

DATA SHEET



BC368

**NPN medium power transistor;
20 V, 1 A**

Product specification
Supersedes data of 2003 Dec 01

2004 Nov 05

NPN medium power transistor; 20 V, 1 A

BC368

FEATURES

- High current.

APPLICATIONS

- Linear voltage regulators
- Low side switch
- Supply line switch for negative voltages
- MOSFET driver
- Audio (pre-) amplifier.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_{CEO}	collector-emitter voltage	–	20	V
I_C	collector current (DC)	–	1	A
I_{CM}	peak collector current	–	2	A
h_{FE}	DC current gain	85	375	–

DESCRIPTION

NPN medium power transistor (see “Simplified outline, symbol and pinning” for package details).

PRODUCT OVERVIEW

TYPE NUMBER	PACKAGE		MARKING CODE	PNP COMPLEMENT
	PHILIPS	EIAJ		
BC368	SOT54	SC-43A	C368	BC369

SIMPLIFIED OUTLINE, SYMBOL AND PINNING

TYPE NUMBER	SIMPLIFIED OUTLINE AND SYMBOL	PINNING	
		PIN	DESCRIPTION
BC368		1 2 3	base collector emitter

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BC368	SC-43A	plastic single-ended (through hole) package; 3 leads	SOT54

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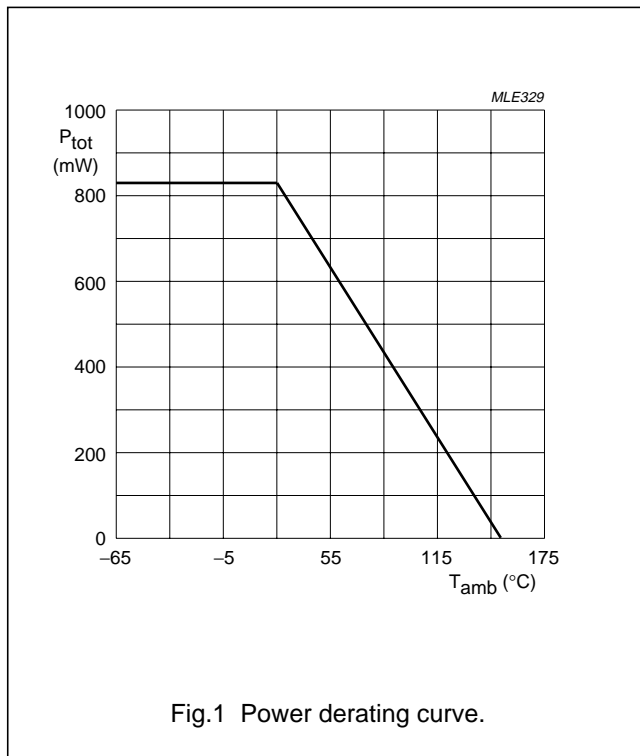
LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CB0}	collector-base voltage	open emitter	–	32	V
V _{CEO}	collector-emitter voltage	open base	–	20	V
V _{EBO}	emitter-base voltage	open collector	–	5	V
I _C	output current (DC)		–	1	mA
I _{CM}	peak collector current		–	2	mA
I _{BM}	peak collector current		–	200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; notes 1 and 2	–	0.83	W
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	150	°C
T _{amb}	ambient temperature		–65	+150	°C

Notes

1. Refer to SOT54 (SC-43A) standard mounting conditions.
2. Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated footprint.



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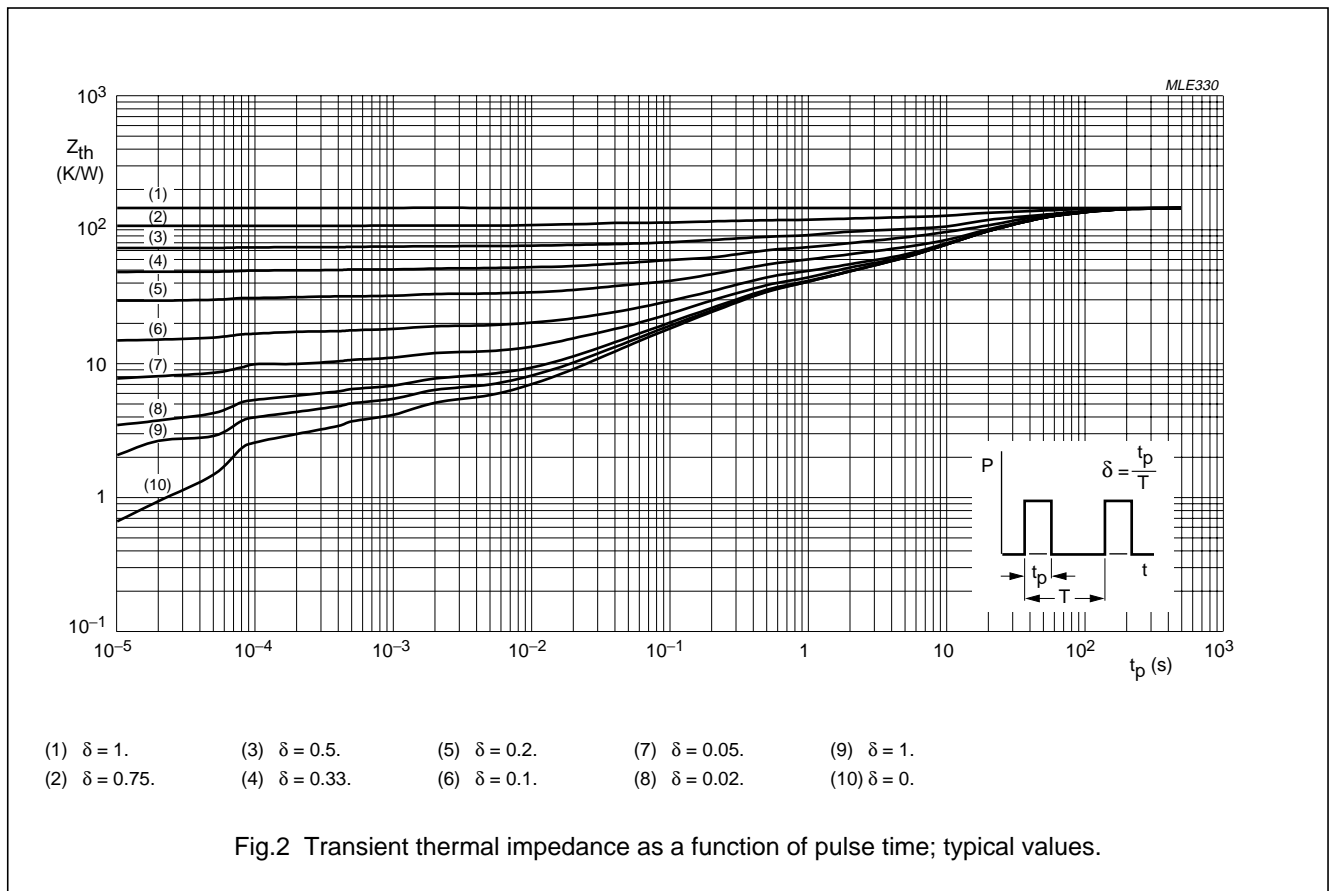
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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	$T_{amb} \leq 25\text{ }^\circ\text{C}$; notes 1 and 2	150	K/W

Notes

1. Refer to SOT54 (SC-43A) standard mounting conditions.
2. Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated footprint.



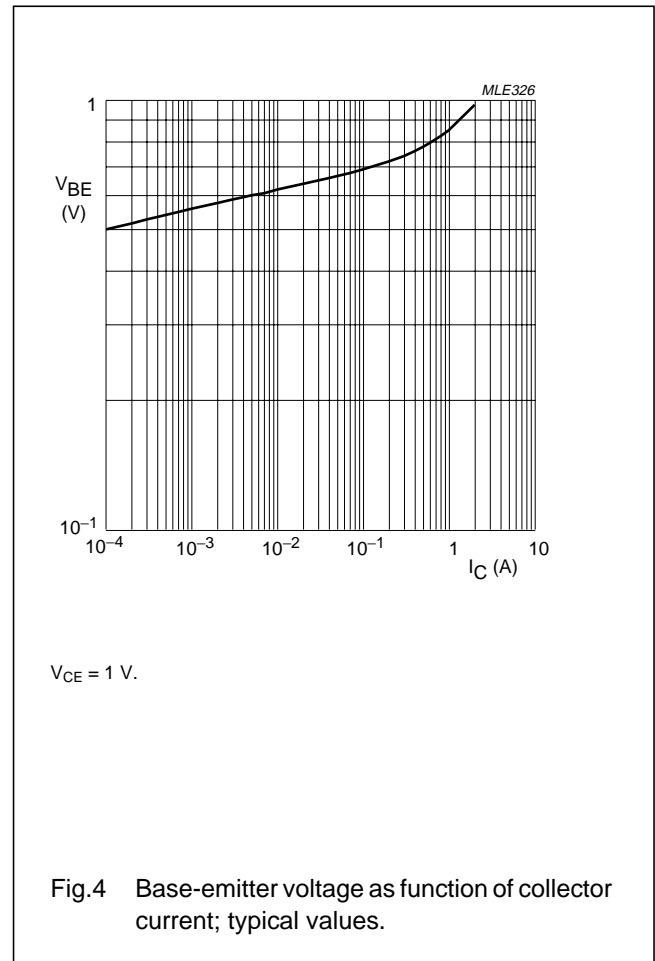
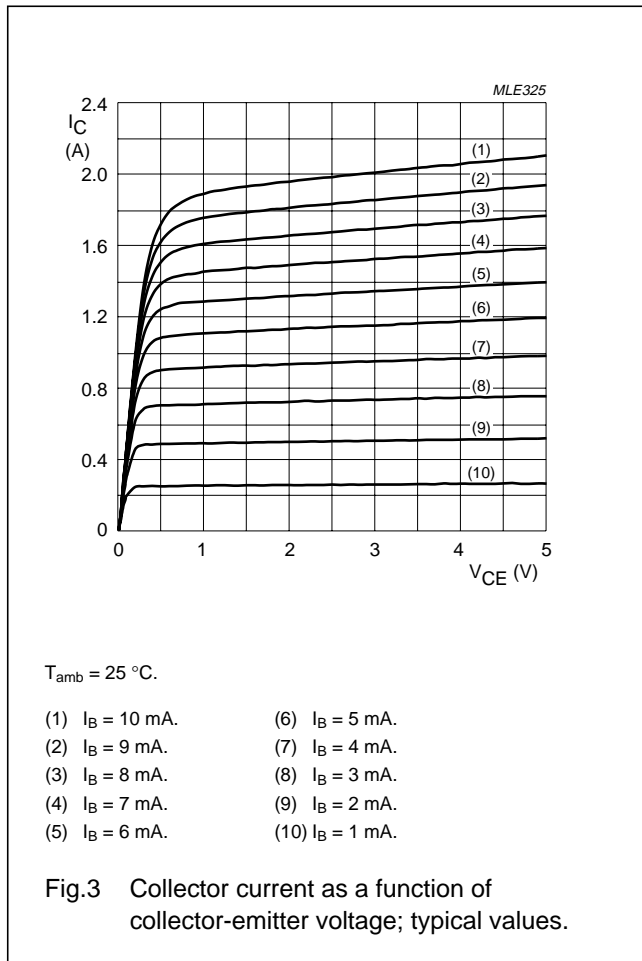
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CHARACTERISTICS

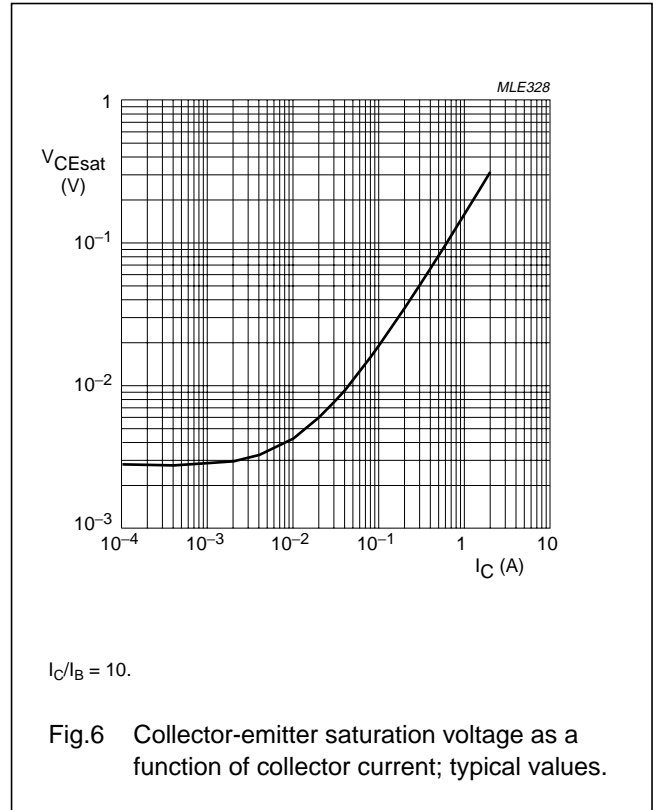
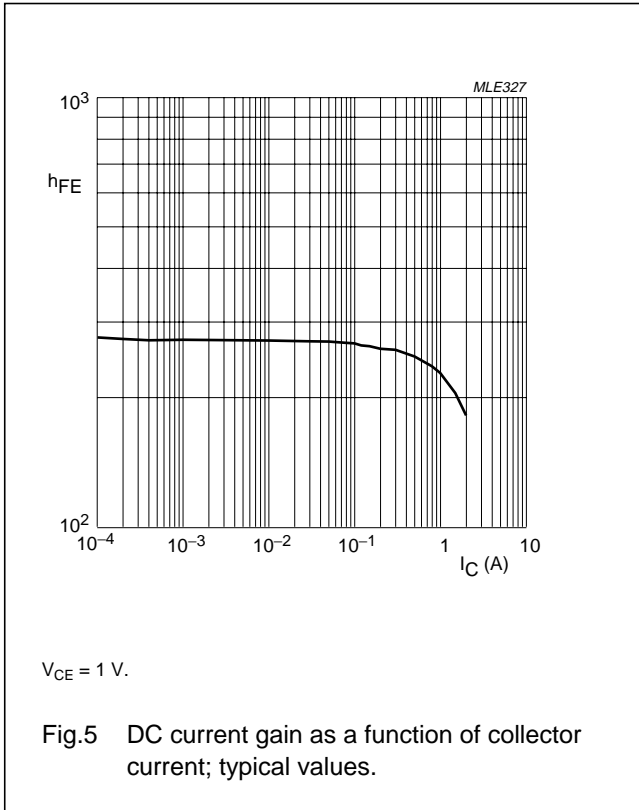
$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	$V_{CB} = 25\text{ V}; I_E = 0\text{ A}$	–	–	100	nA
		$V_{CB} = 25\text{ V}; I_E = 0\text{ A}; T_{amb} = 150\text{ }^{\circ}\text{C}$	–	–	10	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 5\text{ V}; I_C = 0\text{ A}$	–	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 10\text{ V}; I_C = 5\text{ mA}$	50	–	–	
		$V_{CE} = 1\text{ V}; I_C = 500\text{ mA}$	85	–	375	
		$V_{CE} = 1\text{ V}; I_C = 1\text{ mA}$	60	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 1\text{ A}; I_B = 100\text{ mA}$	–	–	500	mV
V_{BE}	base-emitter voltage	$V_{CE} = 10\text{ V}; I_C = 5\text{ mA}$	–	–	700	mV
		$V_{CE} = 1\text{ V}; I_C = 1\text{ A}$	–	–	1	V
C_c	collector capacitance	$V_{CB} = 10\text{ V}; I_E = i_e = 0\text{ A}; f = 1\text{ MHz}$	–	22	–	pF
f_T	transition frequency	$V_{CE} = 5\text{ V}; I_C = 50\text{ mA}; f = 100\text{ MHz}$	40	170	–	MHz



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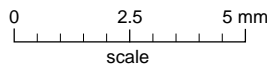
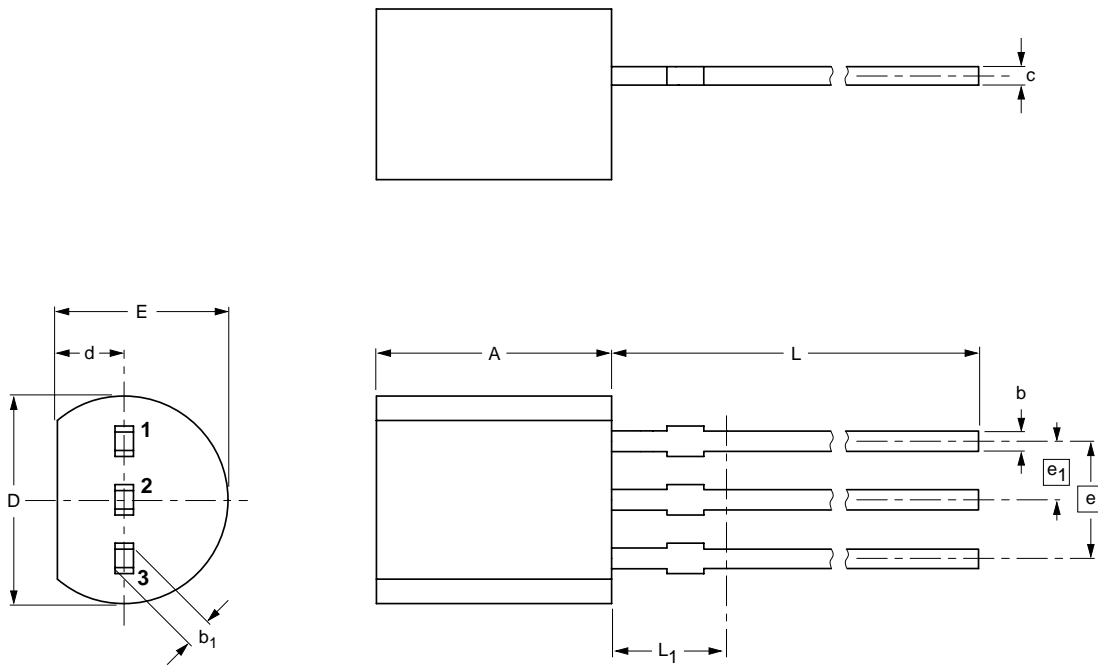
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PACKAGE OUTLINE

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⁾ 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

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LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	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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Contact information

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: sales.addresses@www.semiconductors.philips.com.

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