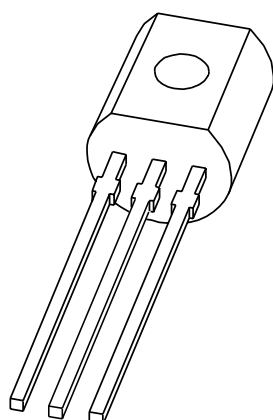


DATA SHEET



BC636; BC638; BC640 PNP medium power transistors

Product specification
Supersedes data of 2001 Oct 10

2004 Oct 11

PNP medium power transistors

BC636; BC638; BC640

FEATURES

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

APPLICATIONS

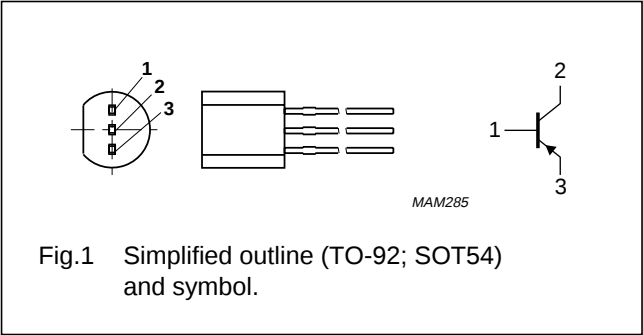
- Audio and video amplifiers.

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



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BC636	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54
BC638			
BC640			

PNP medium power transistors

BC636; BC638; BC640

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
	BC640		–	–100	V
V _{CEO}	collector-emitter voltage	open base			
	BC636		–	–45	V
	BC638		–	–60	V
	BC640		–	–80	V
V _{EBO}	emitter-base voltage	open collector	–	–5	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}	ambient temperature		–65	+150	°C

Note

1. Transistor mounted on an FR4 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 an FR4 printed-circuit board.

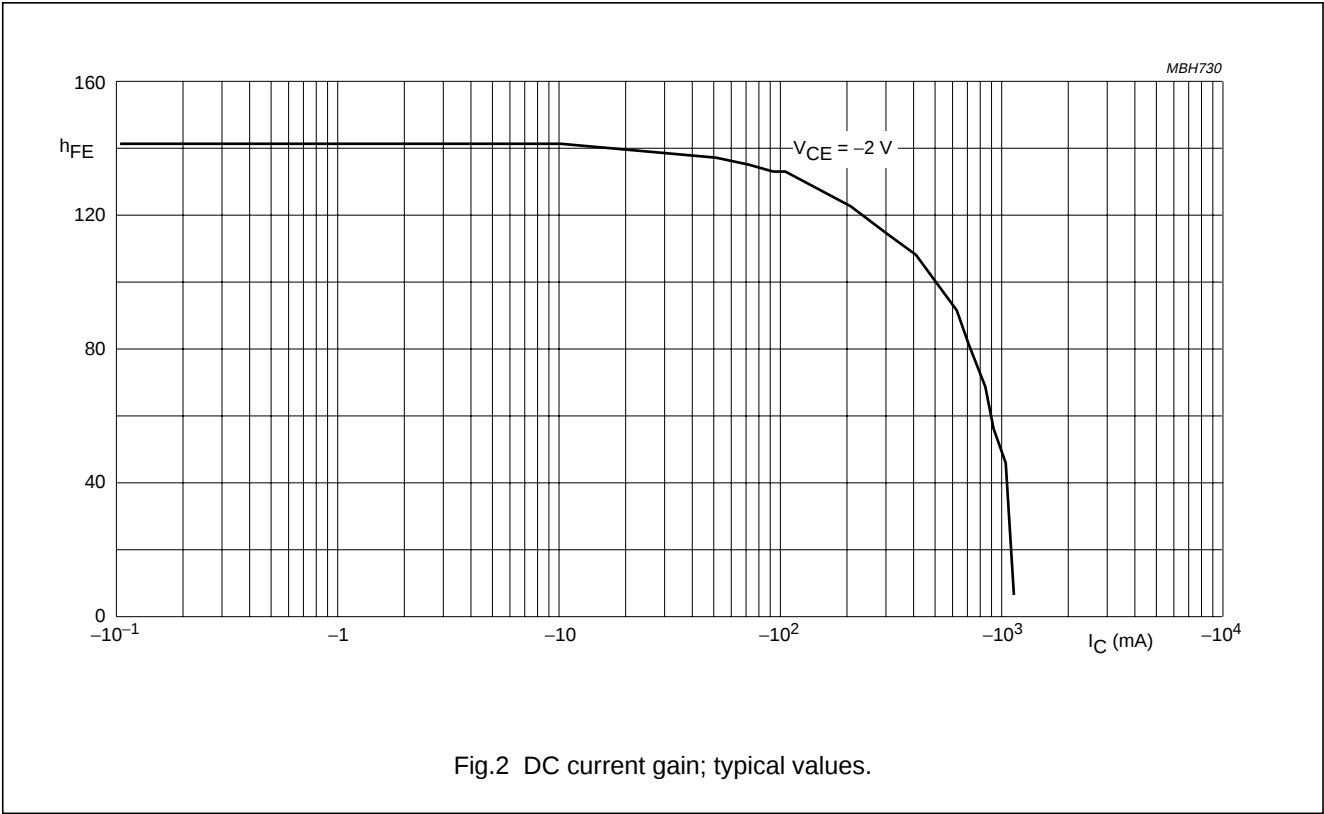
PNP medium power transistors

BC636; BC638; BC640

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I _{CBO}	collector-base cut-off current	V _{CB} = −30 V; I _E = 0 A	–	−100	nA
		V _{CB} = −30 V; I _E = 0 A; T _j = 150 °C	–	−10	μA
I _{EBO}	emitter-base cut-off current	V _{EB} = −5 V; I _C = 0 A	–	−100	nA
h _{FE}	DC current gain	V _{CE} = −2 V; see Fig.2			
		I _C = −5 mA	63	–	
		I _C = −150 mA	63	250	
		I _C = −500 mA	40	–	
	DC current gain BC636-10 BC636-16; BC638-16; BC640-16	V _{CE} = −2 V; I _C = −150 mA; see Fig.2	63	160	
			100	250	
V _{CEsat}	collector-emitter saturation voltage	I _C = −500 mA; I _B = −50 mA	–	−0.5	V
V _{BE}	base-emitter voltage	V _{CE} = −2 V; I _C = −500 mA	–	−1	V
f _T	transition frequency	V _{CE} = −5 V; I _C = −50 mA; f = 100 MHz	100	–	MHz
$\frac{h_{FE1}}{h_{FE2}}$	DC current gain ratio of the complementary pairs	V _{CE} = 2 V; I _C = 150 mA	–	1.6	



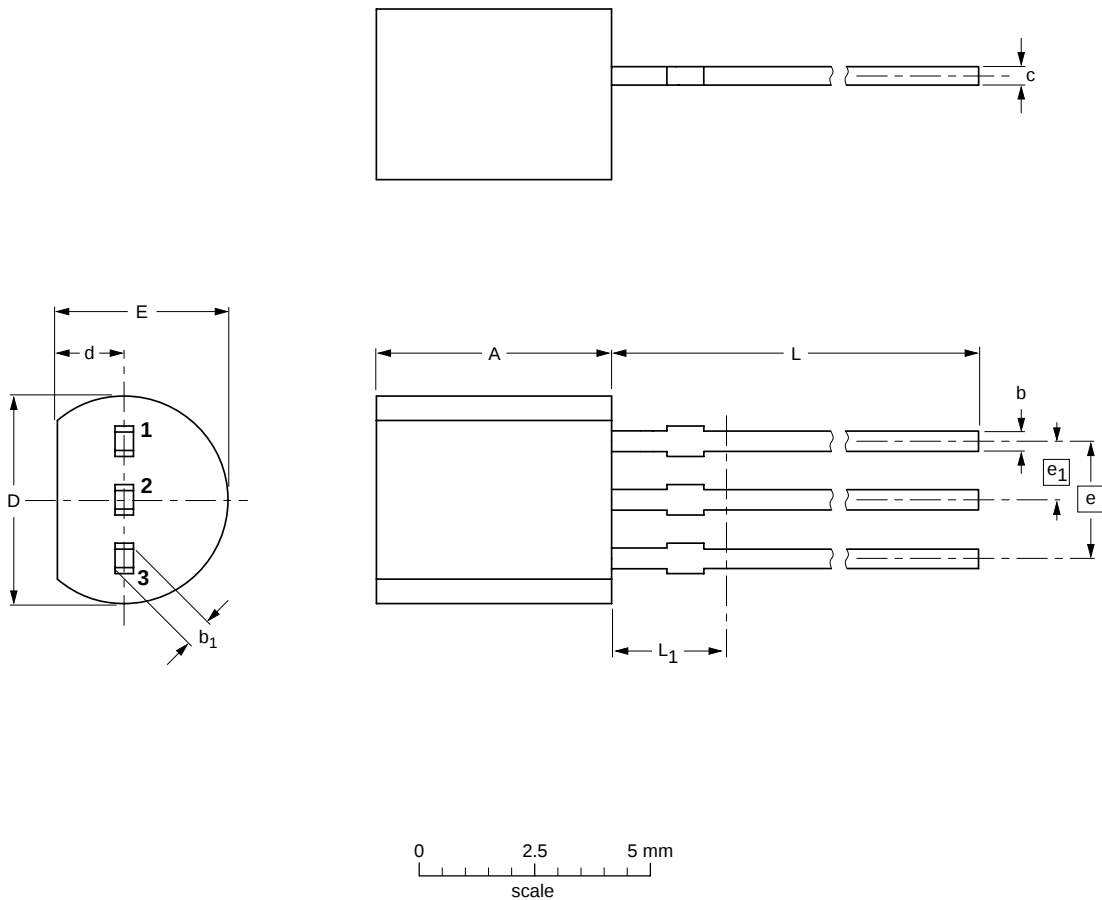
PNP medium power transistors

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⁾ 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

PNP medium power transistors

BC636; BC638; BC640

DATA SHEET STATUS

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.
II	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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Notes

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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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