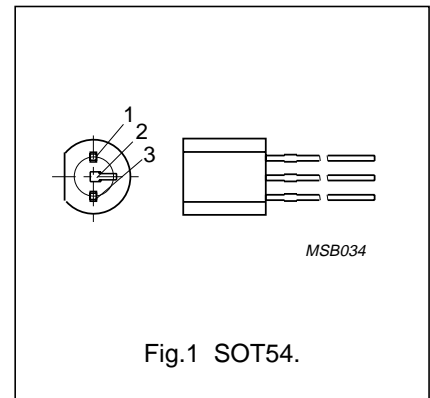
**DESCRIPTION**

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



**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 $T_{amb} = 60\text{ }^\circ\text{C}$	–	–	360	mW
$h_{FE}$	DC current gain	$I_C = 5\text{ mA}; V_{CE} = 10\text{ V}; T_j = 25\text{ }^\circ\text{C}$	25	–	250	
$f_T$	transition frequency	$I_C = 5\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	–	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 $T_{amb} = 60\text{ }^\circ\text{C}$	–	360	mW
$T_{stg}$	storage temperature		–65	150	$^\circ\text{C}$
$T_j$	junction temperature		–	150	$^\circ\text{C}$

**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** $T_j = 25\text{ °C}$  unless otherwise specified.

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

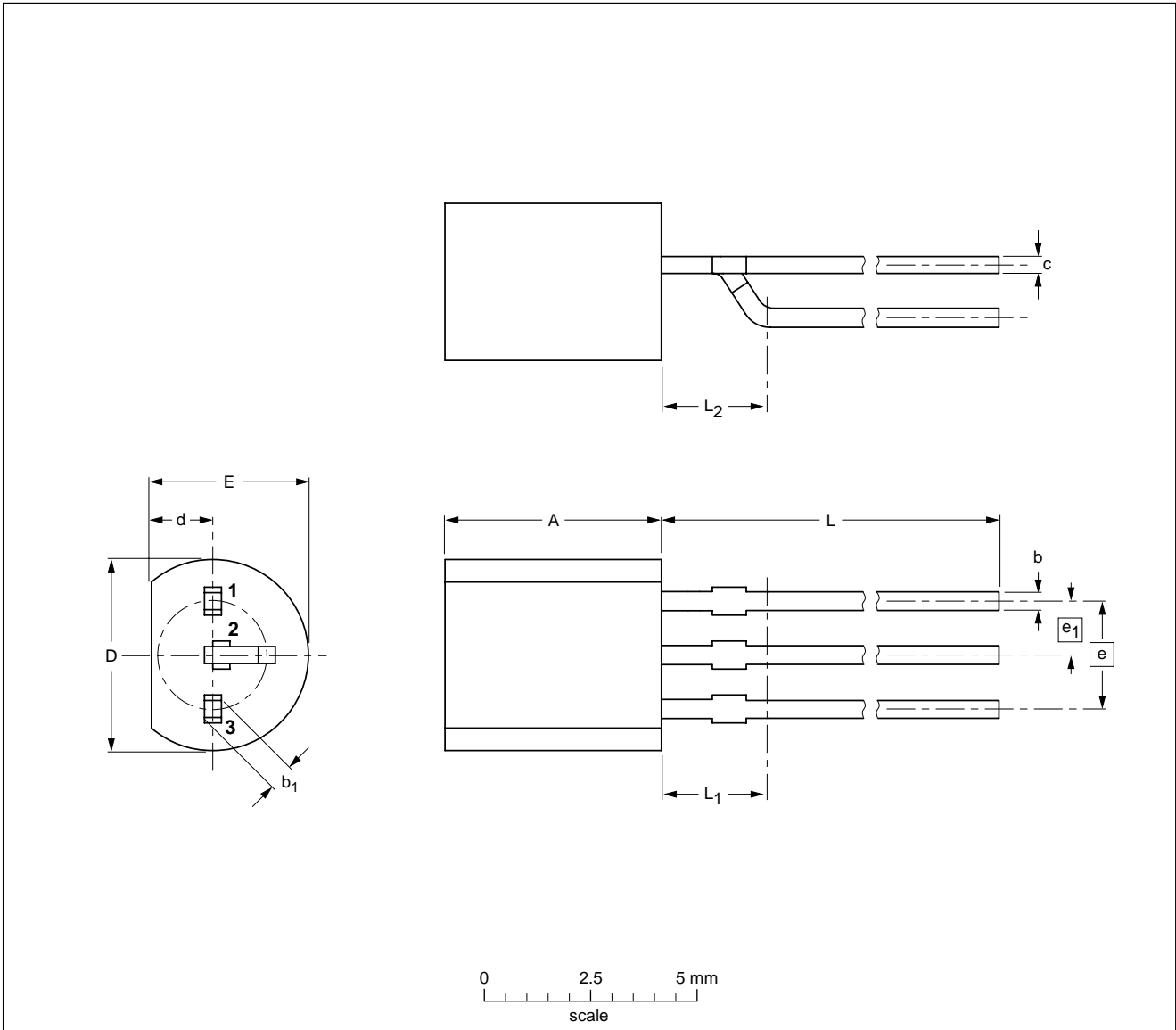
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PACKAGE OUTLINE

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

SOT54 variant



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	L <sub>2</sub> 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**

<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>	
Where application information is given, it is advisory and does not form part of the specification.	

**LIFE SUPPORT APPLICATIONS**

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