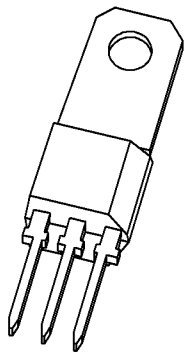
DATA SHEET



BF870; BF872
PNP high-voltage transistors

Product specification
Supersedes data of 1996 Dec 09

1998 Sep 21

Philips Semiconductors

PHILIPS

PNP high-voltage transistors BF870; BF872

FEATURES

- Low feedback capacitance.

APPLICATIONS

- For use in class-B video output stages of colour television receivers.

DESCRIPTION

PNP transistors in a TO-202 plastic package.
NPN complements: BF869 and BF871.

PINNING

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

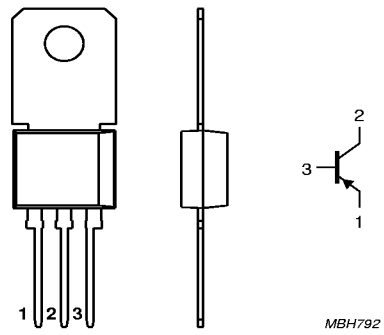


Fig.1 Simplified outline (TO-202) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	BF870		–	–250	V
	BF872		–	–300	V
V_{CEO}	collector-emitter voltage	open base			
	BF870		–	–250	V
	BF872		–	–300	V
I_{CM}	peak collector current		–	–100	mA
P_{tot}	total power dissipation	$T_{mb} \leq 25$ °C	–	5	W
h_{FE}	DC current gain	$I_C = -25$ mA; $V_{CE} = -20$ V; $T_j = 25$ °C	50	–	
C_{re}	feedback capacitance	$I_C = i_c = 0$; $V_{CE} = -30$ V; f = 1MHz	–	2.2	pF
f_T	transition frequency	$I_C = -10$ mA; $V_{CE} = -10$ V; f = 100 MHz	60	–	MHz

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			
	BF870		–	–250	V
	BF872		–	–300	V
V_{CEO}	collector-emitter voltage	open base			
	BF870		–	–250	V
	BF872		–	–300	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	$T_{amb} \leq 25$ °C	–	1.6	W
		$T_{mb} \leq 25$ °C	–	5	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	78	K/W
$R_{th\ j\text{-}mb}$	thermal resistance from junction to mounting base	25	K/W

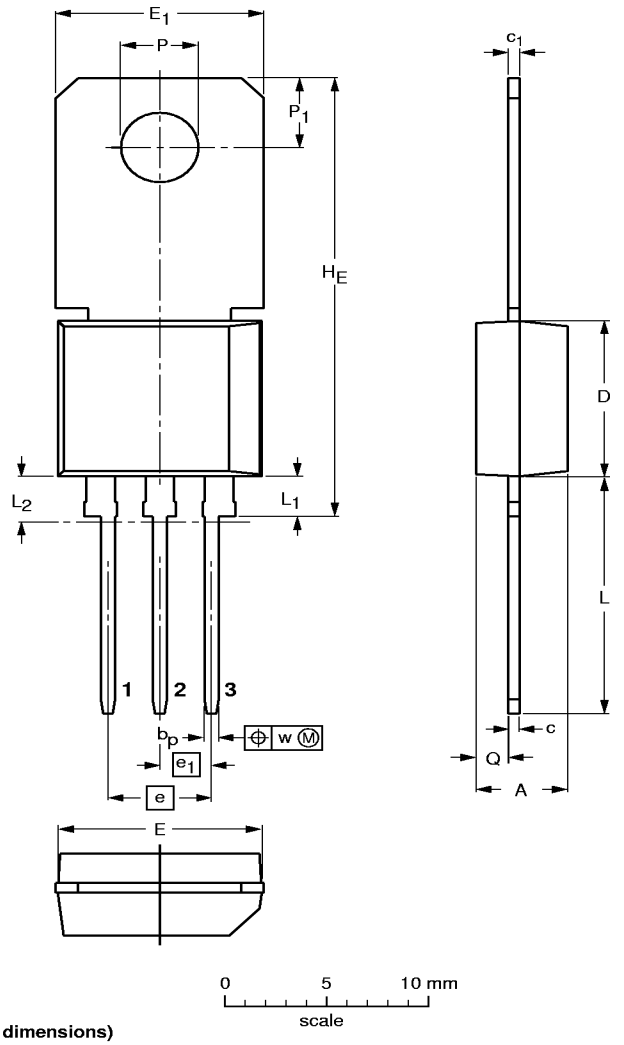
CHARACTERISTICS

$T_j = 25$ °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = -200$ V	–	–10	nA
		$I_E = 0$; $V_{CB} = -200$ V; $T_j = 150$ °C	–	–10	μA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = -5$ V	–	–50	nA
h_{FE}	DC current gain	$I_C = -25$ mA; $V_{CE} = -20$ V	50	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -30$ mA; $I_B = -5$ mA	–	–600	mV
C_{re}	feedback capacitance	$I_C = i_c = 0$; $V_{CE} = -30$ V; f = 1MHz	–	2.2	pF
f_T	transition frequency	$I_C = -10$ mA; $V_{CE} = -10$ V; f = 100 MHz	60	–	MHz

PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; with cooling fin, mountable to heatsink, 1 mounting hole; 3 leads (in-line) **SOT128B**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	c_1	D	E	E_1	e	e_1	H_E	L	L_1	$L_2^{(1)}$ max	P	P_1	Q	w
mm	4.6 4.4	0.8 0.6	0.65 0.5	0.56 0.46	8.6 8.4	10.1 9.9	10.4 10.0	5.08	2.54	24.2 23.8	13.3 12.2	2.4 2.0	2.5	3.8 3.6	3.9 3.7	1.7 1.5	0.25

Note

1. Plastic flash allowed within this zone

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT128B		TO-202				97-02-28