

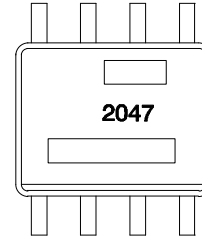
## 9GHz Frequency Divider by 4 Fixed Modulus Prescaler

### GaAs Monolithic Microwave IC

#### Description

The CND2047 is a low power consumption very high speed divider by 4 GaAs prescaler manufactured with a 0.7 $\mu$ m self aligned implanted MESFET process. The design is full differential input/output that allows direct drive into 50 $\Omega$  load.

The CND2047 is available in a low cost SOIC8 RoHS compliant plastic package.



SOIC8 plastic package

#### Main Features

- Very broad operating frequency range
- Low power dissipation: 300mW
- Single supply operation: 3V to 5V
- Low phase noise: -139dBc/Hz at 1KHz

#### Main Characteristics

Tamb= +25 $^{\circ}$ C

Symbol	Parameter	Min	Typ	Max	Unit
Vdd	Drain voltage	3	5	6	V
Pdiss	Power dissipation	120	300	400	mW
Fmax	Maximum input frequency	8	9		GHz

ESD Protections: Electrostatic discharge sensitive device observe handling precautions!

## Electrical Characteristics in SOIC8 package

Guaranteed electrical specifications over the temperature range of -40°C to +85°C but tested at Tamb=25°C under configuration described in Fig.1 (Vdd=5V; Differential inputs; Pin=0dBm; Zo=50 Ω)

Symbol	Parameter	Min	Typ	Max	Unit
Fmax	Maximum input frequency	8.5	9		GHz
Idd	Supply current		60	75	mA

Typical design information over the temperature range of -40°C to +85°C (Vdd=5, Zo=50 Ω)

Symbol	Parameter	Min	Typ	Max	Unit
Fmax	Maximum input frequency				
	Differential input Pin= -5dBm	8	8.5		GHz
	Pin= 0dBm	8.5	9		GHz
	Single input Pin= -5dBm	7.25	7.75		GHz
	Pin= 0dBm	7.75	8.25		GHz
Pout	Output power	-4	-1.5		dBm
Idd	Supply current		60	75	mA

Typical design information over the temperature range of -40°C to +85°C. (Vdd=3.3V, Zo=50 Ω)

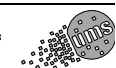
Symbol	Parameter	Min	Typ	Max	Unit
Fmax	Maximum input frequency				
	Differential input Pin= -5dBm	7	7.5		GHz
	Pin= 0dBm	7.5	8		GHz
	Single input Pin= -5dBm	6.5	7		GHz
	Pin= 0dBm	6.75	7.25		GHz
Pout	Output power	-7	-4.5		dBm
Idd	Supply current		40	55	mA

**Absolute Maximum Ratings (1)**

Tamb= 25°C

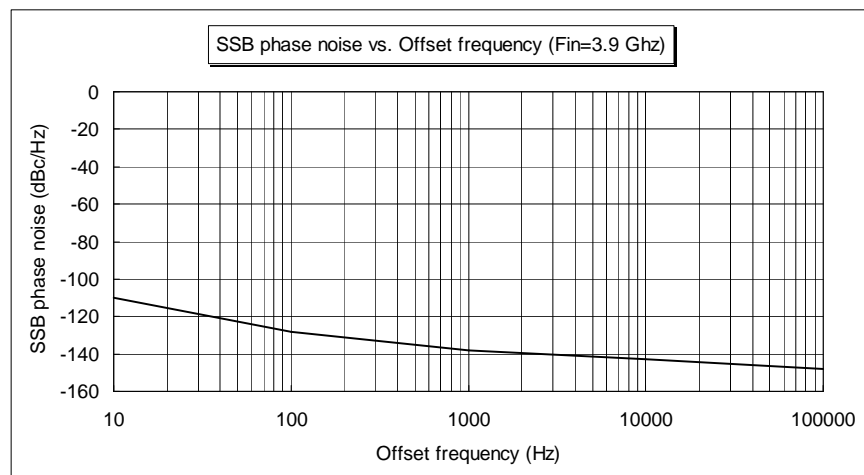
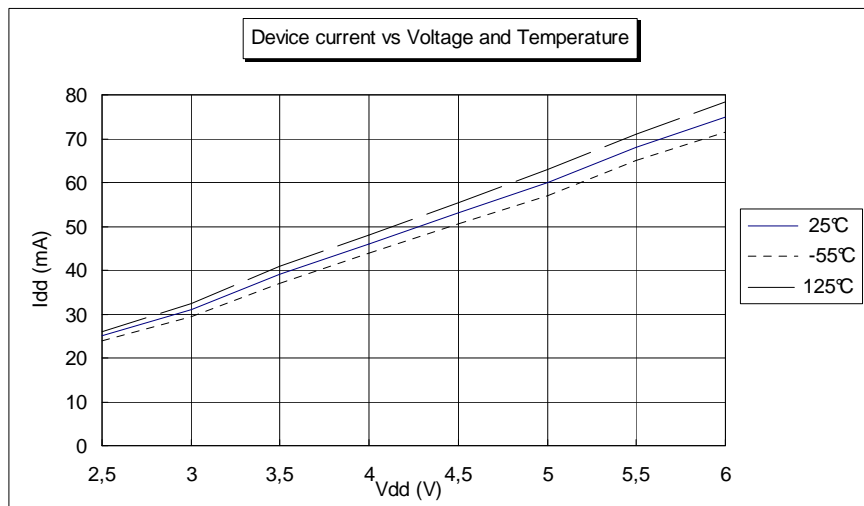
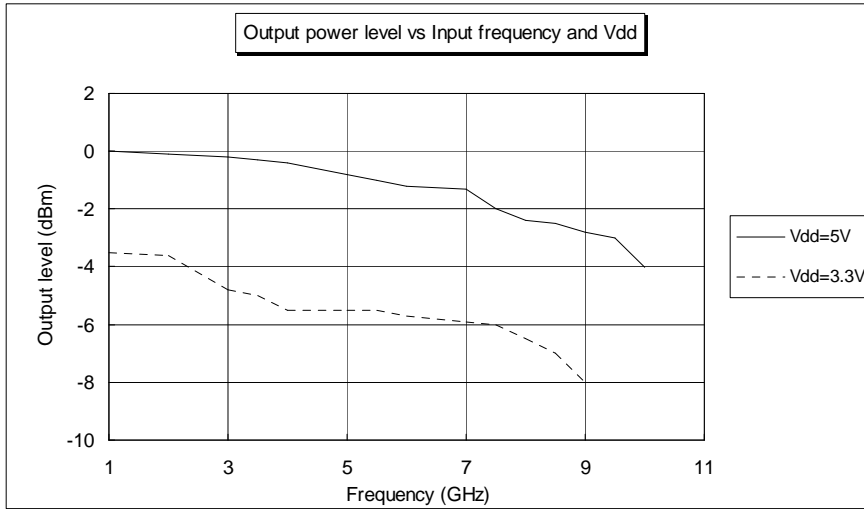
Symbol	Parameter	Values	Units
Vdd	Drain voltage	7	V
Pin	Maximum input power	15	dBm
Top	Operating temperature range	-40 to +85	°C
Tstg	Storage temperature range	-65 to +175	°C

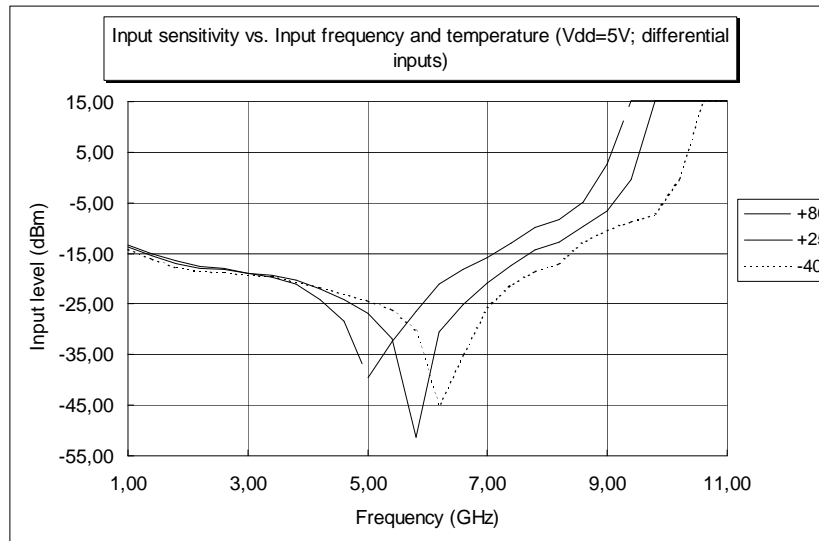
(1) Operation of this device above anyone of these parameters may cause permanent damage



Typical Characteristics

Tamb= 25°C, Zo=50 Ω, Vdd=5V





**SOIC8 package**

Typical bias tuning

T<sub>amb</sub>=25°C

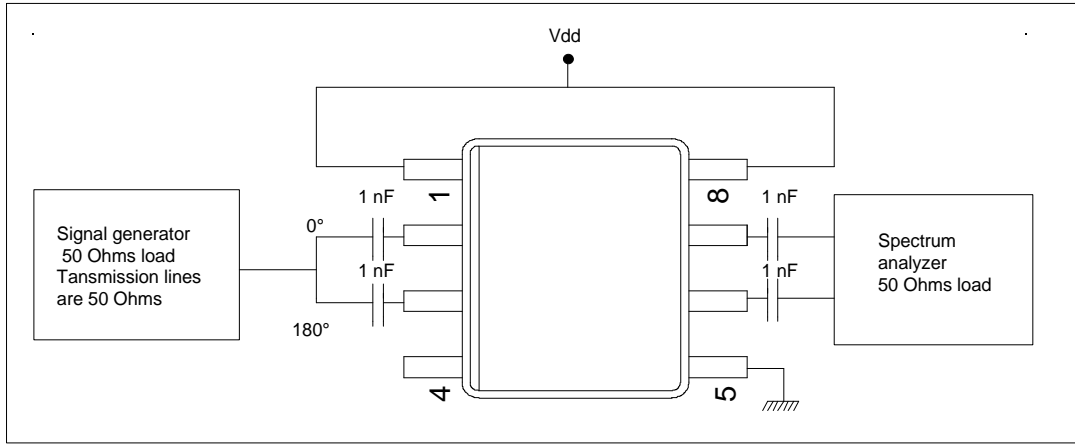


Fig.1: Typical measurement and RF biasing configuration (Differential inputs)

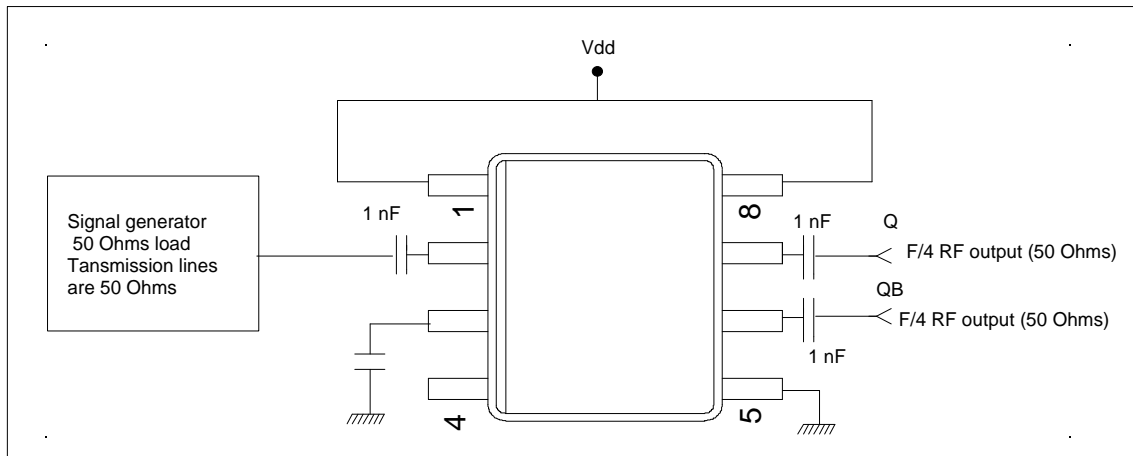


Fig.2: RF biasing configuration with single input

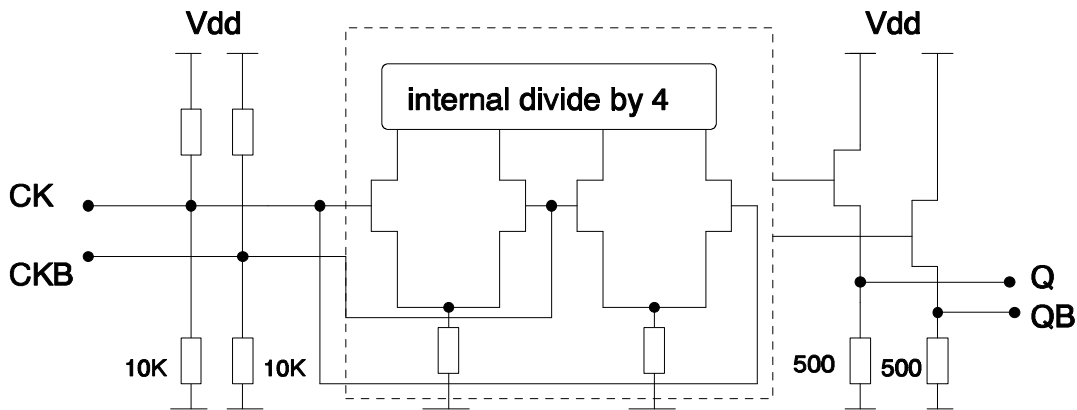
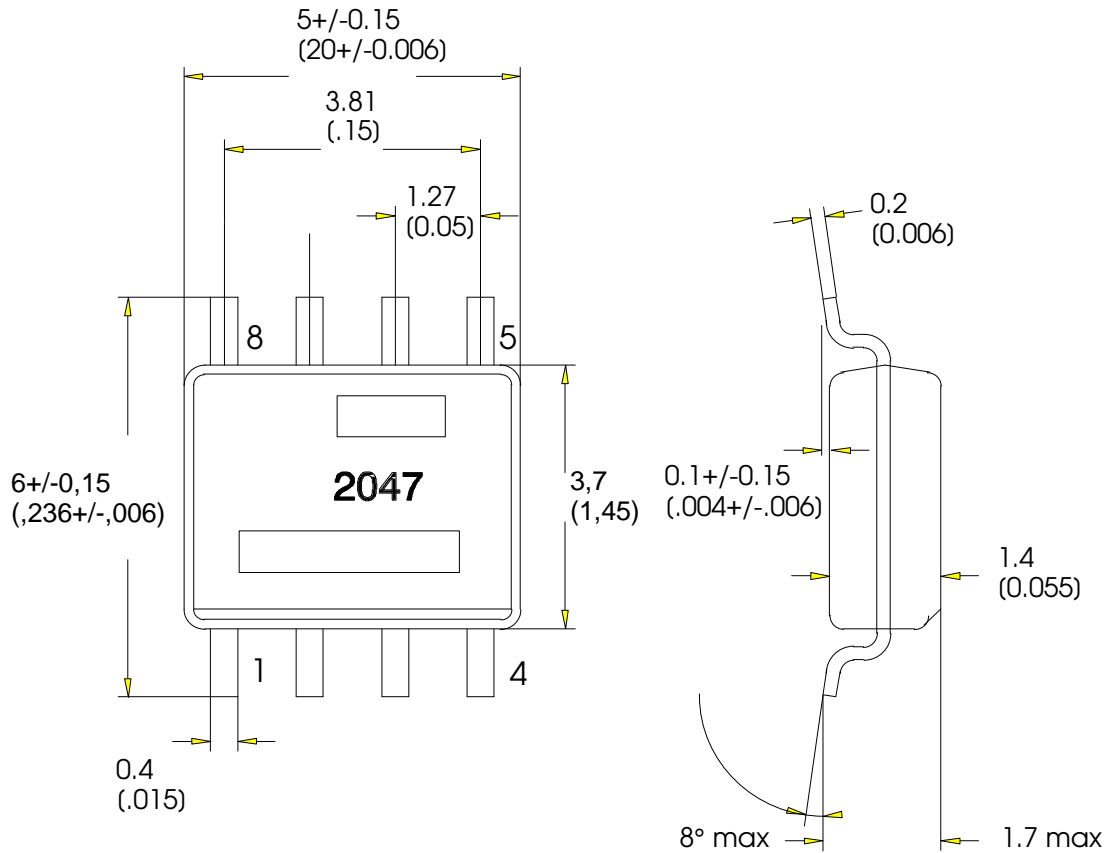


Fig.3: Chip block diagram

**SOIC8 Mechanical Data**



unité: mm

Unit: (In)

Tolérance générale: +/-0.05

(general tolerance: +/-0.002)

Pin out	Signal
1	Vdd
2	CK
3	CKB
4	Ground
5	Ground
6	QB
7	Q
8	Vdd

## Ordering Information

SOIC8 RoHS compliant package: CND2047-DAG/XY  
Stick: XY = 20 Tape& reel: XY = 21

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