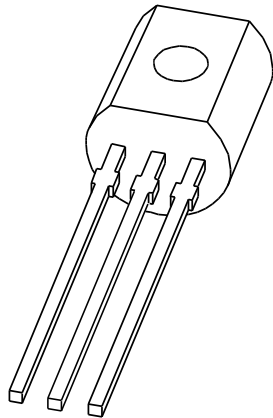


DATA SHEET



BF486; BF488 PNP high-voltage transistors

Product specification
Supersedes data of September 1994
File under Discrete Semiconductors, SC04

1996 Dec 09

PNP high-voltage transistors

BF486; BF488

FEATURES

- Low feedback capacitance.

APPLICATIONS

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

DESCRIPTION

PNP transistors in a TO-92 plastic package.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter

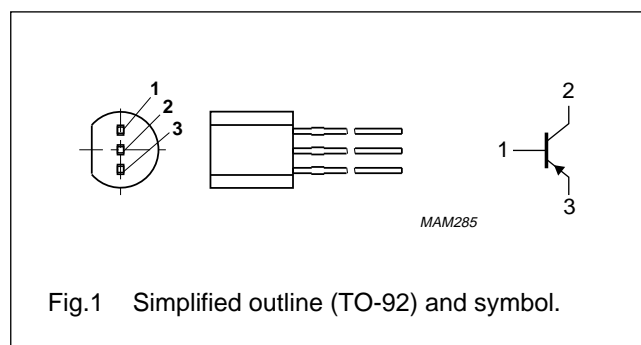


Fig.1 Simplified outline (TO-92) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BF486		–	–300	V
	BF488		–	–350	V
V _{CEO}	collector-emitter voltage	open base			
	BF486		–	–300	V
	BF488		–	–350	V
I _{CM}	peak collector current		–	–100	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	–	830	mW
h _{FE}	DC current gain	I _C = –25 mA; V _{CE} = –20 V	50	–	
C _{re}	feedback capacitance	I _C = i _c = 0; V _{CE} = –30 V; f = 1 MHz	–	2.5	pF
f _T	transition frequency	I _C = –10 mA; V _{CE} = –10 V; f = 100 MHz;	70	110	MHz

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LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BF486		–	–300	V
	BF488		–	–350	V
V _{CEO}	collector-emitter voltage	open base			
	BF486		–	–300	V
	BF488		–	–350	V
V _{EBO}	emitter-base voltage	open collector	–	–5	V
I _C	collector current (DC)		–	–50	mA
I _{CM}	peak collector current		–	–100	mA
I _{BM}	peak base current		–	–50	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; note 1	–	830	mW
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	150	°C
T _{amb}	operating ambient temperature		–65	+150	°C

Note

1. Transistor mounted on a printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	150	K/W

Note

1. Transistor mounted on a printed-circuit board.

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CHARACTERISTICS

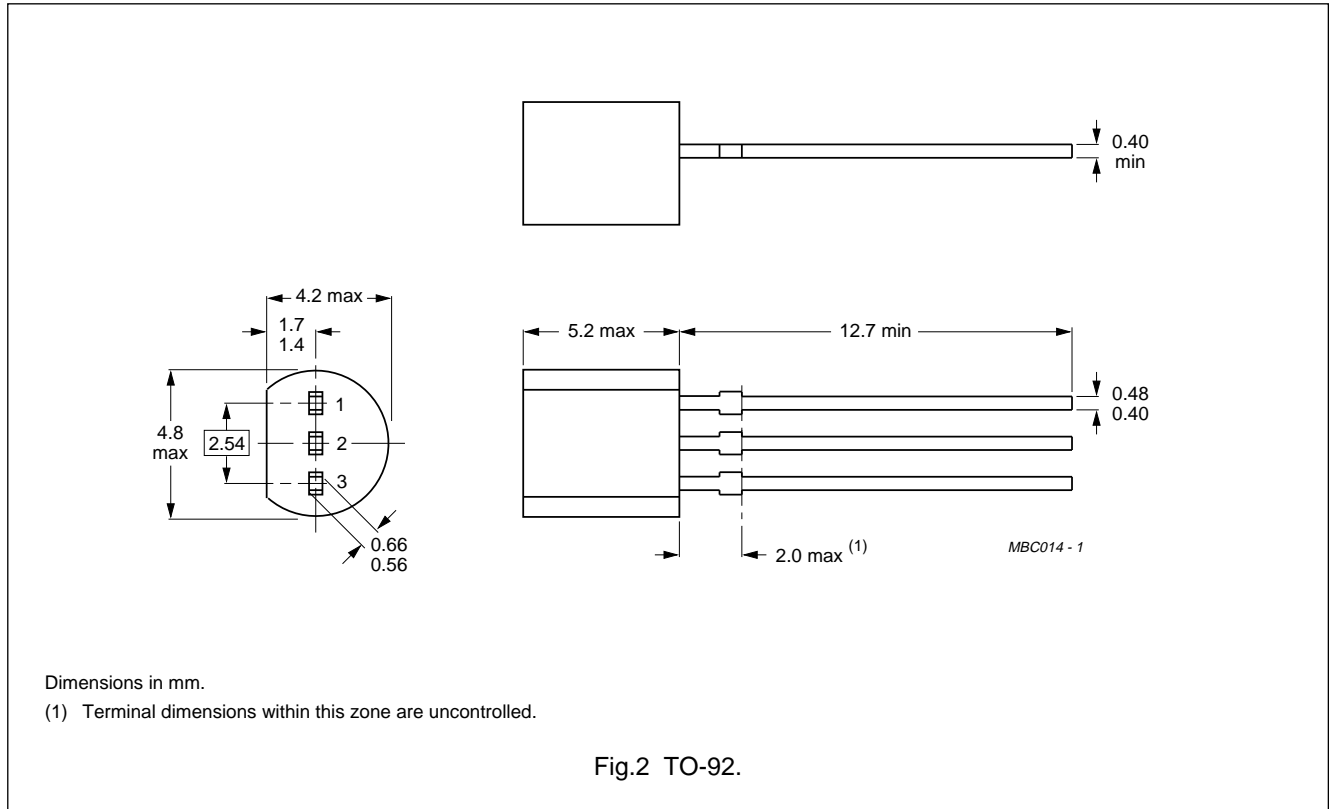
$T_j = 25\text{ °C}$ unless otherwise stated.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current BF486	$I_E = 0; V_{CB} = -250\text{ V}$	–	–20	nA
		$I_E = 0; V_{CB} = -200\text{ V}; T_j = 150\text{ °C}$	–	–20	μA
I_{CBO}	collector cut-off current BF488	$I_E = 0; V_{CB} = -300\text{ V}$	–	–20	nA
		$I_E = 0; V_{CB} = -200\text{ V}; T_j = 150\text{ °C}$	–	–20	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–100	nA
h_{FE}	DC current gain	$I_C = -25\text{ mA}; V_{CE} = -20\text{ V}$	50	–	
		$I_C = -40\text{ mA}; V_{CE} = -20\text{ V}$	20	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -20\text{ mA}; I_B = -2\text{ mA}$	–	–0.5	V
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -20\text{ V}; f = 1\text{ MHz}$	–	4	pF
C_{re}	feedback capacitance	$I_C = i_c = 0; V_{CE} = -30\text{ V}; f = 1\text{ MHz}$	–	2.5	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	70	110	MHz

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PACKAGE OUTLINE



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.