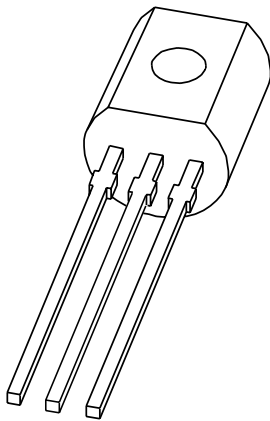


DATA SHEET



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

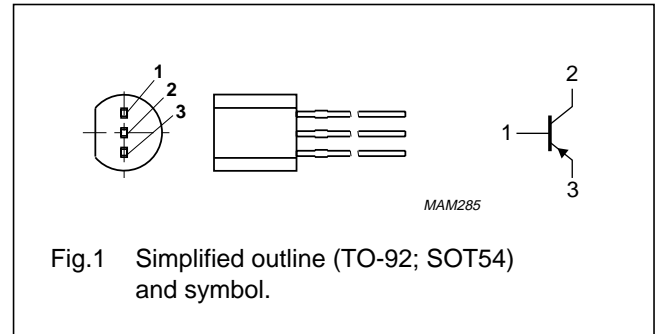
- Audio and video amplifiers.

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 I _C = -150 mA I _C = -500 mA	63 63 40	- 250 -	
	DC current gain BC636-10 BC636-16; BC638-16; BC640-16	V _{CE} = -2 V; I _C = -150 mA; see Fig.2	63 100	160 250	
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	

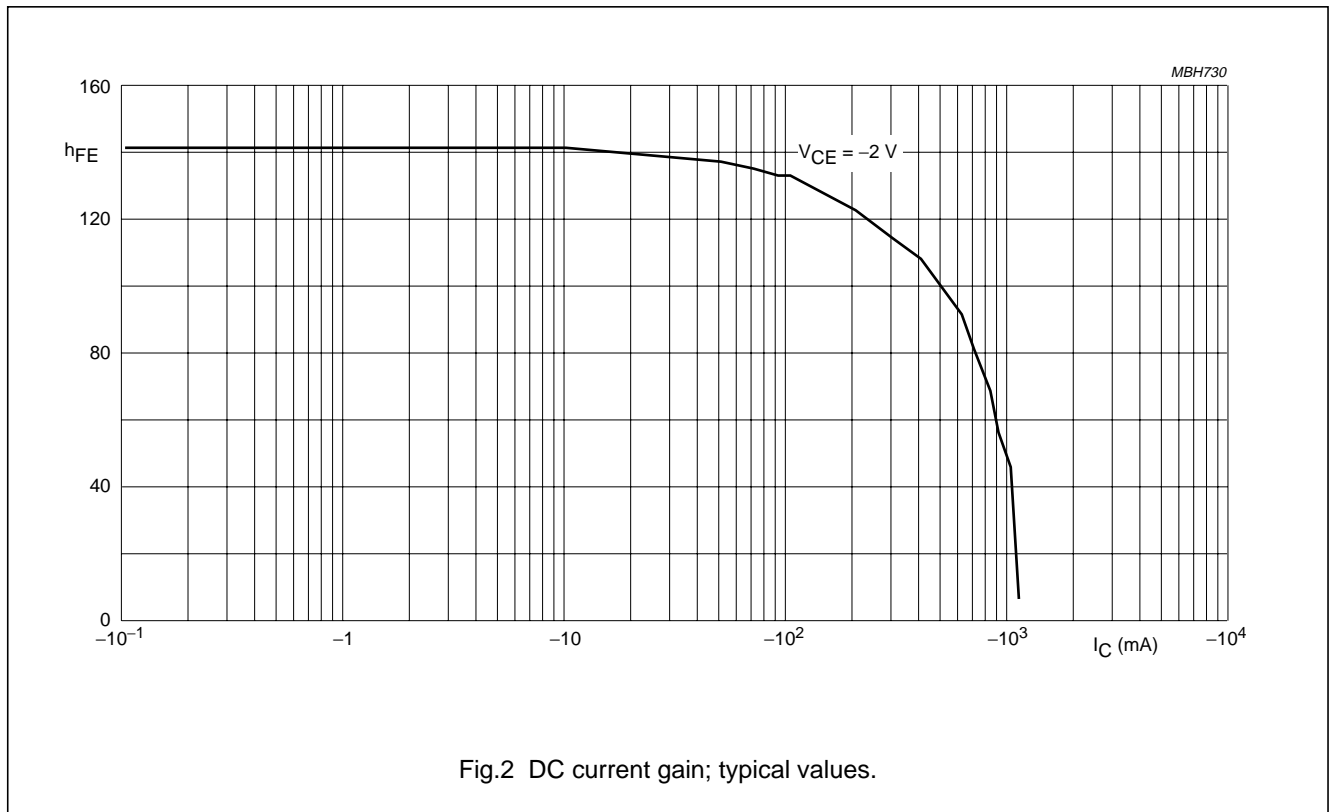


Fig.2 DC current gain; typical values.

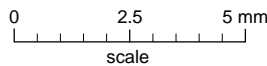
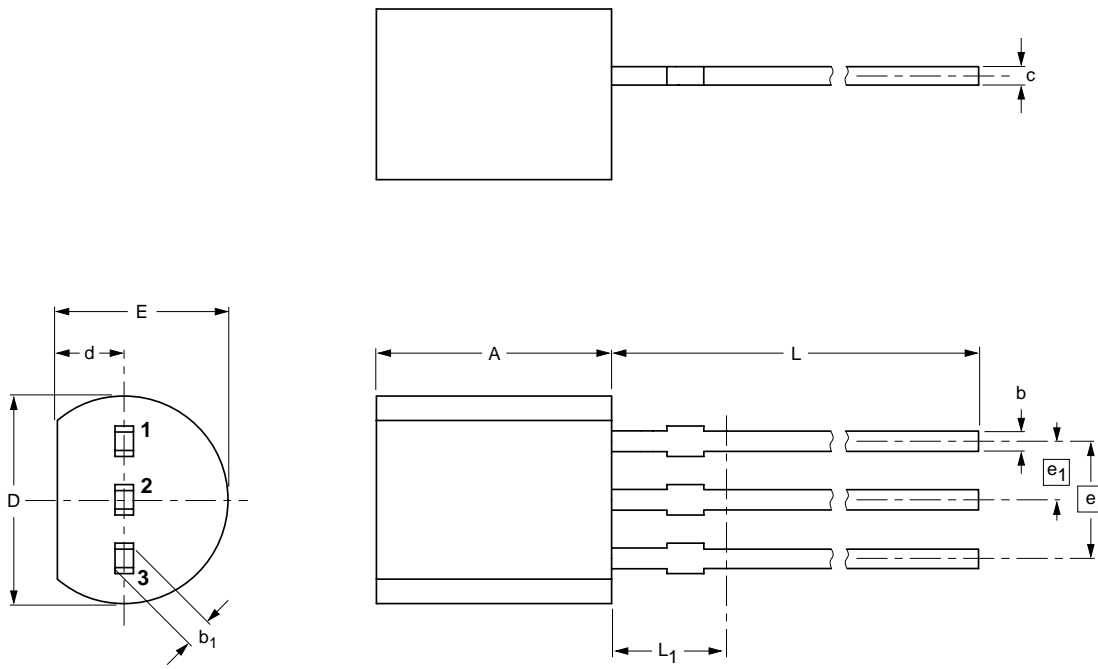
PNP medium power transistors

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.
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