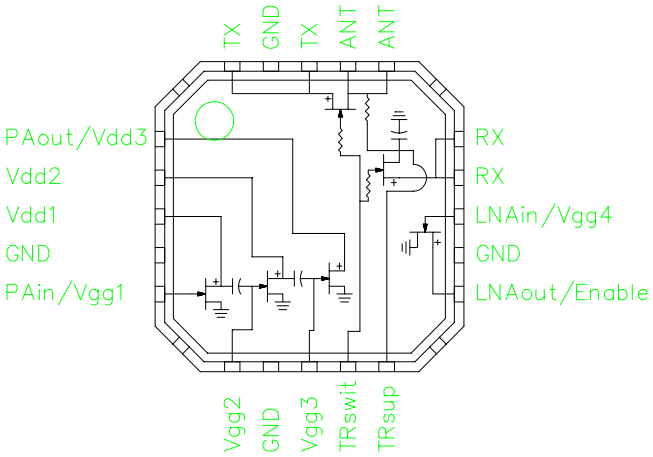
3.0V Integrated RF Front-End for Bluetooth
ITT2307GL

ADVANCED INFORMATION

FEATURES

- Extend the range of Bluetooth devices by connecting this device directly to single chip transceivers
- 3.0V operation
- Single positive supply
- Output power control
- Low current “bypass” mode
- 100% duty cycle
- Ultra small 20 Pin MLP full downset plastic package
- Self-aligned MSAG®-Lite MESFET process

ATTENTION
Static-Sensitive Devices
Handling Precautions Required



Package bottom is electrical and thermal ground

DESCRIPTION

The ITT2307GL 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 to extend their range. The power amplifier features a low current “bypass” mode and output power control via V_{DD1}.

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) $V_{DD1,2,3}$= 3.0V, P_{IN}=-9 dBm, TR_{SUP}=3.0V, TR_{SWIT}=3.0V, LNA_{ENABLE}=0.0V, f=2450MHz					
Load Power (at Ant)	P_{OUT}		21		dBm
Current Consumption	$I_{DD1,2,3}$		100		mA
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}=3.0V, 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
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

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