



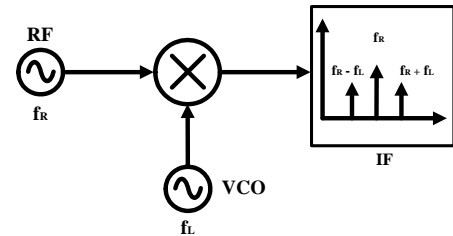
Gilbert Cell Down conversion Mixer

RM11

Description

The **RM11** is 1 to 6 GHz; Low noise, Gilbert Cell down conversion is designed using 0.5 um GaAs Enhancement mode psuedomorphic high electron mobility transistor (pHEMT). The device is designed for 802.11 b/g standard and WLAN MIMO system.

The Noise Figure SSB @ 2.5 GHz is 12 and it has die area of 1 mm x 0.85 mm. The device works with single +5 V supply voltage and draws 15 mA of current.



Applications

- IEEE 802.11 b/g WLAN
- Cellular System
- WiFi Systems
- ISM Band Systems
- Wireless Infrastructure
- Image Reject Mixer

Key Features

- Good Conversion Gain
- Noise figure 12 dB at 2.5 GHz
- Small Size, Low Cost

Electrical Specification

Conditions: $V_{cc} = 5\text{ V}$ & $T_A = 25\text{ }^\circ\text{C}$

Parameter	Min	Typical	Max	Units
RF Frequency Range	1		6	GHz
IF Frequency Range	5		600	MHz
Conversion Gain @ IF of 250 MHz	7		8.2	dB
IIM3 Intercept Point		6.9		dB
Noise Figure SSB @ 2.5 GHz		12		dB
Source impedance		50		Ohms
Supply Current		15		mA
Supply voltage		5		V

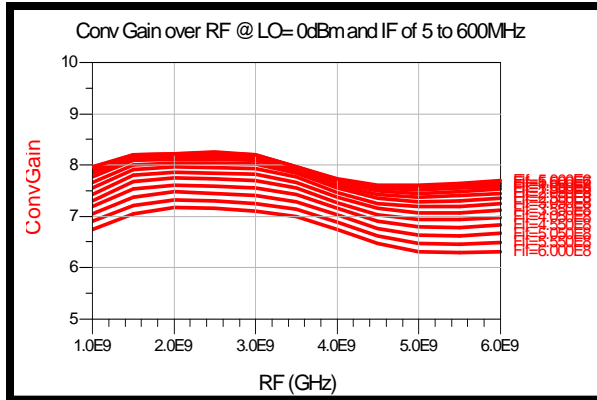


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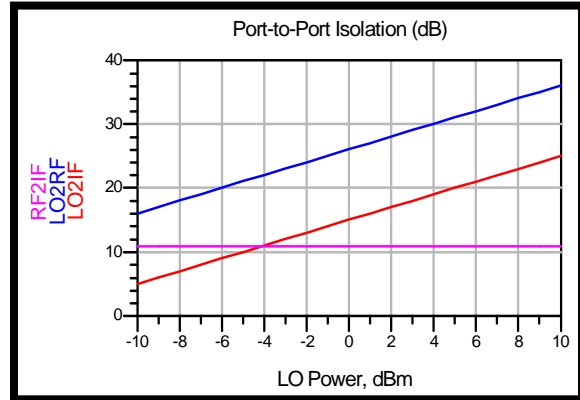
RM11

Simulated Results

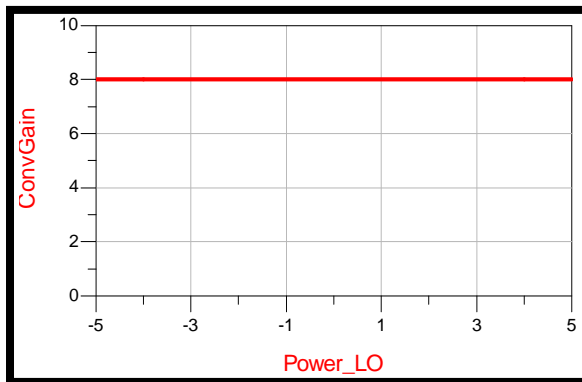
Gain Vs Freq with Fixed IF



Port to Port Isolation



Gain Vs Power



Layout

