3 to 5 GHz Power Amplifier

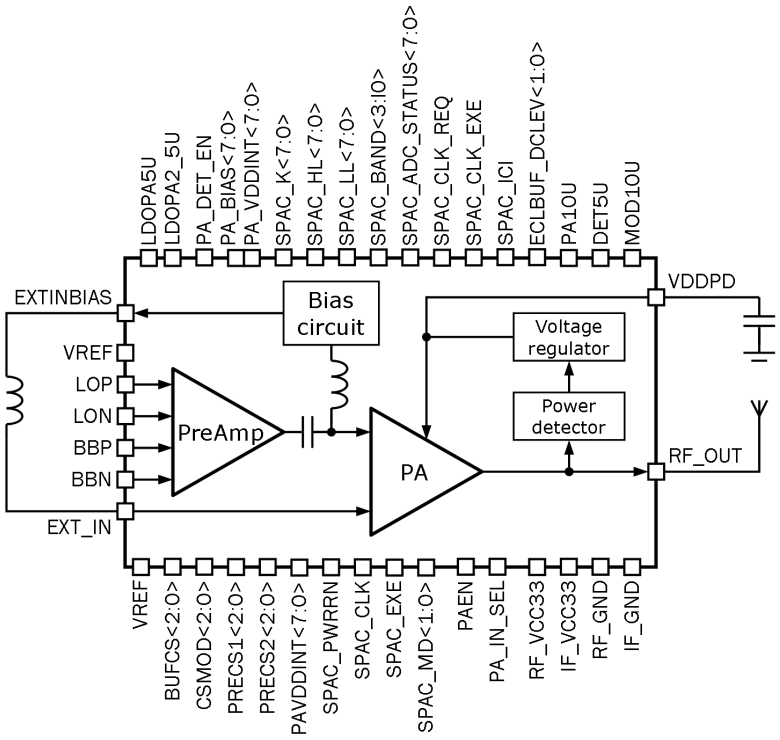
OVERVIEW

130iHP_PA_02 is E class power amplifier (PA). Voltage regulator is used due to transistor low breakdown voltage and PA inductive load. Such solution also provides wide range output power adjustment. Third type band-pass filter is used to provide wide bandwidth and set output impedance to 50Ohm.

IP technology: iHP SiGe BiCMOS 0.13 um.

IP status: silicon proven.

Area: 1.5mm^2.



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	V_{RF_VCC33}	-	2.7	3.3	3.6	V
	V_{IF_VCC33}	-	2.7	3.3	3.6	V
Operating temperature range	T_a	-	-45	27	85	°C
Frequency range	F	-	3	-	5	GHz
PA supply voltage	V_{ddPa}	-	-	-	1.3	V
Maximum output power	P_{out_max}	F = 3GHz	7.0	8.3	-	dBm
		F = 4GHz	6.8	8.0	-	
		F = 5GHz	5.0	5.3	-	
Current consumption at 5 dBm output power	I_{cons_5dBm}	F = 3GHz	-	35.1	-	mA
		F = 4GHz	-	33.4	-	
		F = 5GHz	-	32.8	-	
Current consumption in a standby mode	I_{stb}	-	-	16	-	nA
2nd harmonic suppression at 5 dBm output power	ΔP_2	F = 3GHz	-	12.6	-	dB
		F = 4GHz	-	29.9	-	
		F = 5GHz	-	38.4	-	
3rd harmonic suppression at 5 dBm output power	ΔP_3	F = 3GHz	-	36.5	-	dB
		F = 4GHz	-	58.7	-	
		F = 5GHz	-	56.9	-	
Output impedance	R_{out}	Differential	-	50	-	Ohm
Digital input-logic high	V_{IH}	-	$0.7V_{RF\_VCC33}$	-	V_{RF_VCC33}+0.25	V
Digital input-logic low	V_{IL}		-0.25	-	0.3	V