

UHF push-pull power transistor

BLV947

FEATURES

- Double input and output matching for easy matching and high gain
- Poly-silicon emitter-ballasting resistors for an optimum temperature profile
- Gold metallization ensures excellent reliability.

DESCRIPTION

Two NPN silicon planar epitaxial transistors in push-pull configuration, intended for linear common emitter class-AB operation in base station transmitters in the 800 to 960 MHz range.

The transistor is encapsulated in a 4-lead SOT262A2 flange envelope, with two ceramic caps. The flange provides the common emitter connection for both transistors.

QUICK REFERENCE DATA

RF performance at $T_h = 25\text{ }^{\circ}\text{C}$ in a common emitter test circuit.

MODE OF OPERATION	f (MHz)	V_{CE} (V)	P_L (W)	G_p (dB)	η_c (%)
CW, class-AB	960	26	100	typ. 9	typ. 50

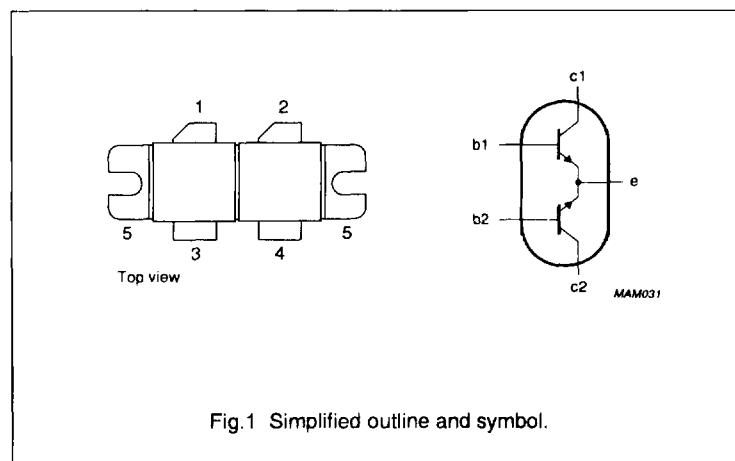


Fig.1 Simplified outline and symbol.

PINNING – SOT262A2

PIN	DESCRIPTION
1	collector 1
2	collector 2
3	base 1
4	base 2
5	emitter (connected to flange)

WARNING

Product and environmental safety - toxic materials

This product contains beryllium oxide. The product is entirely safe provided that the BeO discs are not damaged. All persons who handle, use or dispose of this product should be aware of its nature and of the necessary safety precautions. After use, dispose of as chemical or special waste according to the regulations applying at the location of the user. It must never be thrown out with the general or domestic waste.

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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	–	60	V
V_{CEO}	collector-emitter voltage	open base	–	28	V
V_{EBO}	emitter-base voltage	open collector	–	3	V
I_C	DC collector current		–	16.5	A
P_{tot}	total power dissipation	$T_{mb} = 25\text{ °C}$; note 1	–	200	W
T_{stg}	storage temperature		–65	150	°C
T_j	junction temperature		–	200	°C

Note

1. Total device; both sections equally loaded.

THERMAL RESISTANCE

SYMBOL	PARAMETER	CONDITIONS	THERMAL RESISTANCE
$R_{th\ j-mb}$	thermal resistance from junction to mounting base	$P_{tot} = 200\text{ W}$; $T_{mb} = 25\text{ °C}$; note 1	max. 0.88 K/W
$R_{th\ mb-h}$	thermal resistance from mounting base to heatsink	note 1	max. 0.15 K/W

Note

1. Total device; both sections equally loaded.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	open emitter; $I_C = 40\text{ mA}$	60	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base; $I_C = 50\text{ mA}$	28	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; $I_E = 2\text{ mA}$	3	–	V
I_{CES}	collector cut-off current	$V_{BE} = 0$; $V_{CE} = 25\text{ V}$	–	10	mA
h_{FE}	DC current gain	$I_C = 1\text{ A}$; $V_{CE} = 10\text{ V}$	30	120	

APPLICATION INFORMATION

RF performance at $T_h = 25\text{ °C}$ in a common emitter test circuit.

MODE OF OPERATION	f (MHz)	V_{CE} (V)	I_{CQ} (mA)	P_L (W)	G_p (dB)	η_c (%)
CW, class-AB	960	26	2 x 100	100	typ. 9	typ. 50