

PNP medium power transistors

BC636; BC638; BC640

FEATURES

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

APPLICATIONS

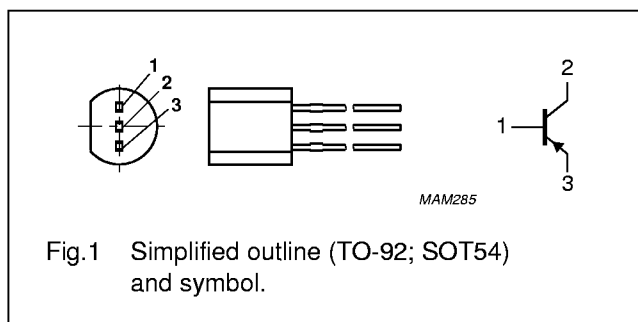
- Audio and video amplifiers.

DESCRIPTION

PNP medium power transistor in a TO-92; SOT54 plastic package. NP 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 134).

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	$T_{amb} \leq 25\text{ °C}$; 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	$V_{CE} = -2\text{ V}; \text{ see Fig.2}$			
		$I_C = -5\text{ mA}$	40	–	
		$I_C = -150\text{ mA}$	63	250	
		$I_C = -500\text{ mA}$	25	–	
	DC current gain BC636-10 BC636-16; BC638-16; BC640-16	$I_C = -150\text{ mA}; V_{CE} = -2\text{ V}; \text{ see Fig.2}$	63	160	
			100	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

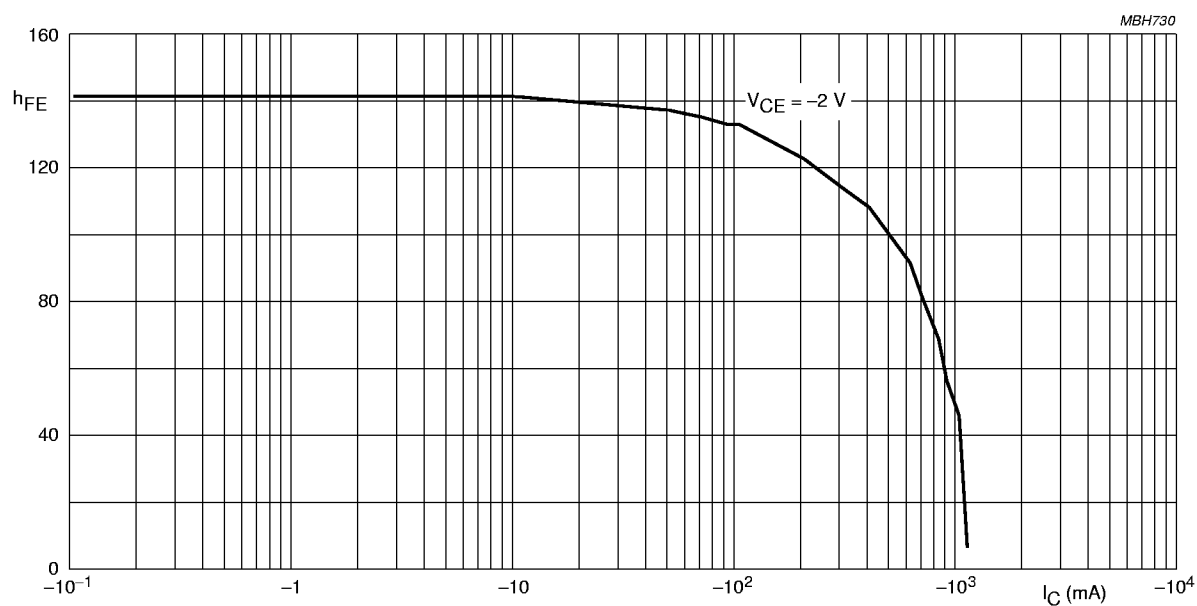


Fig.2 DC current gain; typical values.

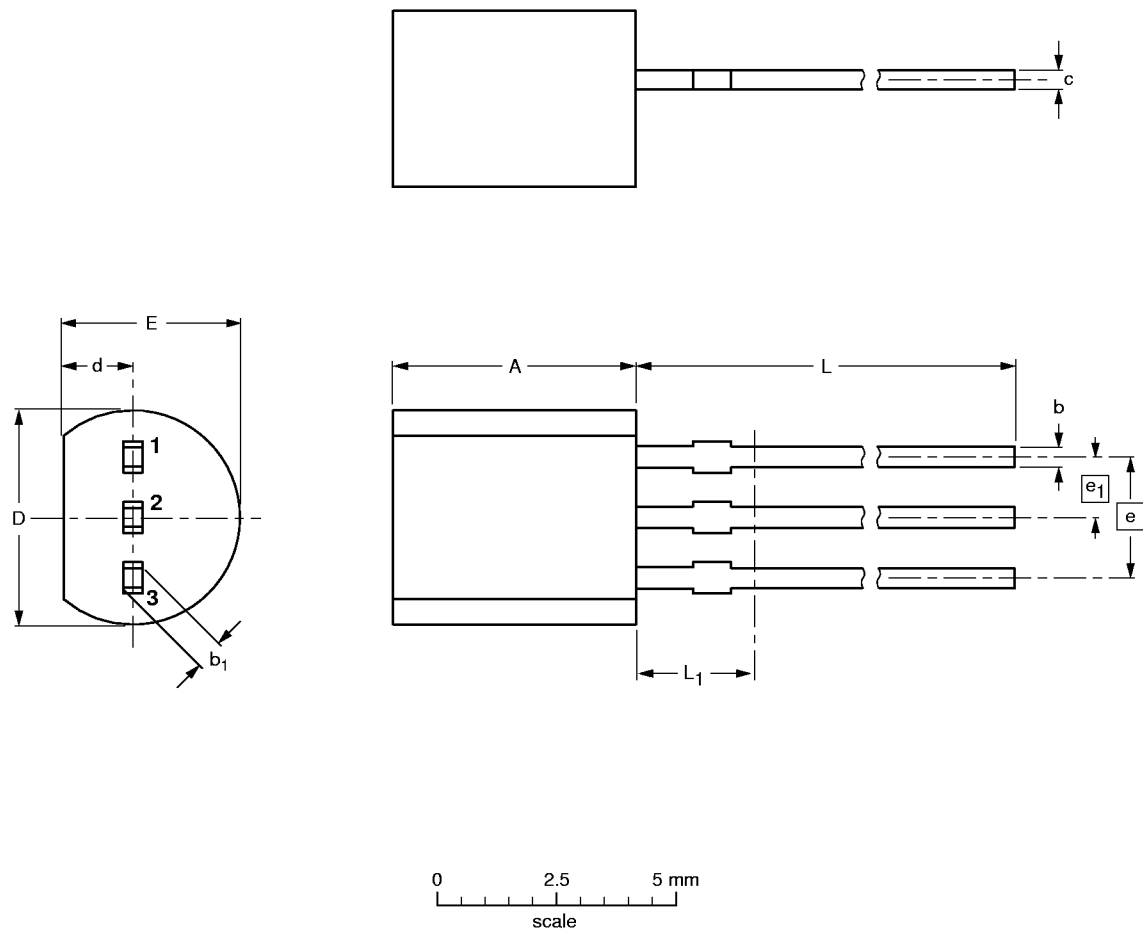
PNP medium power transistors

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⁾
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