



## 5 PIN DESCRIPTION

Name	Direction	Description
integrator_i10u	IO	Integrator reference current (10uA)
IdoPA_i5u	IO	Voltage regulator reference current
INN	IO	Analog differential input
INP		
PA_EN	I	PA enable/disable
IdoPA_EN	IO	Voltage regulator enable / disable
IdoPA_Vref	IO	Voltage regulator reference voltage
PA_OUT	IO	PA output
PA_adjPow<6:0>	I	Supply voltage adjustment of PA output transistor
PA_buf1_EN	O	PA buffer enable/disable
Pa_dutyAdj<7:0>	I	Preamplifier output duty cycle adjustment
PA_capAdj<3:0>	I	Output capacity adjustment
PA_VCC	IO	PA supply voltage
VCCH	IO	External supply voltage (1.9 ... 3.6 V)
VPA	IO	Stabilized supply voltage (1.9 .... 2.3 V)
PA_GND	IO	PA ground
GNDA	IO	Ground

## 6 LAYOUT DESCRIPTION

The block dimensions are given in the table 1.

Table 1: Block dimensions

Dimension	Value	Unit
Height	713	um
Width	2033	um

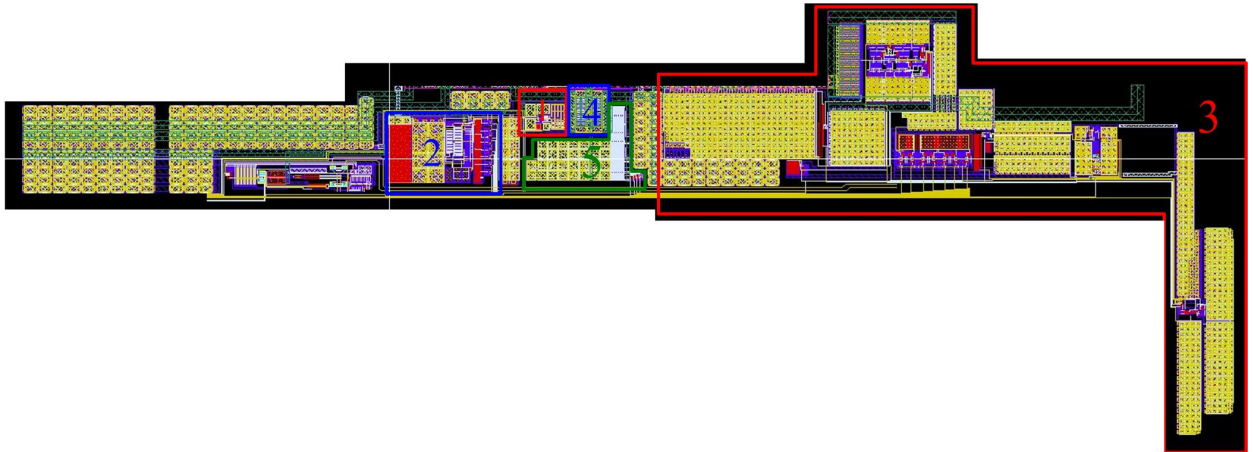


Figure 2: Device layout view

1. Preamplifier
2. Duty cycle adjustment system
3. PA voltage regulator
4. PA core
5. Trimmer capacitors

## 7 OPERATING CHARACTERISTICS

### 7.1 TECHNICAL CHARACTERISTICS

Technology \_\_\_\_\_ iHP SiGe BiCMOS 0.25 um  
 Status \_\_\_\_\_ silicon proven  
 Area \_\_\_\_\_ 0.4 mm<sup>2</sup>

### 7.2 ELECTRICAL CHARACTERISTICS

The values of electrical characteristics are specified for  $V_{cc} = 1.9 \div +2.3$  V and  $T_a = -45 \div +85$  °C. Typical values are at  $V_{cc} = 2.2$  V,  $T_a = 27$  °C, unless otherwise specified.

Parameter	Symbol	Condition	Value			Unit
			min	typ	max	
Supply voltage	$V_{cc}$	-	1.9	2.2	2.3	V
External supply voltage	$V_{cch}$	-	1.9	2.5	3.6	V
Operating temperature range	$T_a$	-	-45	27	85	°C
Operating frequency range	F	-	130	-	930	MHz
Output resistance	$R_{out}$	without matching circuit	-	50	-	$\Omega$
Peak-to-peak differential input voltage	$A_{in\ p-p}$	-	400	-	1300	mV
DC operating point	U	-	-	400	-	mV
Maximum output power	$P_{out\_max}$	F =130-150 MHz	-	10	-	dBm
		F =300-450 MHz	-	10	-	
		F =905-935 MHz	-	8	-	
Minimum output power	$P_{out\_min}$	F =130-150 MHz	-	-20	-	dBm
		F =300-450 MHz	-	-20	-	
		F =905-935 MHz	-	-20	-	
Relative harmonic level	$P_{harm}$	F =130-150 MHz	-	-39	-	dB
		F =300-450 MHz	-	-39	-	
		F =905-935 MHz	-	-43	-	
Current consumption in an active mode at maximum power output	$I_{ccmaxP}$	F =130-150 MHz	-	42.3	-	mA
		F =300-450 MHz	-	38	-	
		F =905-935 MHz	-	23	-	
Current consumption in a standby mode at minimum power output	$I_{ccminP}$	F =130-150 MHz	-	2.5	-	mA
		F =300-450 MHz	-	5.1	-	
		F =905-935 MHz	-	9	-	
Input logic-high level	$V_{IH}$	For digital inputs	$0.7V_{cc}$	-	$V_{cc}+0.25$	V
Input logic-low level	$V_{IL}$		-0.25	-	0.3	V

## **8 DELIVERABLES**

IP contents:

- Schematic or NetList
- Layout or blackbox
- Extracted view (optional)
- GDSII
- DRC, LVS, antenna report
- Test bench with saved configurations (optional)
- Documentation