

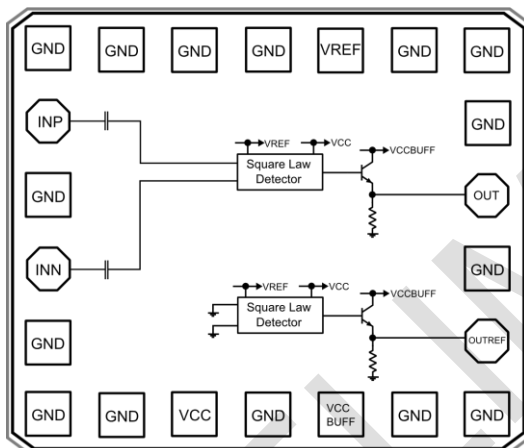
### Typical applications

- 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: 4.3 mA + Output Buffer  
 Small Size: 0.6 x 0.7 mm<sup>2</sup>

### Functional diagram



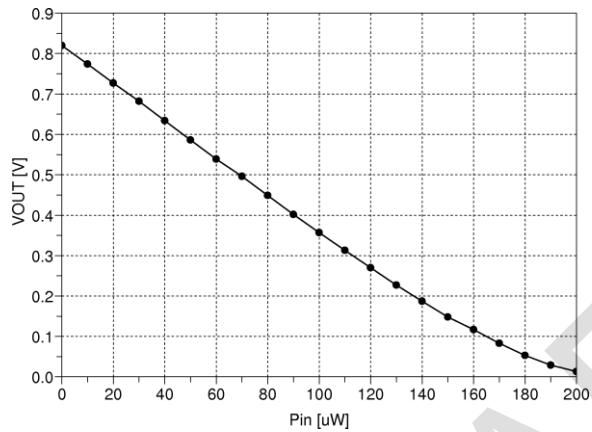
### General description

The TS-PD-60 is a fast square law detector with 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.

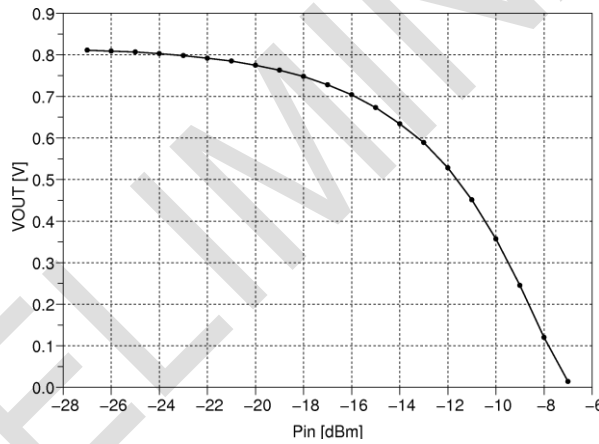
**Electrical specifications,  $T_A=25\text{ }^\circ\text{C}$ , 50 Ohm system, Measured with 1:2 Balun,  $V_{CC}=2.7\text{ V}$**

Parameter	Min	Typ.	Max	Units
Input Frequency Range	57 – 67			GHz
Rise/Fall Time			250	ps
Input Return Loss	-22		-9	dB
Input Power Range	0		100	μW
Best Fit Error	-1		1	%
Supply current		4.3		mA

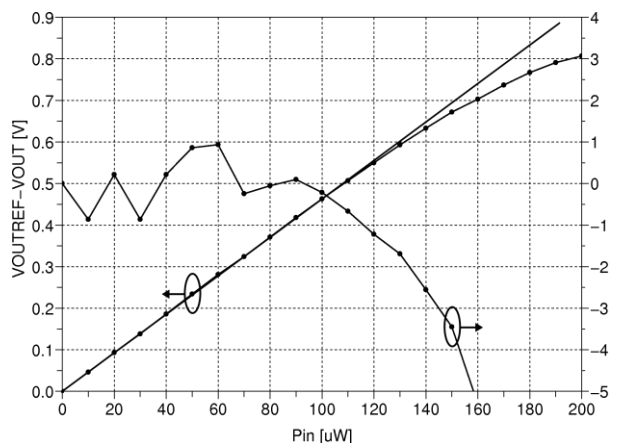
**Output Voltage (OUT)  
vs. Input Power,  $F_{in} = 61.5$  GHz**



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

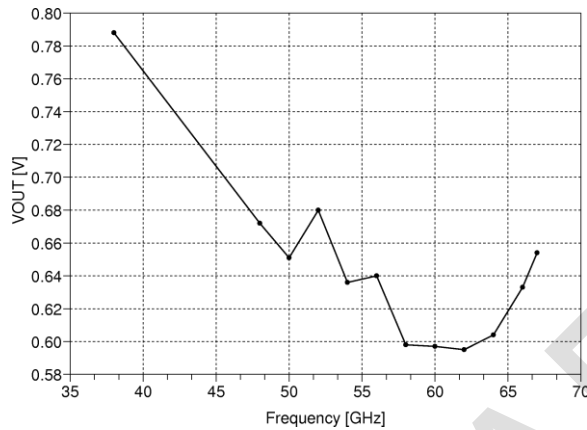


**Output Voltage (OUTREF - OUT) & Error  
vs. Input Power,  $F_{in} = 61.5$  GHz**

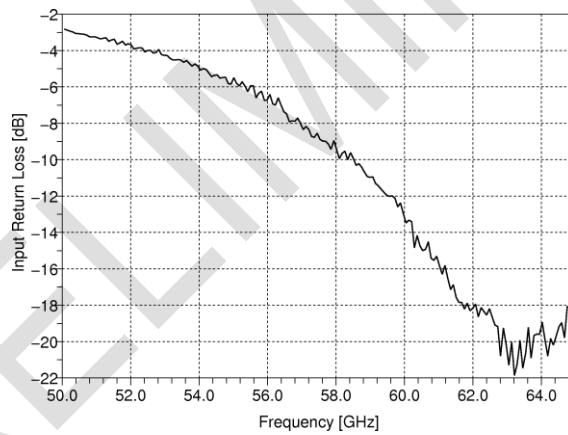


**Output Voltage vs. Frequency**

**Pin= -13 dBm**



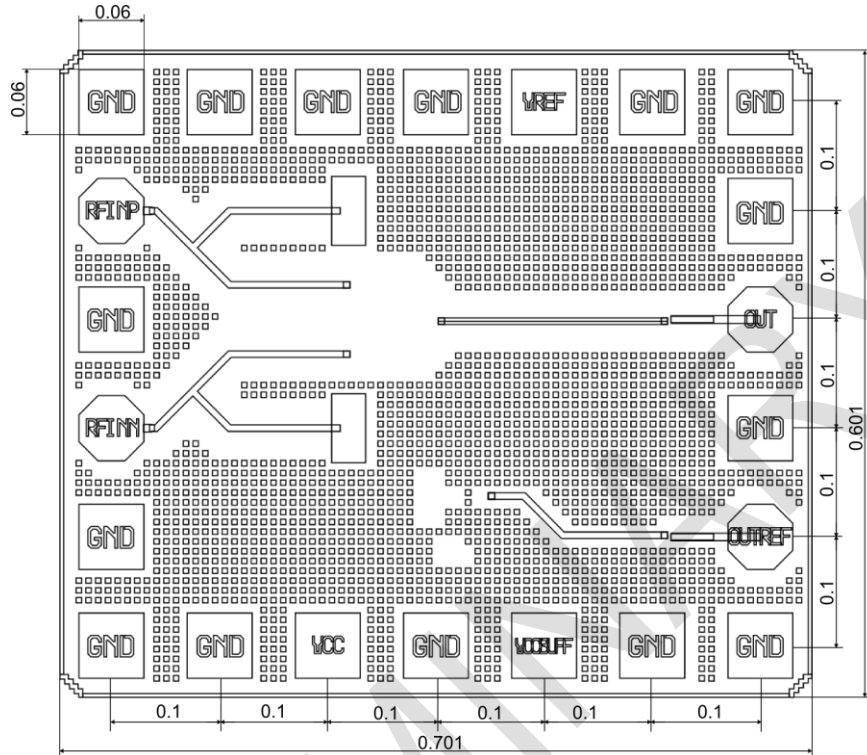
**Input Return Loss**



**Absolute Maximum Ratings**

Parameter	Min	Typ.	Max	Units
Supply voltage			3	V
Input Power			10	dBm
Operating Temperature	TBD		TBD	°C
Storage Temperature	-50		150	°C

**Outline Drawing and Chip Identification Information**

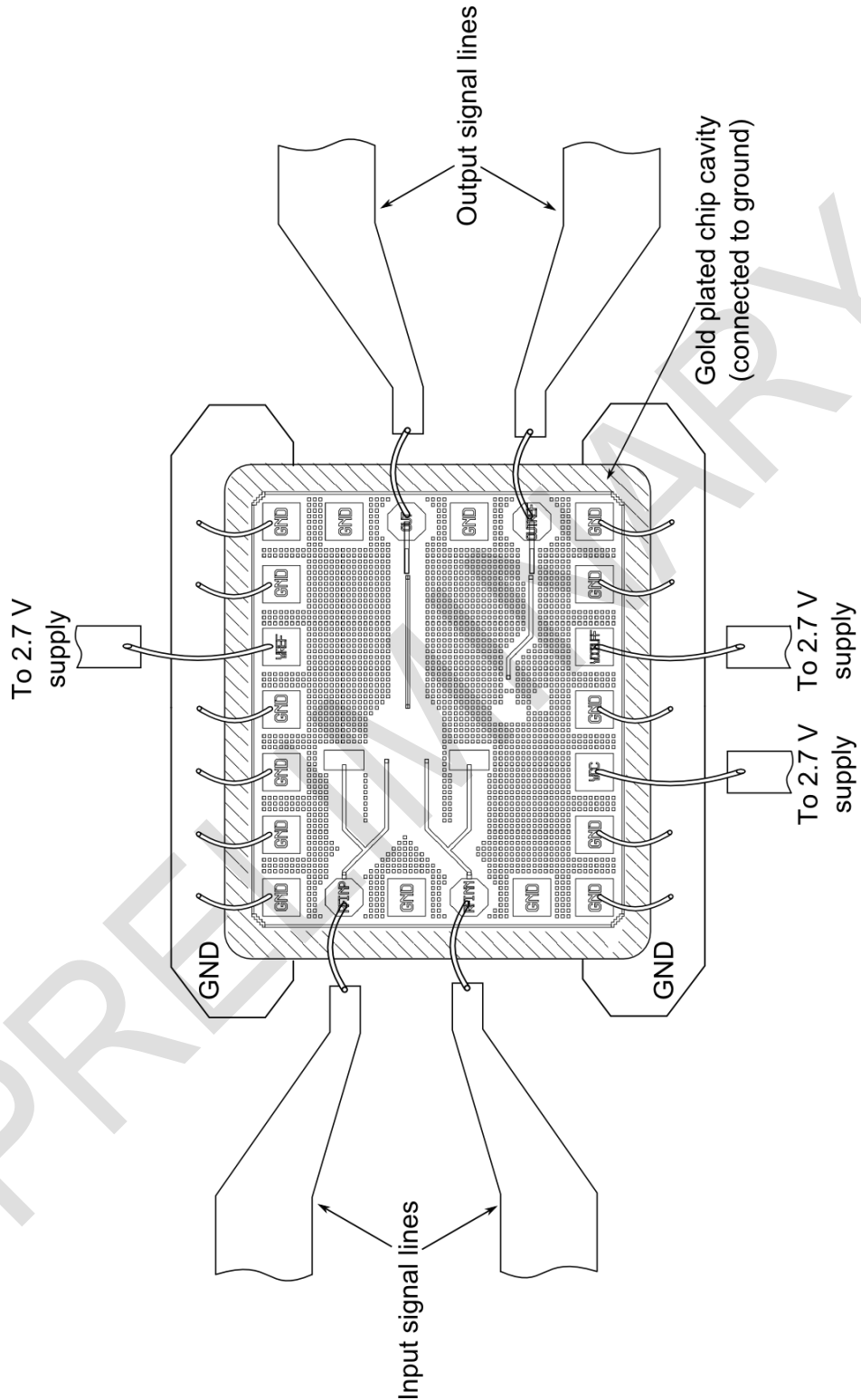


**ELECTROSTATIC SENSITIVE DEVICE  
HANDLE IN ESD SAFE ENVIRONMENT**

**Pad Descriptions**

Pad	Function	Description	Interface
VCC	Power	2.7 V DC supply	Power
VCCBUFF	Power	2.7 V DC output buffer supply	Power
VREF	Power	Reference voltage (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

**Assembly Diagram**



All bonds should be as short as possible.

**Revision information**

Version	Change List
1.0	Preliminary data

PRELIMINARY

**Notes:**

PRELIMINARY

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