

DATA SHEET

BFQ151 PNP video transistor

Product specification
File under Discrete Semiconductors, SC05

1997 Sep 19

PNP video transistor

BFQ151

FEATURES

- High gain bandwidth
- Good thermal stability
- Gold metallization ensures excellent reliability.

APPLICATIONS

- Pre-stage driver between video amplifier and video module.

DESCRIPTION

PNP video transistor in a SOT54 plastic package.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter

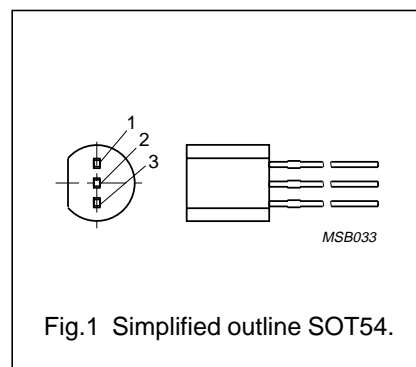


Fig.1 Simplified outline SOT54.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_{CB0}	collector-base voltage	open emitter	–	–20	V
I_C	collector current (DC)		–	–100	mA
P_{tot}	total power dissipation	$T_s \leq 60\text{ }^\circ\text{C}$	–	1.25	W
f_T	transition frequency	$I_C = -70\text{ mA}; V_{CE} = -10\text{ V}$	3.5	–	GHz
C_{re}	feedback capacitance	$I_C = 0; V_{CB} = -10\text{ V}$	1.8	–	pF
T_j	junction temperature		–	175	$^\circ\text{C}$

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	–	–20	V
V_{CEO}	collector-emitter voltage	open base	–	–15	V
V_{EBO}	emitter-base voltage	open collector	–	–3	V
I_C	collector current (DC)		–	–100	mA
P_{tot}	total power dissipation	$T_s \leq 60\text{ }^\circ\text{C};$ note 1; see Fig.2	–	1.25	W
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	175	$^\circ\text{C}$

Note

1. T_s is the temperature at the soldering point of the collector pin.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	$T_s \leq 60\text{ }^\circ\text{C}$; note 1	90	K/W

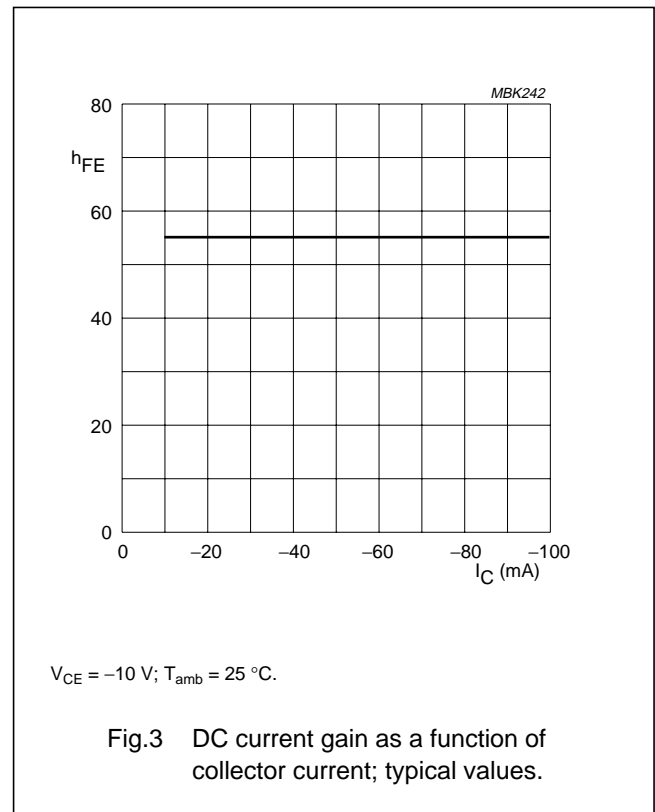
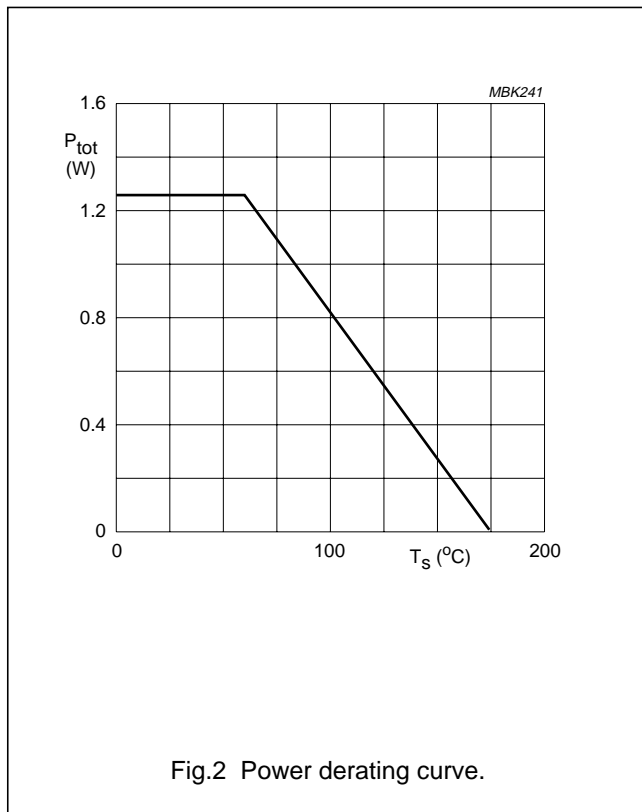
Note

- T_s is the temperature of the soldering point of the collector pin.

CHARACTERISTICS

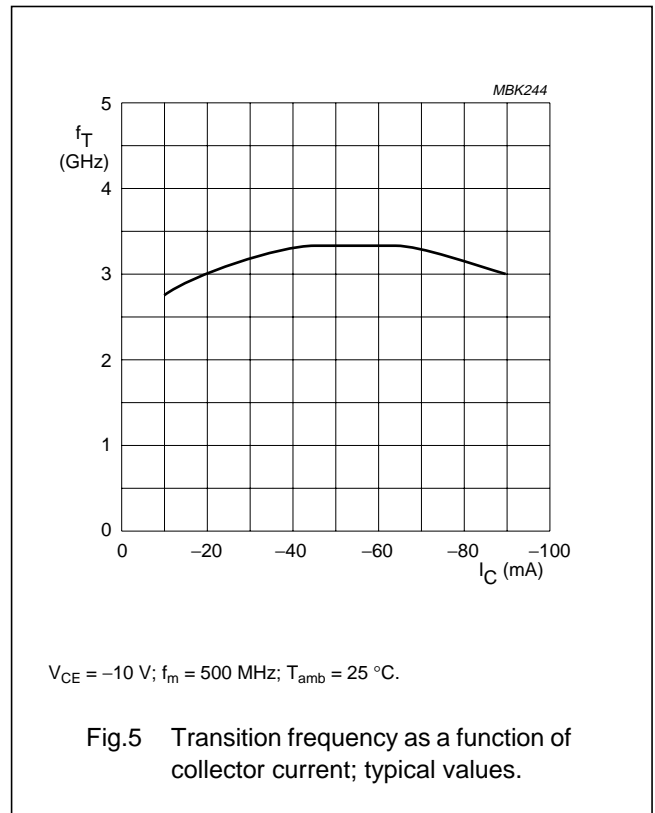
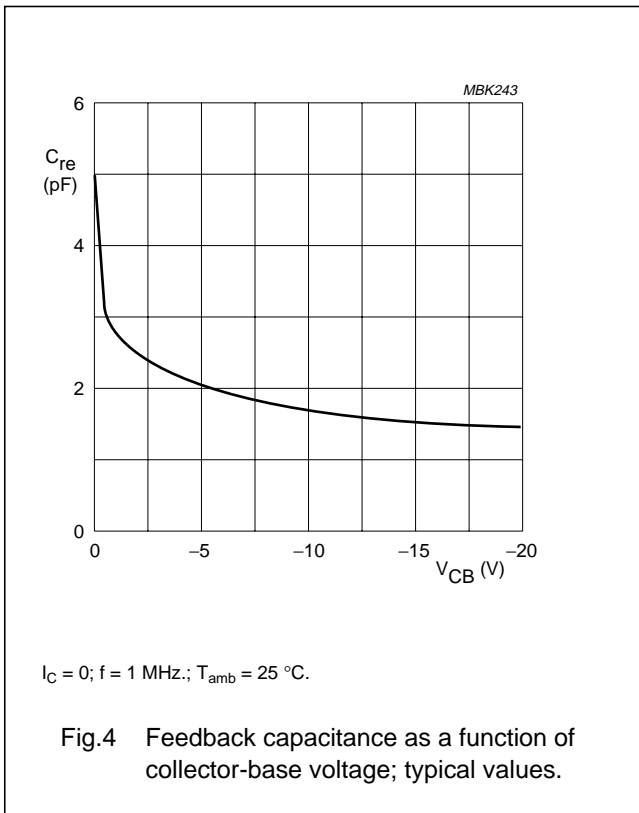
$T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	$I_C = -0.1\text{ mA}$; $I_E = 0$	-20	-	-	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	$I_C = -10\text{ mA}$; $I_B = 0$	-15	-	-	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	$I_C = 0$; $I_E = -0.1\text{ mA}$	-3	-	-	V
I_{CBO}	collector-base leakage current	$V_{CB} = -10\text{ V}$; $I_E = 0$	-	-	-1	μA
h_{FE}	DC current gain	$I_C = -70\text{ mA}$; $V_{CE} = -10\text{ V}$; see Fig.3	25	-	-	
f_T	transition frequency	$I_C = -70\text{ mA}$; $V_{CE} = -10\text{ V}$; $f_m = 500\text{ MHz}$; $T_{amb} = 25\text{ }^\circ\text{C}$; see Fig.5	-	3.5	-	GHz
C_{re}	feedback capacitance	$I_C = 0$; $V_{CB} = -10\text{ V}$; $f = 1\text{ MHz}$; see Fig.4	-	1.8	-	pF



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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 ₁	c	D	d	E	e	e ₁	L	L ₁ ⁽¹⁾
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

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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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