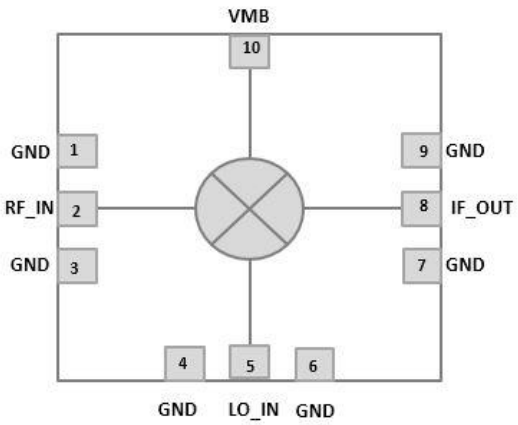
DOWN CONVERT MIXER

PRE-RELEASE DATASHEET RFDBDN08

Features:

- RF Frequency: 8-12GHz
- Conversion gain: 7dB
- Inputn return loss: 8dB
- DC Current : 9.35 mA
- DC drain bias voltage: 10V
- DC gate bias voltage: -0.5V
- 0.1 um GaAS pHEMT Technology

Functional Block Diagram



Description

RFDBDN08 (DNC Mixer) is IR Down converter Mixer Mixer used in receive application. The process used to design DNC Mixer is 0.1um GaAs pHEMT.

This Mixer employs two resistive FET switches to mix LO and RF. In a resistive FET mixer, where the LO of the mixer is applied to the gate. RF is applied to the drain and, consequently, IF is filtered from the drain. No drain dc-bias voltage is applied to the transistor. Gate bias can helps us achieve better linearity, minimum conversion loss with less LO power over the wideband down conversion operation.

Pin Configuration

Pin No.	Pin Name	Description
1,3,7,9,4,6	GND	RF Ground
2	RF_IN	RF_Input
5	LO_IN	LO Input
8	IF_OUT	IF output
10	VMB	Mixer Bias

Application:

- Satellite Communication.
- Point to point communication system.
- 5G RF transceiver
- Radar

Deliverables:

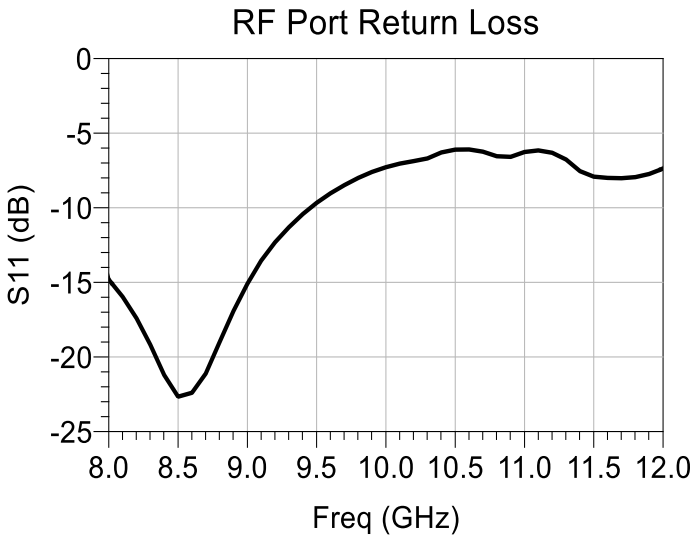
- Sample Ready Die
- Product Datasheet

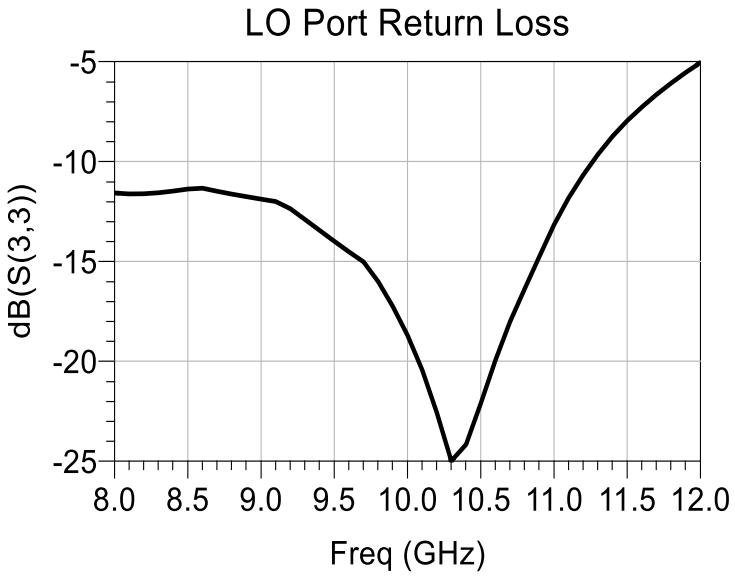
Electrical Specification: The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for a down conversion application with a +17dBm sine wave LO input and a mixer bias of -1 V.

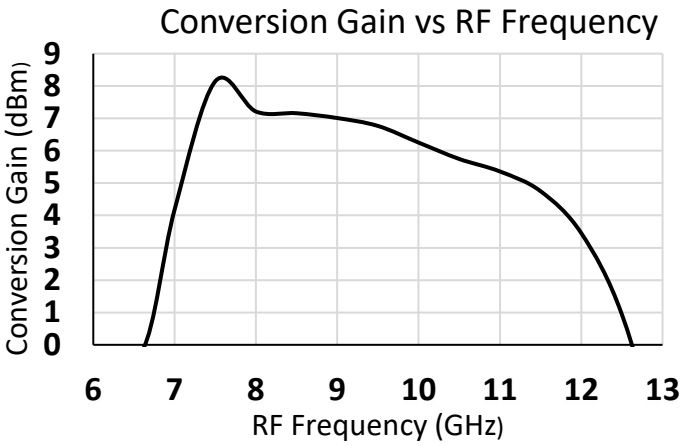
Parameter	Min	Typ	Max	Unit
RF (Port 1) Frequency Range	8		12	GHz
LO (Port 2) Frequency Range		0.1		GHz
IF (Port 3) Frequency Range	7.9		11.9	GHz
Conversion Gain (CG)		7		dB
Input Return Loss		8		dB
Output P1dB		2		dBm
DC Drain Bias Voltage		10		V
DC Gate Bias Voltage		0.5		V
DC Current Total		9.35		mA

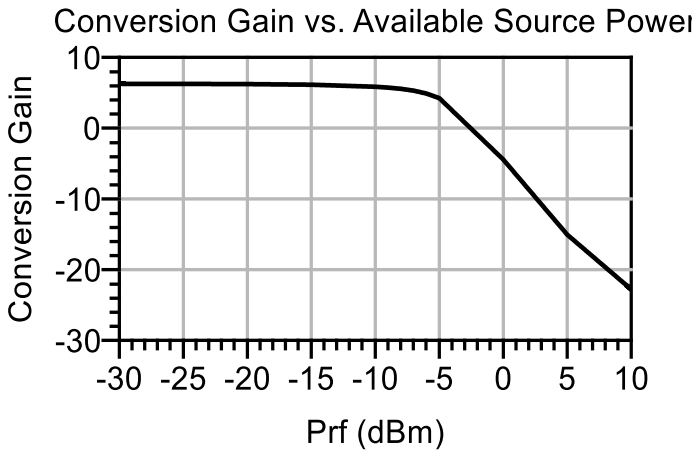
Typical Performance Plots: The test conditions and frequency plan below applies to all following sections, unless otherwise specified.

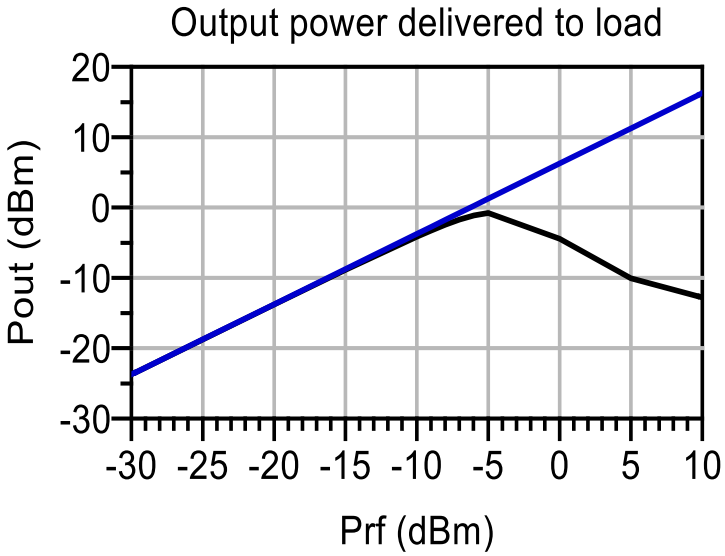
Frequency spacing = 100 MHz ,VMB (Mixer bias) = -0.5 V











Disclaimer

Contact information

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