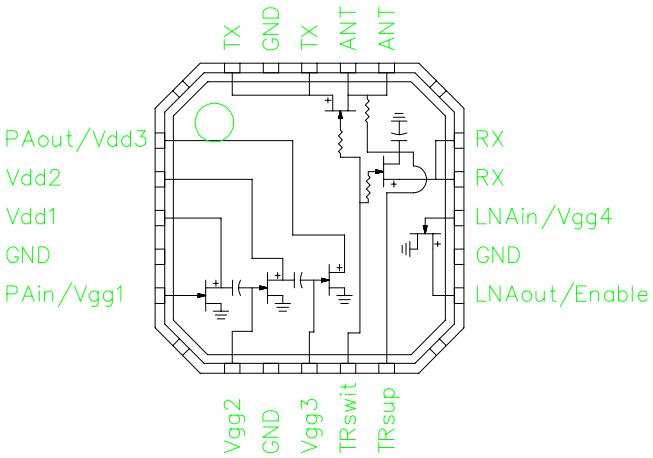
3.3V Integrated RF Front-End for 2.4 GHz ISM
ITT2306GL

ADVANCED INFORMATION

FEATURES

- Build a Bluetooth or HomeRF radio by connecting directly to popular single chip transceivers like the National LMX3162.
- 3.3V operation
- Single positive supply
- 100% duty cycle
- Ultra small 20 Pin MLP full downset plastic package
- Self-aligned MSAG®-Lite MESFET process



Package bottom is electrical and thermal ground

DESCRIPTION

The ITT2306GL is an integrated RF front-end based on GaAsTEK's GaAs Self-Aligned MSAG® MESFET process. This product has an integrated power amplifier, low noise amplifier, and switch in one surface mount package. It connects directly to popular single chip transceivers like the National Semiconductor LMX3162.

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{DD}	+5.5	V
Reverse DC Supply Voltage	$-V_{DD}$	-0.7	V
RF Input Power, PA_{IN}	P_{IN}	+10	mW
RF Input Power, LNA_{IN}	P_{IN}	+10	mW
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-40 to +175	°C

ELECTRICAL CHARACTERISTICS T_s (Solder Point of Downset Paddle) = 40 °C

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency	f	2400	—	2497	MHz
Transmit Path (Power Amplifier + T/R Switch) $V_{DD1,2,3}$= 3.3V, P_{IN}=-9 dBm, TR_{SUP}=3.3V, TR_{SWIT}=3.3V, LNA_{ENABLE}=0.0V, f=2450MHz					
Load Power (at Ant)	P_{OUT}		23		dBm
Current Consumption	$I_{DD1,2,3}$		280		mA
Third-Order Intercept Point (f_1=2450 MHz, f_2 = 2451 MHz, P_{IN} = -20 dBm SCL)	IP_3		39		dBm
Harmonics	—		-30		dBc
Duty Cycle	—			100	%
Forward Isolation (RF_{IN} to Ant) $V_{DD1,2,3}$=0.0V	—		46		dB
Forward Isolation (ANT to LNA_{OUT})	—		34		dB
Receive Path (T/R Switch + Low Noise Amplifier) $V_{DD1,2,3}$= 0.0V, TR_{SUP}=3.3V, TR_{SWIT}=0.0V, LNA_{ENABLE}=2.4V, f=2450MHz					
Current Consumption	LNA_{ENABLE}		5		mA
Noise Figure (Ant to LNA_{OUT})	NF		4		dB
Gain (Ant to LNA_{OUT})	G		14		dB
Third-Order Input Intercept Point (f_1=2450 MHz, f_2 = 2451 MHz, P_{IN} = -20 dBm SCL)	IIP_3		3.2		dBm
Reverse Isolation (LNA_{OUT} to ANT)	—		20		dB
Thermal Resistance (Junction of 3rd stage FET to solder point of package bottom)	R_{th}		37.5		°C/W

GaAsTEK
5310 Valley Park Drive
Roanoke, VA 24019 USA
www.gaastek.com
Tel: 1-540-563-3949
1-888-563-3949 (USA)
Fax: 1-540-563-8616