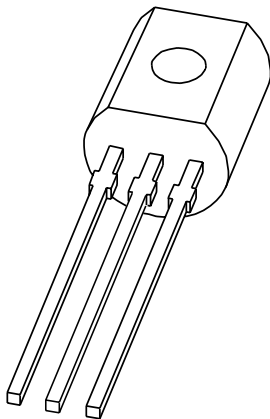


DATA SHEET



BC636; BC638; BC640 PNP medium power transistors

Product specification
Supersedes data of 1999 Apr 23

2001 Oct 10

PNP medium power transistors

BC636; BC638; BC640

FEATURES

- High current (max. 1 A)
- Low voltage (max. 80 V).

APPLICATIONS

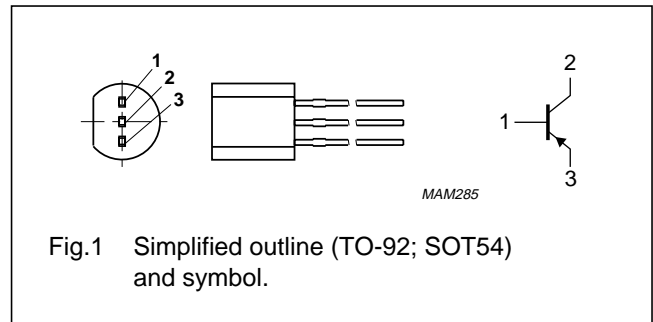
- Audio and video amplifiers.

DESCRIPTION

PNP medium power transistor in a TO-92; SOT54 plastic package. NPN complements: BC635, BC637 and BC639.

PINNING

PIN	DESCRIPTION
1	base
2	collector
3	emitter



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BC636		–	–45	V
	BC638		–	–60	V
V _{CEO}	collector-emitter voltage	open base			
	BC636		–	–45	V
	BC638		–	–60	V
V _{EBO}	emitter-base voltage	open collector	–	–5	V
	BC640		–	–100	V
I _C	collector current (DC)		–	–1	A
I _{CM}	peak collector current		–	–1.5	A
I _{BM}	peak base current		–	–200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; note 1	–	0.83	W
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 an FR4 printed-circuit board.

PNP medium power transistors

BC636; BC638; BC640

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 an FR4 printed-circuit board.

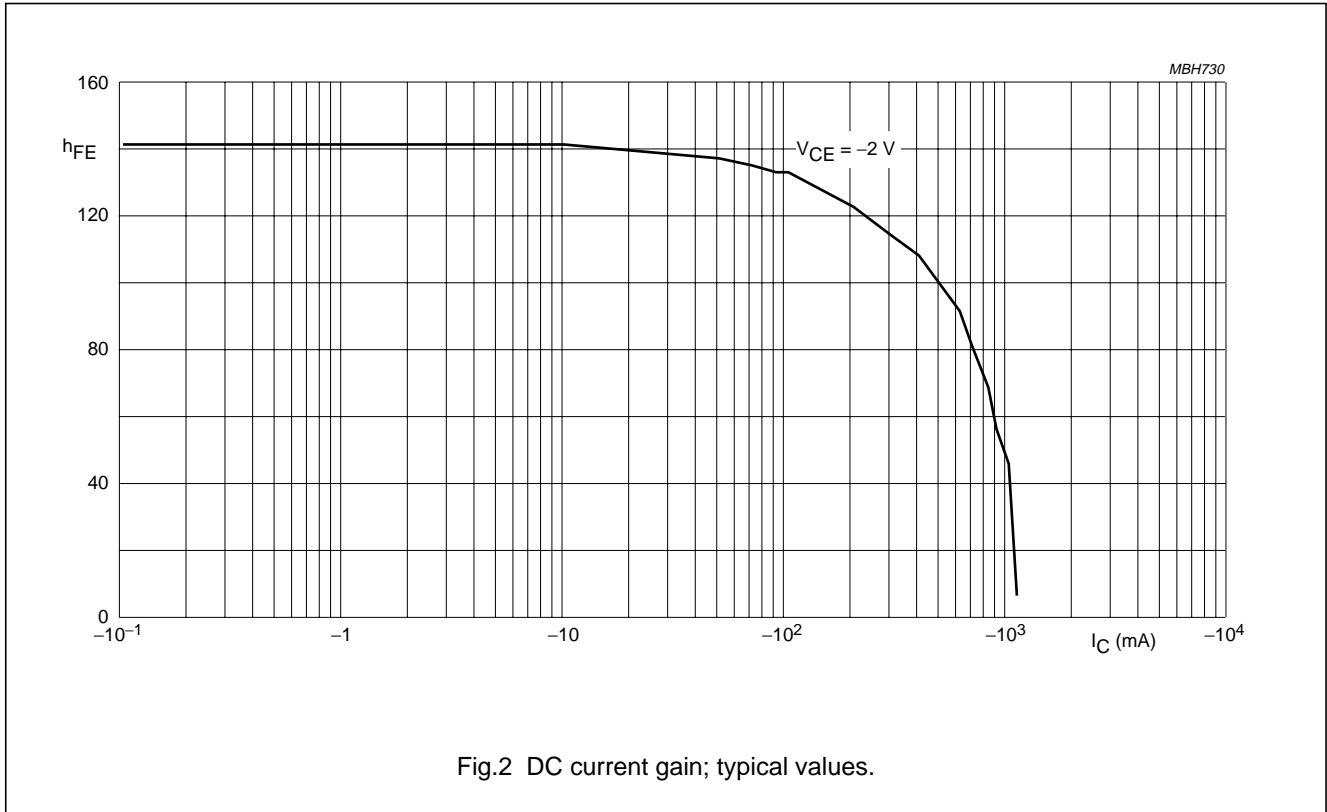
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	–	–100	nA
		$I_E = 0; V_{CB} = -30\text{ V}; T_j = 150\text{ °C}$	–	–10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–100	nA
h_{FE}	DC current gain	$V_{CE} = -2\text{ V}$; see Fig.2 $I_C = -5\text{ mA}$	63	–	
		$I_C = -150\text{ mA}$ $I_C = -500\text{ mA}$	63 40	250 –	
	DC current gain BC636-10 BC636-16; BC638-16; BC640-16	$I_C = -150\text{ mA}; V_{CE} = -2\text{ V}$; see Fig.2	63 100	160 250	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -500\text{ mA}; I_B = -50\text{ mA}$	–	–0.5	V
V_{BE}	base-emitter voltage	$I_C = -500\text{ mA}; V_{CE} = -2\text{ V}$	–	–1	V
f_T	transition frequency	$I_C = -50\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	–	MHz
$\frac{h_{FE1}}{h_{FE2}}$	DC current gain ratio of the complementary pairs	$ I_C = 150\text{ mA}; V_{CE} = 2\text{ V}$	–	1.6	

PNP medium power transistors

BC636; BC638; BC640



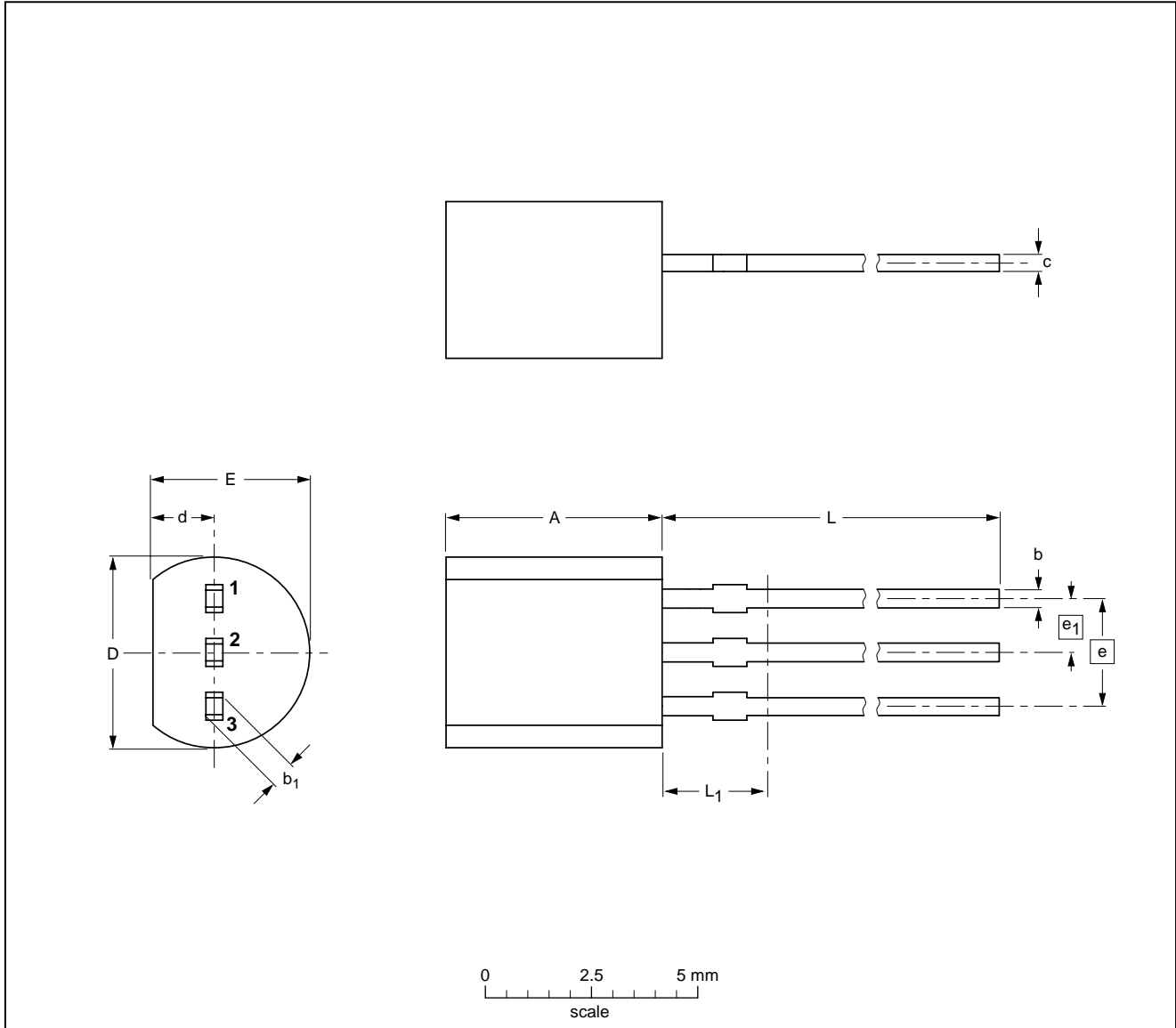
PNP medium power transistors

BC636; BC638; BC640

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

PNP medium power transistors

BC636; BC638; BC640

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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.
Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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PNP medium power transistors

BC636; BC638; BC640

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