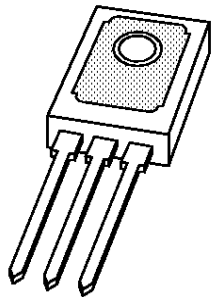


DATA SHEET



BF458; BF459 NPN high-voltage transistors

Product specification
Supersedes data of 1996 Dec 06

1999 Apr 21

NPN high-voltage transistors

BF458; BF459

FEATURES

- Low current (max. 100 mA)
- High voltage (max. 300 V).

APPLICATIONS

- Intended for video output stages in black-and-white and in colour television receivers.

DESCRIPTION

NPN transistors in a TO-126; SOT32 plastic package.

PINNING

PIN	DESCRIPTION
1	emitter
2	collector, connected to mounting base
3	base

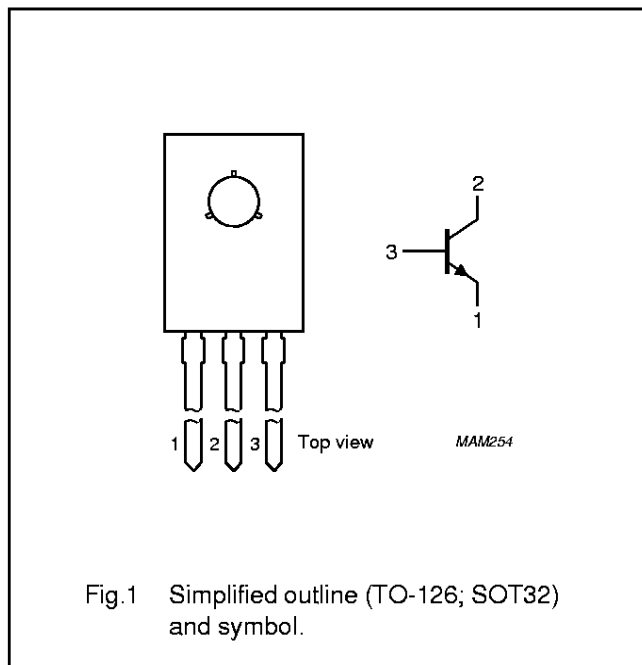


Fig.1 Simplified outline (TO-126; SOT32) and symbol.

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			
	BF458		–	250	V
	BF459		–	300	V
V _{CEO}	collector-emitter voltage	open base			
	BF458		–	250	V
	BF459		–	300	V
V _{EBO}	emitter-base voltage	open collector	–	5	V
I _C	collector current (DC)		–	100	mA
I _{CM}	peak collector current		–	300	mA
I _{BM}	peak base current		–	100	mA
P _{tot}	total power dissipation	T _{mb} ≤ 90 °C	–	6	W
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	150	°C
T _{amb}	operating ambient temperature		–65	+150	°C

NPN high-voltage transistors

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	104	K/W
$R_{th\ j-mb}$	thermal resistance from junction to mounting base	10	K/W

CHARACTERISTICS

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

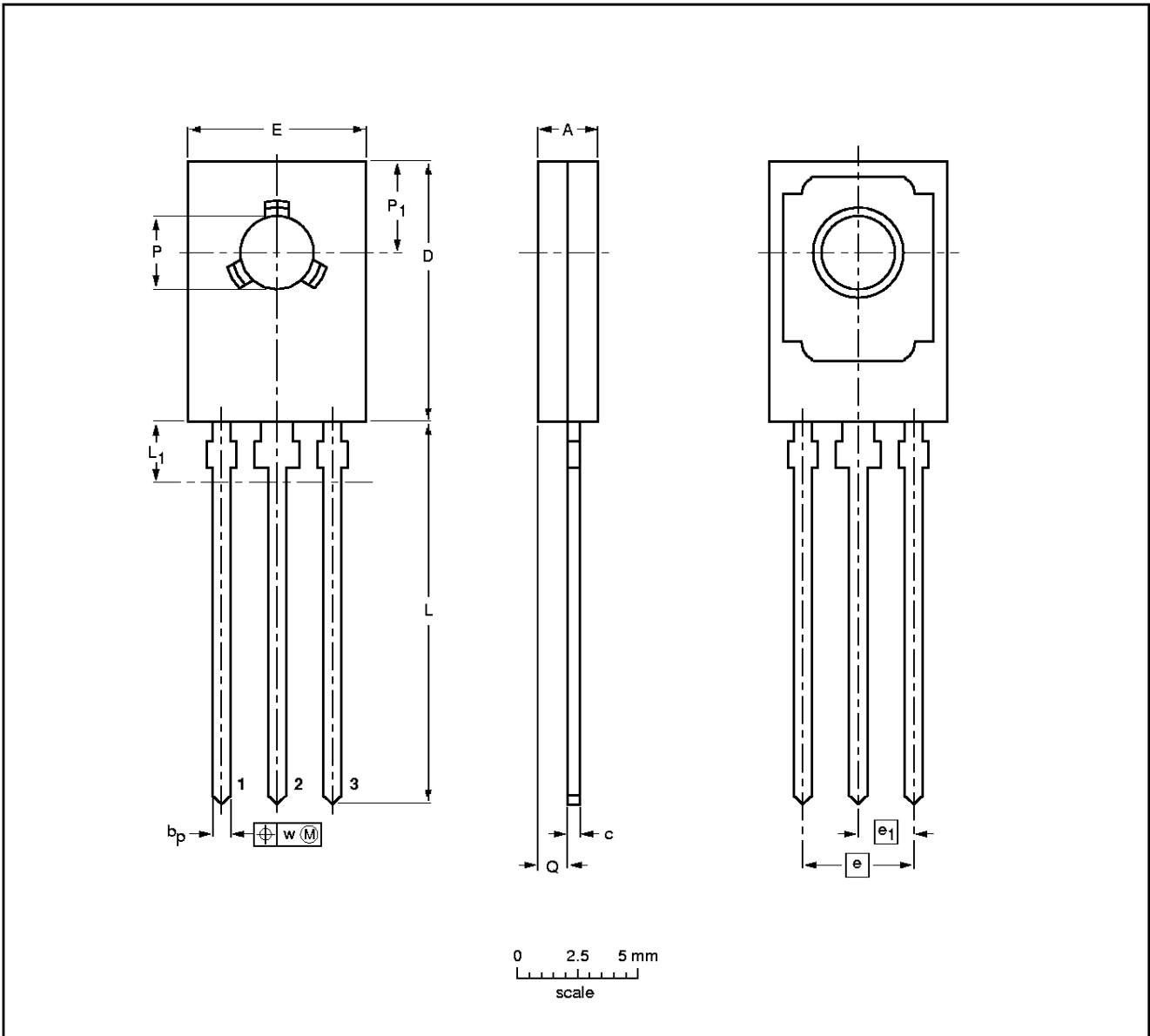
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current BF458	$I_E = 0; V_{CB} = 200\text{ V}$	–	–	50	nA
		$I_E = 0; V_{CB} = 200\text{ V}; T_j = 150\text{ °C}$	–	–	5	μA
I_{CBO}	collector cut-off current BF459	$I_E = 0; V_{CB} = 250\text{ V}$	–	–	50	nA
		$I_E = 0; V_{CB} = 250\text{ V}; T_j = 150\text{ °C}$	–	–	5	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	–	–	100	nA
h_{FE}	DC current gain	$I_C = 30\text{ mA}; V_{CE} = 10\text{ V}$	26	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 30\text{ mA}; I_B = 6\text{ mA}$	–	–	1	V
C_c	collector capacitance	$I_E = I_e = 0; V_{CB} = 30\text{ V}; f = 1\text{ MHz}$	–	–	4.5	pF
C_{re}	feedback capacitance	$I_C = I_c = 0; V_{CE} = 30\text{ V}; f = 1\text{ MHz}$	–	–	3.5	pF
f_T	transition frequency	$I_C = 15\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	–	90	–	MHz

NPN high-voltage transistors

BF458; BF459

PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; mountable to heatsink, 1 mounting hole; 3 leads SOT32



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _p	c	D	E	e	e ₁	L	L ₁ ⁽¹⁾ max	Q	P	P ₁	w
mm	2.7 2.3	0.88 0.65	0.60 0.45	11.1 10.5	7.8 7.2	4.58	2.29	16.5 15.3	2.54	1.5 0.9	3.2 3.0	3.9 3.6	0.254

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			
SOT32		TO-126				97-03-04

NPN high-voltage transistors

BF458; BF459

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.

NPN high-voltage transistors

BF458; BF459

NOTES

NPN high-voltage transistors

BF458; BF459

NOTES

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Printed in The Netherlands

115002/00/03/pp8

Date of release: 1999 Apr 21

Document order number: 9397 750 05704

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