

0.2 to 3GHz power amplifier

OVERVIEW

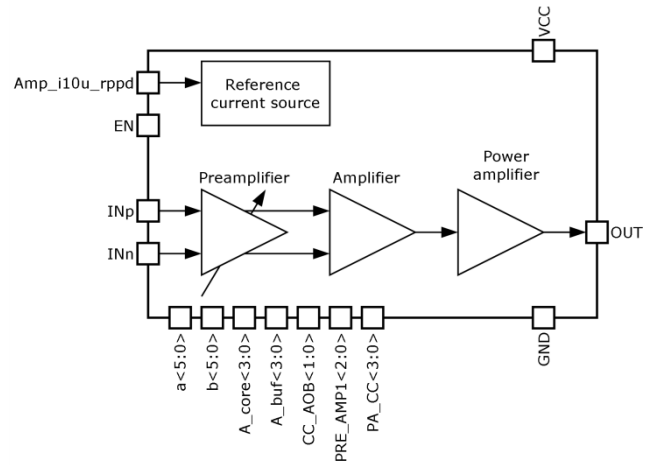
130iHP_PA_03 is based on AB class power amplifier with a preamplifier. The block is designed to set the required output signal and provides a wide range of output power adjustment. First cascade operates as preamplifier with tunable gain. Second cascade is a fixed-gain cascode differential amplifier. Third cascade amplifies and transmits signal to the output of the circuit in the wide frequency range from 200 to 3000 MHz.

PA output impedance is 50 Ω .

IP technology: iHP SiGe BiCMOS 130nm.

IP status: silicon proven.

Area: 0.17mm².



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Condition	Value			Unit
			min	typ.	max	
Supply voltage	V_{cc}	-	2.25	2.7	3.3	V
Temperature range	T	-	-45	25	+85	$^{\circ}\text{C}$
Reference input current	I_{ref}	-	-	10	-	μA
Current consumption	I_{cc}	P = 0 dBm	-	35	-	mA
Current consumption in a standby mode	I_{std}	-	-	10	-	nA
Frequency range	F	-	200	-	3000	MHz
Gain control	G	-	-	28	-	dB
Intermodulation immunity	IM3	P = 0 dBm	-	-46.6	-	dBc
Maximum output power	$P_{out\ max}$	50 Ω , F = 200...3000MHz	0	-	-	dBm
Minimal output power	$P_{out\ min}$	50 Ω , F = 200...3000MHz	-	-	-24	dBm
PA gain control step	ΔP	-	-	1.5	-	dB
Output impedance	R_{out}	-	-	50	-	Ω
Input logic high level	V_{IH}	For digital inputs	$V_{cc}-0.5$	-	V_{cc}	V
Input logic low level	V_{IL}		0	-	0.5	V