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UHF linear power transistor BLW33

DESCRIPTION

N-P-N silicon planar epitaxial transistor primarily intended for use in **linear u.h.f. amplifiers** for television transmitters and transposers. The **excellent d.c. dissipation properties** for class-A operation are obtained by means of diffused emitter ballasting resistors and a multi-base structure, providing an optimum temperature profile on the crystal area. The combination of optimum thermal design and the application of **gold sandwich metallization** realizes excellent reliability properties.

The transistor has a ¼" capstan envelope with ceramic cap.

QUICK REFERENCE DATA

MODE OF OPERATION	f_{vision} MHz	V_{CE} V	I_C mA	T_h °C	d_{im} (1) dB	$P_{o\ sync}$ (1) W	G_p dB
class-A; linear amplifier	860	25	300	70	–60	> 1,0	> 10,0
	860	25	300	25	–60	typ. 1,15	typ. 10,5

Note

1. Three-tone test method (vision carrier –8 dB, sound carrier –7 dB, sideband signal –16 dB), zero dB corresponds to peak sync level.

PIN CONFIGURATION

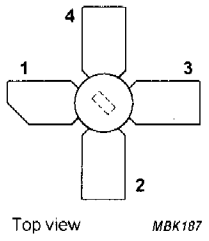


Fig.1 Simplified outline. SOT122A.

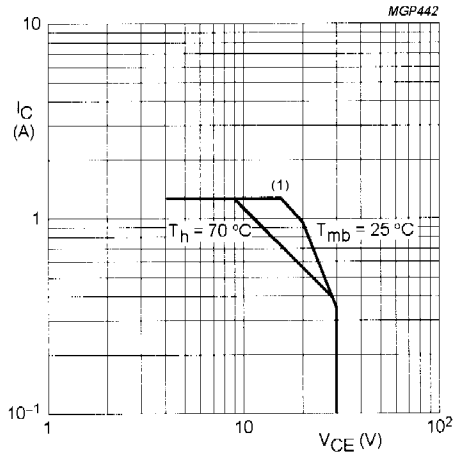
PINNING - SOT122A.

PIN	DESCRIPTION
1	collector
2	emitter
3	base
4	emitter

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Collector-emitter voltage			
(peak value); V_{BE} = 0	V_{CESM}	max.	50 V
open base	V_{CEO}	max.	30 V
Emitter-base voltage (open collector)	V_{EBO}	max.	4 V
Collector current			
d.c. or average	I_C	max.	1,25 A
(peak value); f > 1 MHz	I_{CM}	max.	1,9 A
Total power dissipation up to T_{mb} = 25 °C	P_{tot}	max.	19,3 W
Storage temperature	T_{stg}		−65 to +150 °C
Operating junction temperature	T_j	max.	200 °C



(1) Second breakdown limit (independent of temperature).

Fig.2 D.C. SOAR.

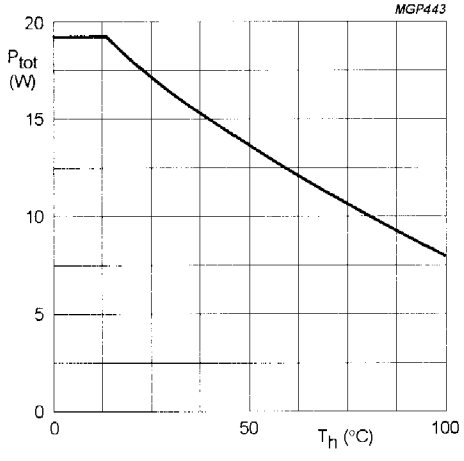


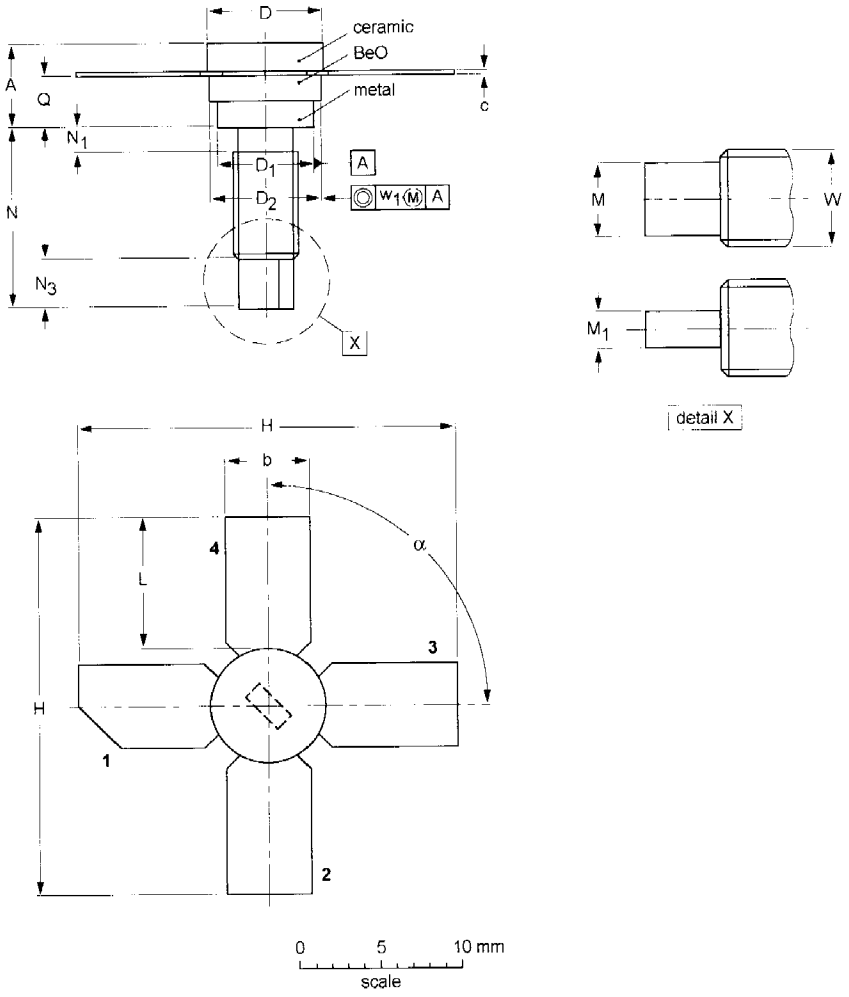
Fig.3 Power derating curve vs. temperature.

THERMAL RESISTANCE (see Fig.4)

From junction to mounting base			
(dissipation = 7,5 W; T_{mb} = 74,5 °C; i.e. T_h = 70 °C)	$R_{th\ j\text{-}mb}$	=	10,1 K/W
From mounting base to heatsink	$R_{th\ mb\text{-}h}$	=	0,6 K/W

PACKAGE OUTLINE

Studded ceramic package; 4 leads **SOT122A**



DIMENSIONS (millimetre dimensions are derived from the original inch dimensions)

UNIT	A	b	c	D	D_1	D_2	H	L	M_1	M	N	N_1 max.	N_3	Q	W	w_1	α
mm	5.97 4.74	5.85 5.58	0.18 0.14	7.50 7.23	6.48 6.22	7.24 6.93	27.56 25.78	9.91 9.14	3.18 2.66	1.66 1.39	11.82 11.04	1.02	3.86 2.92	3.38 2.74	8-32 UNC	0.381	90°

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOT122A					97-04-18