

DETECTOR WITH LNA, 57 – 67 GHz

Typical applications

- Measurement,
- High Data Rate Receivers,
- AGC,
- APC,
- V Band Applications.

Features

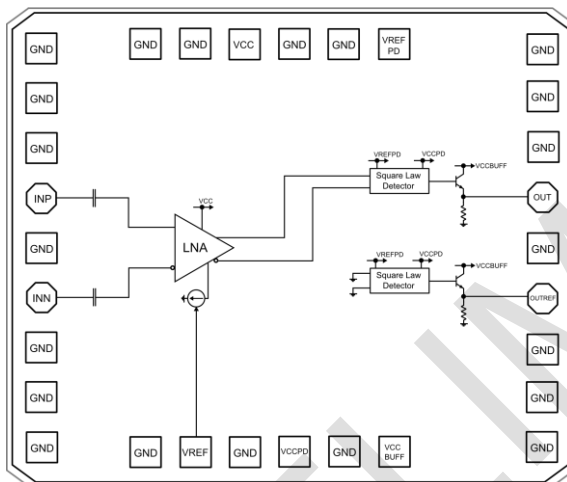
Frequency Range: 57 – 67 GHz

Fast Rise/Fall Time: < 250 ps

 Input Internally Matched to 100 Ω

Single DC Supply: 2.7 V

Supply current:

 Small Size: 0.96 x 1.15 mm²
Functional diagram

General description

The TS-LPD-60 is a fast square law detector with LNA and an output rise/fall time less than 250 ps. Data rates up to 2 GB/s can be achieved. Reference value for zero input power is provided at OUTREF pin. Output buffer current can be adjusted for matching or low power.

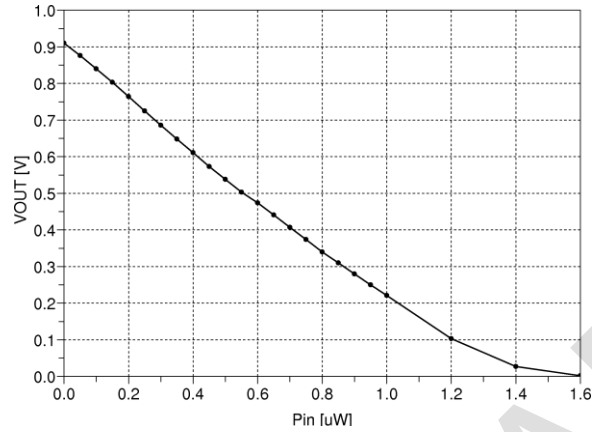
Electrical specifications, $T_A=25^\circ\text{C}$, 50 Ohm system, Measured with 1:2 Balun, $V_{CC}=2.7\text{ V}$

Parameter	Min	Typ.	Max	Units
Input Frequency Range	57 – 67			GHz
Rise/Fall Time			250	ps
Input Return Loss			-11	dB
Input Power Range	0		1	μW
Best Fit Error	-5		+5	%
Supply current		26		mA

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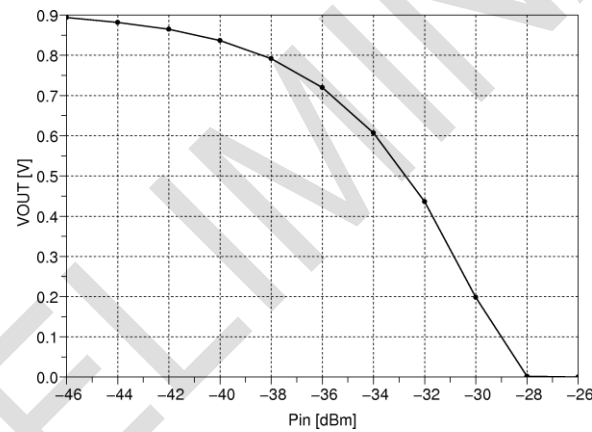
Output Voltage (OUT)

vs. Input Power, $F_{in} = 61.5$ GHz



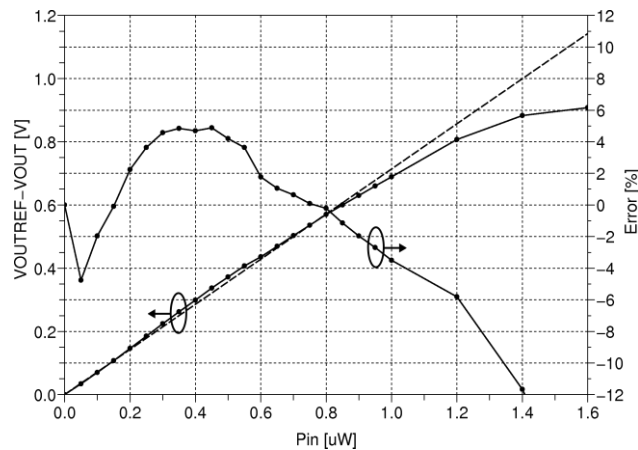
Output Voltage (OUT)

vs. Input Power, $F_{in} = 61.5$ GHz



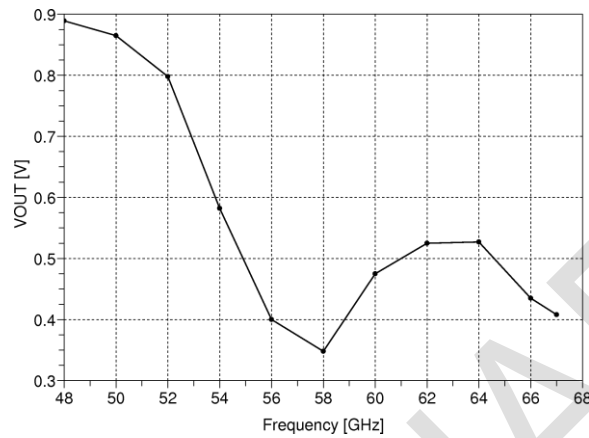
Output Voltage (OUTREF - OUT) & Error

vs. Input Power, $F_{in} = 61.5$ GHz

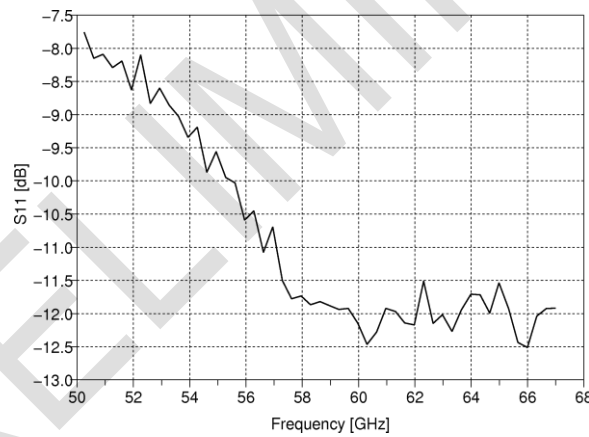


Output Voltage vs. Frequency

Pin= -33 dBm

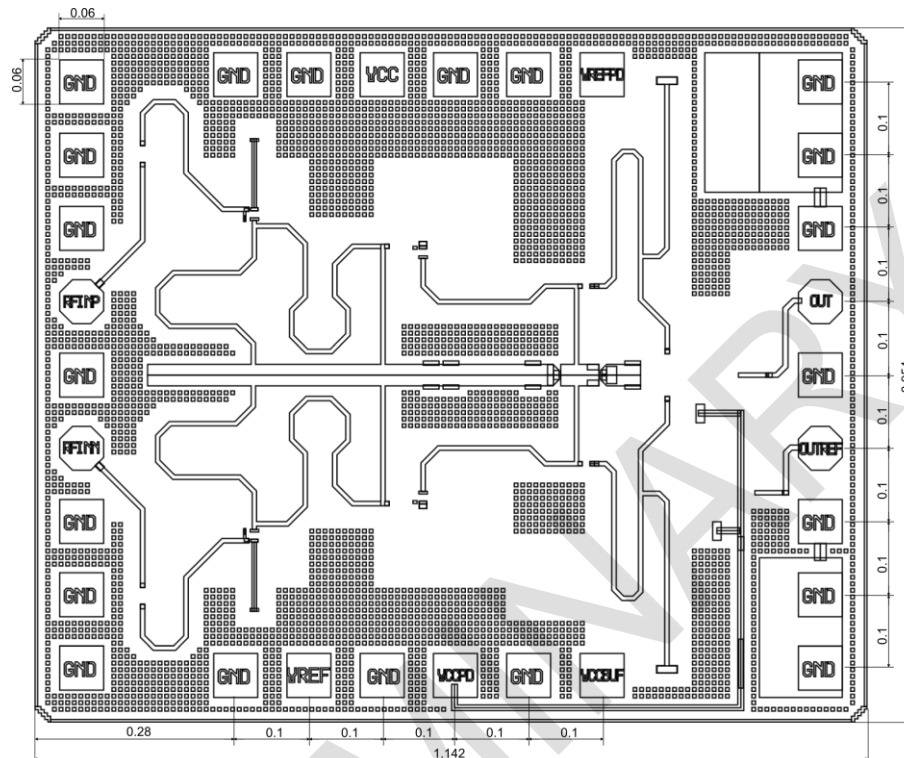


Input Return Loss



Absolute Maximum Ratings

Parameter	Min	Typ.	Max	Units
Supply voltage			3	V
Input Power			0	dBm
Operating Temperature	TBD		TBD	°C
Storage Temperature	-50		150	°C

Outline Drawing and Chip Identification Information


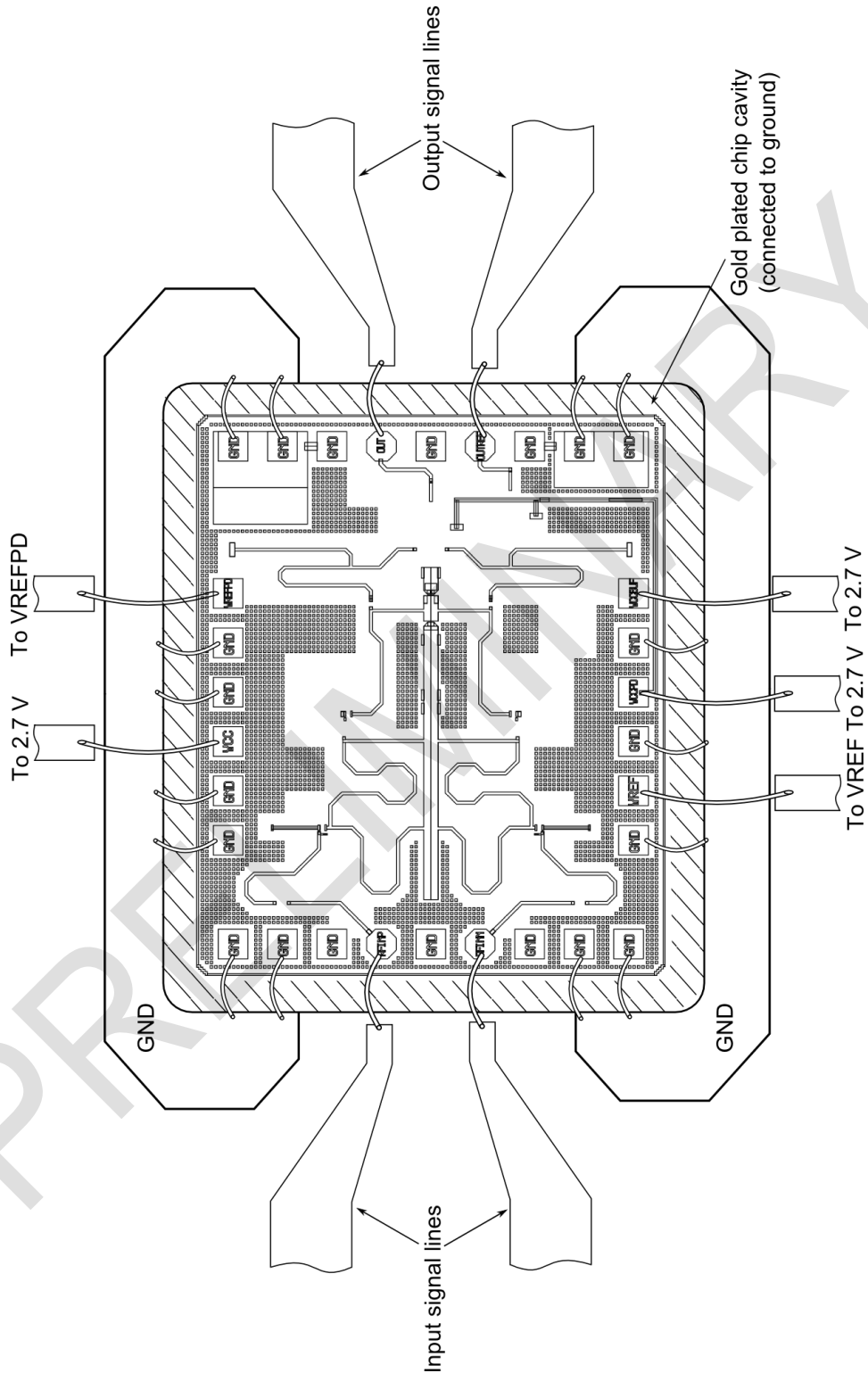
**ELECTROSTATIC SENSITIVE DEVICE
HANDLE IN ESD SAFE ENVIRONMENT**

Pad Descriptions

Pad	Function	Description	Interface
VCC	Power	2.7 V DC LNA supply	Power
VCCPD	Power	2.7 V DC Power Detector supply	Power
VCCBUF	Power	2.7 V DC output buffer supply	Power
VREF	Power	Reference voltage for LNA (Typ. 2.5 V)	Power
VREFPD	Power	Reference voltage for PD (Typ. 2.7 V)	Power
GND	Power	Ground	Power
RFINP	Input	Differential signal input +	AC coupled
RFINN	Input	Differential signal input -	AC coupled
OUT	Output	Output voltage proportional to Pin	DC coupled
OUTREF	Output	Output voltage for Pin=0 W	DC coupled

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Assembly Diagram



All bonds should be as short as possible.

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Revision information

Version	Change List
1.0	Preliminary data

PRELIMINARY

Notes:

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