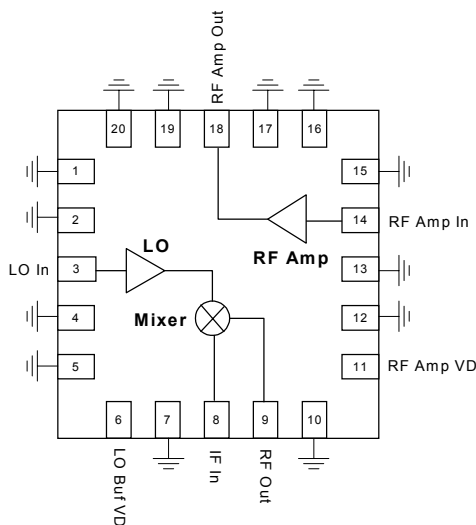


Applications

- U-NII band RF upconverter
- ISM band transmitter equipment
- 802.11a, HIPERLAN/2 transmitter



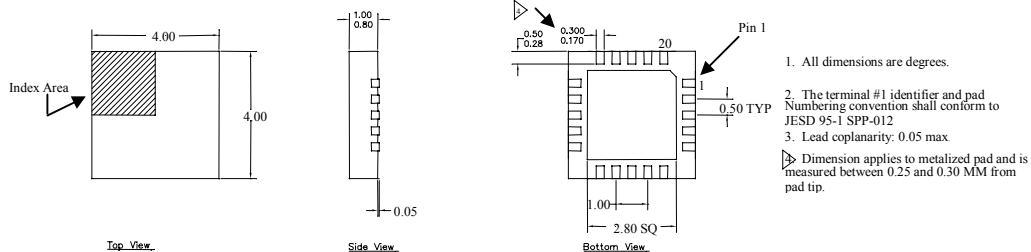
Functional Block Diagram

Product Description

The RFS5007 upconverter is a high-performance GaAs MESFET IC designed for transmitter applications in the 5.1-5.9 GHz (U-NII) frequency band. With high input IP3, the part is ideal for fixed wireless and WLAN applications. The RFS5007 combines a double-balanced mixer, LO buffer and RF amplifier in a single low-cost surface-mount package. All RF, IF and LO ports are internally matched to 50 ohms and the IC operates off of a single 5V supply.

Product Features

- Single-chip RF U-NII upconverter
- Matched to 50 ohms
- 15 dBm mixer input IP3



4mm Package Outline



5.1-5.9 GHz U-NII Upconverter

Parameter ¹	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					
RF Frequency Range	5150		5850	MHz	
LO Frequency Range	5000		6000	MHz	
IF Frequency Range	100		900	MHz	
Cascaded Gain		-6		dB	
Cascaded Output P _{1dB}		8		dBm	
RF Amplifier					
Noise Figure		5		dB	Over a 100 MHz bandwidth
Gain		7		dB	
Output IP3		15		dBm	
Gain Flatness		±0.5		dB	
Reverse Isolation		35		dB	
Input Return Loss	10			dB	
Output Return Loss	10			dB	
Current Consumption		30		mA	
LO Input					
LO Input Level		5		dB	
Input Return Loss	10			dB	
Current Consumption		30		mA	
Mixer					
Noise Figure	12	13	14	dB	IF=400 MHz Over a 100 MHz bandwidth
Input IP3		15		dBm	
Conversion Gain	-12	-13	-14	dB	
Gain Flatness		±0.5		dB	
IF Return Loss	10			dB	LO Power at mixer=15 dBm
RF Return Loss	10			dB	
LO-RF Isolation	30	35	40	dB	
Power Supply					
Operating Voltage		5		V	
Current Consumption		60		mA	

Note 1: Test Conditions: V_{dd}=5.0 V, RF=5775 MHz, LO=5375 MHz, IF=400 MHz, LO input=5 dBm, T=25° C, unless otherwise specified.

Absolute Maximum Ratings

Parameter	Rating	Unit
DC Power Supply	8.0	V
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-55 to +150	°C
Maximum RF input level	+10	dBm



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