

UHF power transistor

BLT62

FEATURES

- High efficiency
- High gain
- Internal pre-matched input.

APPLICATIONS

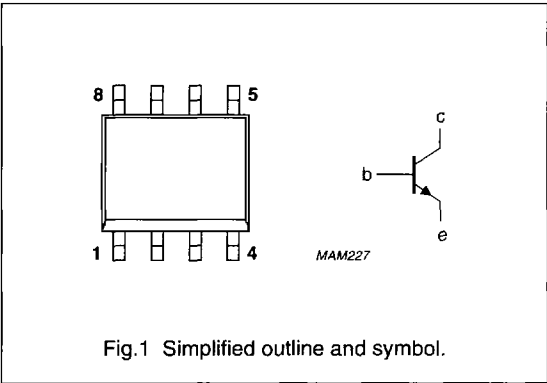
- Hand-held radio equipment in common emitter class-AB operation for 900 MHz Time Division Multiple Axis (TDMA) communication systems.

PINNING - SOT96-1

PIN	SYMBOL	DESCRIPTION
1, 8	b	base
2, 4, 5, 7	e	emitter
3, 6	c	collector

DESCRIPTION

NPN silicon planar epitaxial transistor encapsulated in a plastic SOT96-1 (SO8) SMD package.



QUICK REFERENCE DATA

RF performance at $T_s \leq 60^\circ\text{C}$ in a common emitter test circuit.

MODE OF OPERATION	f (MHz)	V_{CE} (V)	P_L (W)	G_p (dB)	η_c (%)
Pulsed, class-AB	900	3.6	3	typ. 9.5	typ. 63

UHF power transistor

BLT62

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	–	15	V
V_{CEO}	collector-emitter voltage	open base	–	8	V
V_{EBO}	emitter-base voltage	open collector	–	3.5	V
I_C	collector current (DC)		–	650	mA
P_{tot}	total power dissipation	$T_s = 115\text{ }^{\circ}\text{C}$; note 1	–	2	W
T_{stg}	storage temperature		–65	+150	$^{\circ}\text{C}$
T_j	operating junction temperature		–	175	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	$P_{tot} = 2\text{ W}$; $T_s = 115\text{ }^{\circ}\text{C}$; note 1	30	K/W

Note to the “Limiting values” and “Thermal characteristics”

- T_s is the temperature at the soldering point of the collector pin.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	open emitter; $I_C = 5\text{ mA}$	15	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base; $I_C = 10\text{ mA}$	8	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; $I_E = 1\text{ mA}$	3.5	–	V
I_{CES}	collector leakage current	$V_{CE} = 3.6\text{ V}$; $V_{BE} = 0$	–	0.1	mA
h_{FE}	DC current gain	$V_{CE} = 3.6\text{ V}$; $I_C = 100\text{ mA}$	30	150	
C_c	collector capacitance	$V_{CB} = 3.6\text{ V}$; $I_E = i_b = 0$; $f = 1\text{ MHz}$	–	tbF	pF
C_{re}	feedback capacitance	$V_{CE} = 3.6\text{ V}$; $I_C = 0$; $f = 1\text{ MHz}$	–	tbF	pF

UHF power transistor

BLT62

APPLICATION INFORMATION

RF performance at $T_s \leq 60\text{ }^{\circ}\text{C}$ in a common emitter test circuit (note 1).

MODE OF OPERATION	f (MHz)	V _{CE} (V)	I _{CQ} (mA)	P _L (W)	G _p (dB)	η _c (%)
Pulsed, class-AB; δ = 1 : 8; t _p ≤ 5 ms	900	3.6	2	3	≥8 typ. 9.5	≥50 typ. 63

Note

1. T_s is the temperature at the soldering point of the collector pin.

Ruggedness in class-AB operation

The BLT62 is capable of withstanding a load mismatch corresponding to VSWR = 10 : 1 through all phases under the following conditions: δ = 1 : 8; t_p ≤ 5 ms; f = 900 MHz; V_{CE} = 5 V; I_{CQ} = 2 mA; P_L = 3.5 W; $T_s \leq 60\text{ }^{\circ}\text{C}$.

