

Typical applications

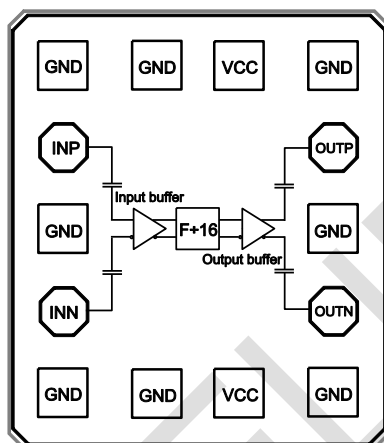
Frequency divider for 34 to 67 GHz PLL in:

- Short Range High Capacity Links,
- Mobile Terminals,
- Doppler Radar,
- Q and V Band Applications.

Features

- Low Power: 75 mW
- Differential Inputs/Outputs
- Wide Input Frequency Range
- Internally Matched to 100 Ω
- High Input Sensitivity
- Single DC Supply: 3 V
- Small Size: 0.54 x 0.47 mm²

Functional diagram



General description

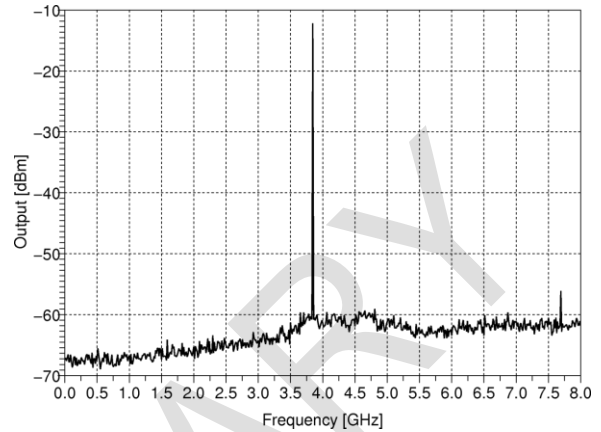
The TS-DIV16-60 is a low power Divide-by-16 injection locked frequency divider in SiGe:C HBT technology with size of only 0.54 x 0.47 mm². This device operates from 34 to 67 GHz with input minimum power of -10 dBm from a single +3 V DC supply. Output signal RMS jitter of only 38 fs enables the use in high performance applications.

Electrical specifications, $T_A=25\text{ }^\circ\text{C}$, 50 Ohm system, Measured with 1:2 Balun, $V_{CC}=3\text{ V}$

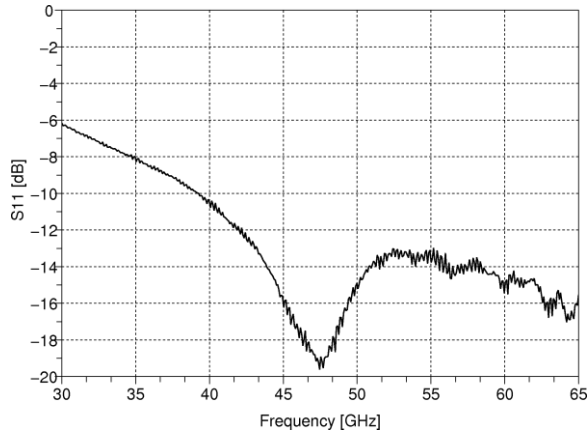
Parameter	Min	Typ.	Max	Units
Input frequency range ($P_{in} = -10\text{ dBm}$)	34 – 67			GHz
Input power		-10	5	dBm
Output power		-5		dBm
RMS jitter (from 1 kHz to 3 MHz), $f_{IN}=61.5\text{ GHz}$		38		fs
Residual PM (from 1 kHz to 3 MHz), $f_{IN}=61.5\text{ GHz}$		0.053		°
Phase noise @ 1 MHz offset, $f_{IN}=61.5\text{ GHz}$, $P_{IN}=-10\text{ dBm}$		-136		dBc/Hz
Supply current		25		mA

Output Spectrum (RBW= 1 MHz)

Fin= 61.5 GHz, Pin= -20 dBm

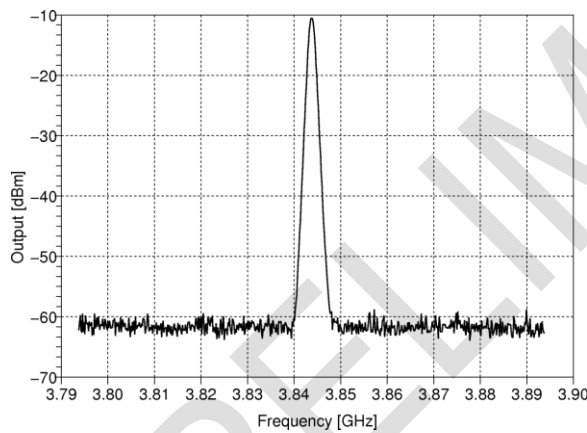


Input Return Loss



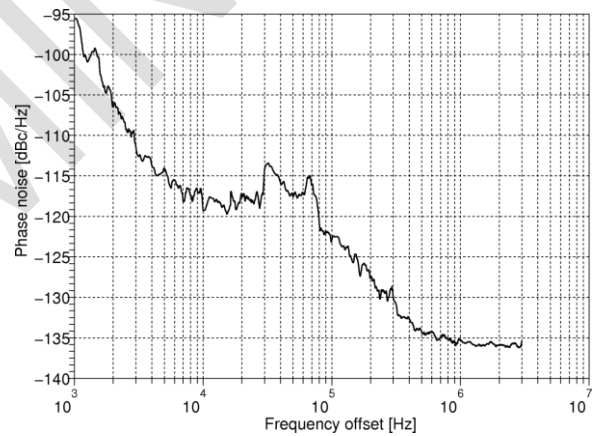
Output spectrum (RBW = 1 MHz)

Fin= 61.5 GHz, Pin= -10 dBm



Output Phase Noise

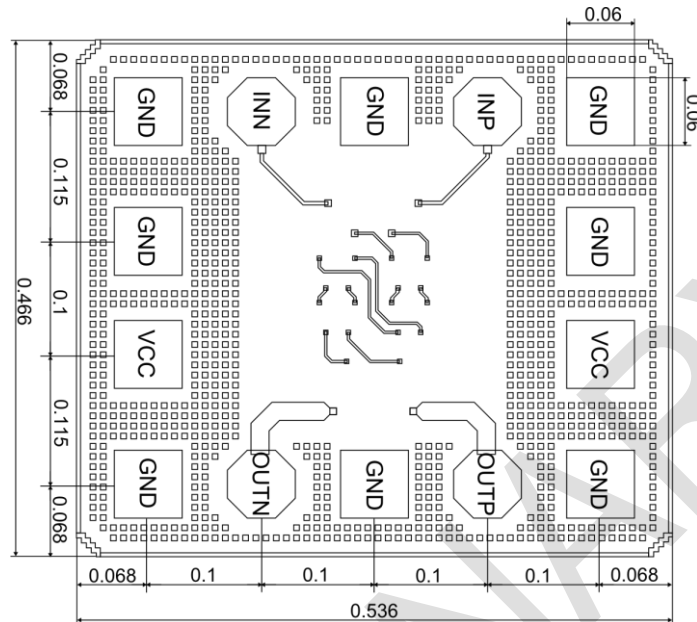
Fin= 61.5 GHz, Pin= -20 dBm



Absolute Maximum Ratings

Parameter	Min	Typ.	Max	Units
Supply voltage			3.2	V
Input Power			10	dBm
Operating Temperature	TBD		TBD	°C
Storage Temperature	-50		150	°C

Outline Drawing and Chip Identification Information

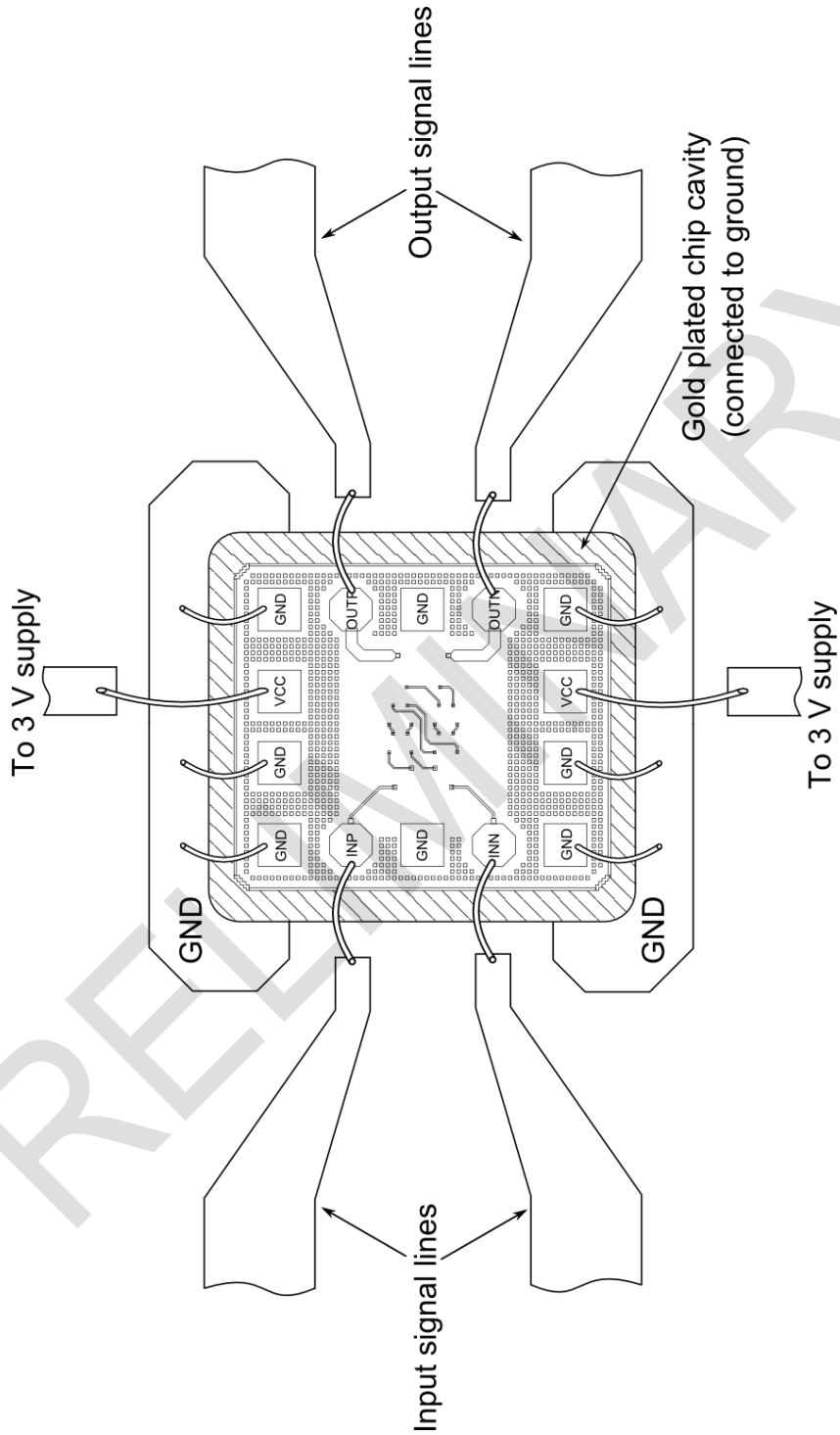


**ELECTROSTATIC SENSITIVE DEVICE
HANDLE IN ESD SAFE ENVIRONMENT**

Pad Descriptions

Pad	Function	Description	Interface
VCC	Power	3.0 V DC supply	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

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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