

Typical applications

Power amplifier 57 - 67 GHz for use in:

- Short Range High Capacity Links,
- Mobile Terminals,
- Battery Operated Devices.

Features

Output power: $P_{SAT}=17$ dBm, $P_{1dB}=15$ dBm

Gain 22 dB

Peak PAE 15.5 %

Differential Inputs/Outputs

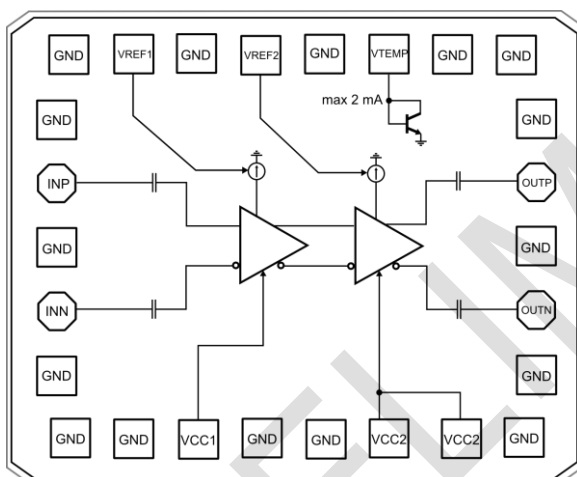
Internally Matched to 100 Ohm

Unconditionally stable

Supply voltage: +3.3 V

Die Size: $0.88 \times 0.72 \text{ mm}^2$

Functional diagram



General description

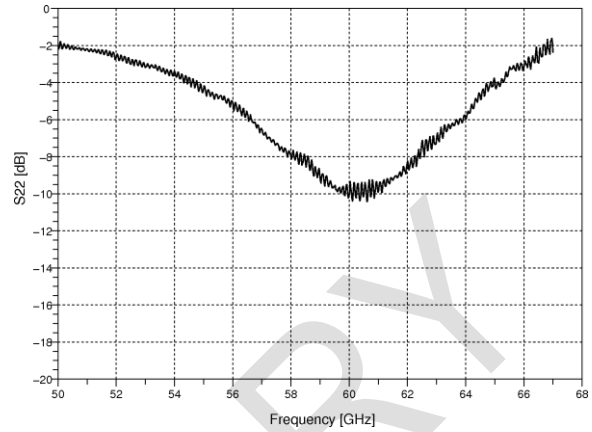
The TS-PA2-60 is a Power Amplifier intended for use in 60 GHz applications. Differential inputs allow balun-less connection to mixer. Integrated diode-connected BJT is placed near the output transistors, and allows temperature measurement for thermal protection.

Electrical specifications, $T_A=25^\circ\text{C}$, 50 Ohm system, Measured with 1:2 Balun, $V_{CC}=3.3\text{V}$

Parameter	Min	Typ	Max	Units
Input return loss	-10			dB
Gain		22		dB
Output power (saturated)		17		dBm
Output power (1 dB compression)		15		dBm
Peak PAE		15.5		%
PAE at 1 dB compression point		11.5		%
Supply current ($I(VCC1) + I(VCC2)$)		73		mA

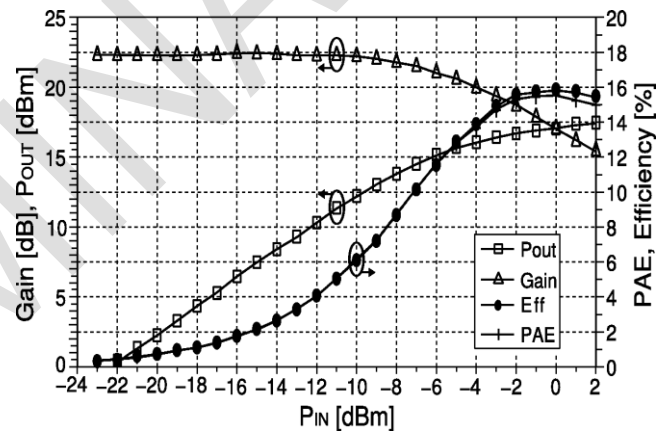
Input Return Loss

Output Return Loss



Gain

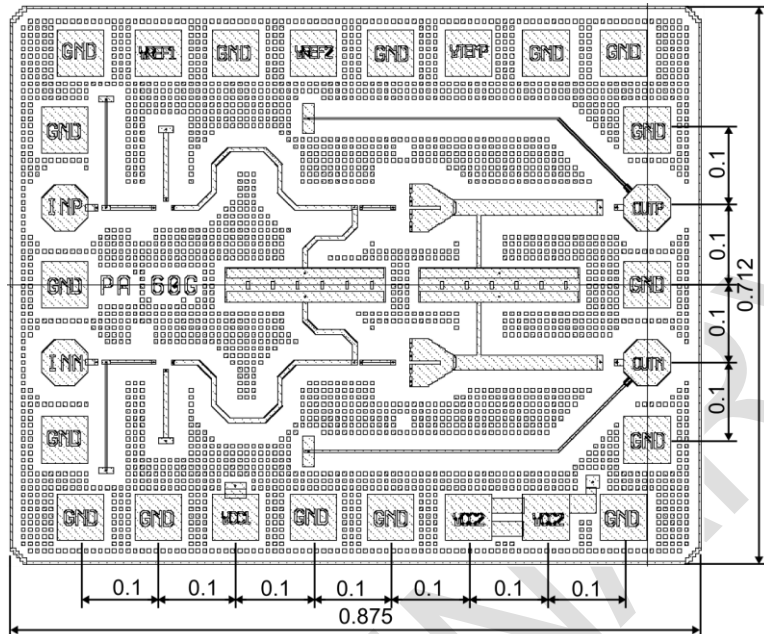
Power, Gain and PAE @ 61.5 GHz



Absolute Maximum Ratings

Parameter	Min	Typ	Max	Units
Supply voltage			3.5	V
Input Power			10	dBm
Operating Temperature	TBD		TBD	°C
Storage Temperature	-50		150	°C

Outline Drawing and Chip Identification Information

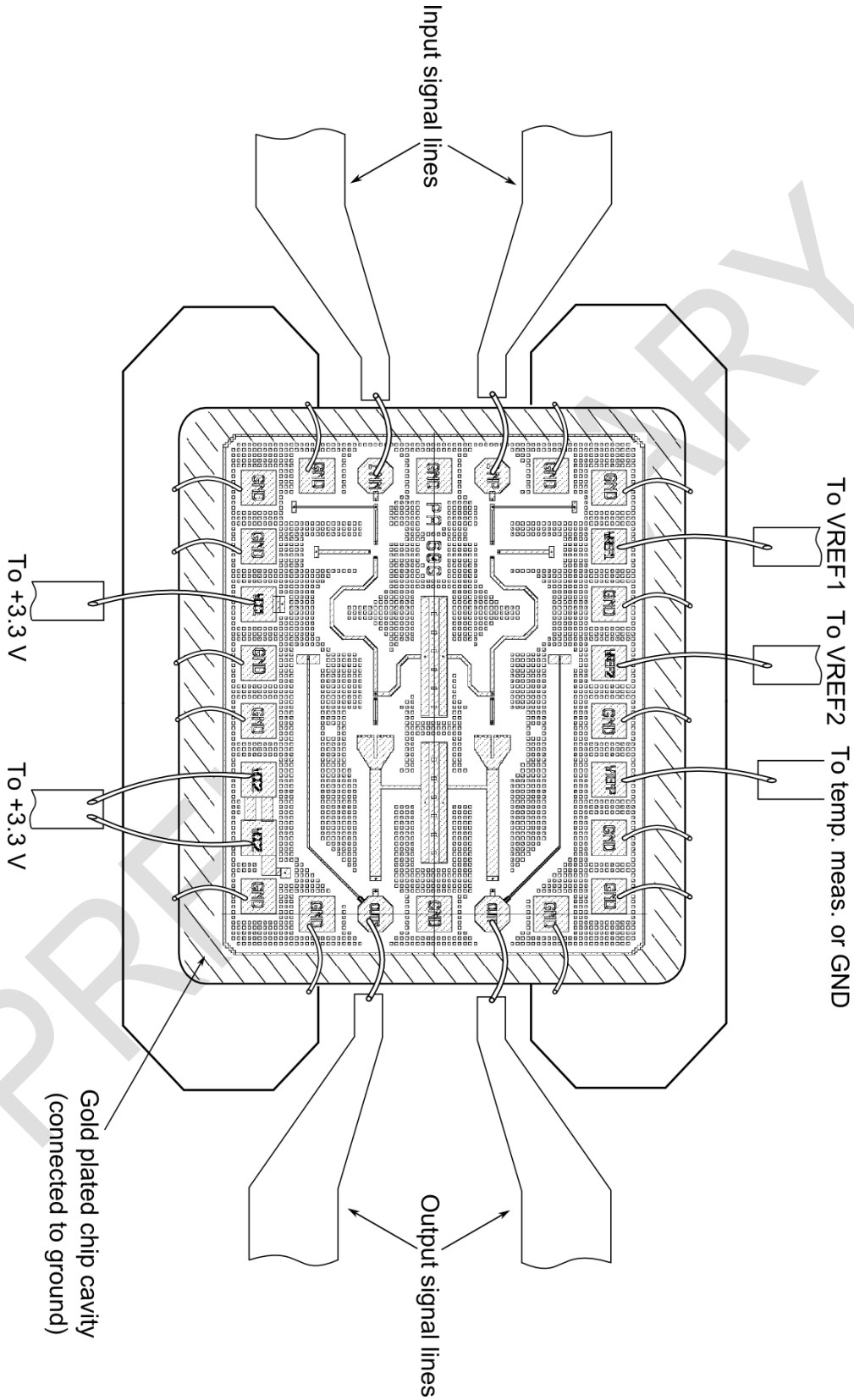


**ELECTROSTATIC SENSITIVE DEVICE
HANDLE IN ESD SAFE ENVIRONMENT**

Pad Descriptions

Pad	Function	Description	Interface
VCC1, VCC2	Power	3.3 V DC supply	Power
VREF1, VREF2	Power	Adjust VREF1 to get $I(VCC1)=8.7$ mA Adjust VREF2 to get $I(VCC2)=64.4$ mA	Power
GND	Power	Ground	Power
INP	Input	Differential signal input +	AC coupled
INN	Input	Differential signal input -	AC coupled
OUTP	Output	Differential signal output +	AC coupled
OUTN	Output	Differential signal output -	AC coupled
VTEMP	Temp. sense	Diode connected BJT for temperature measurement	DC

Assembly Diagram



Revision information

Version	Change List
1.0	Preliminary data

PRELIMINARY

Notes:

PRELIMINARY

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