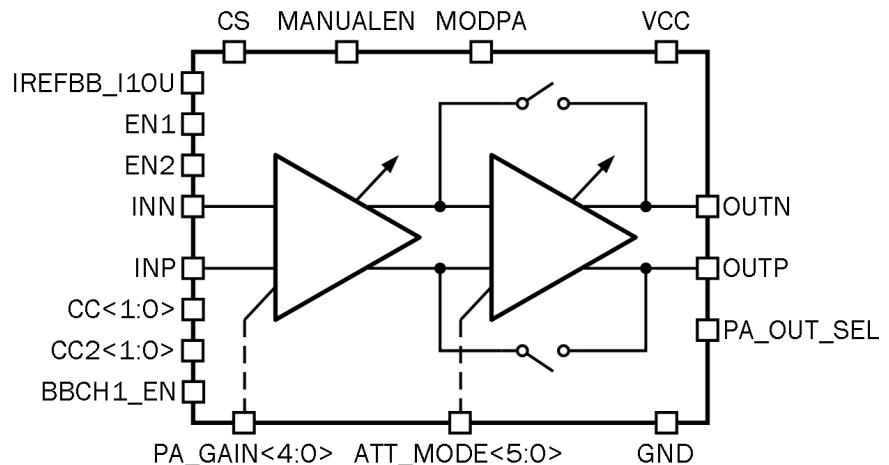


2 to 100 MHz power amplifier with attenuator

OVERVIEW

065TSMC_PA_02 is a baseband power amplifier with attenuator. The block consists of attenuator, 1-stage amplifier with tunable gain. Attenuator reduces output power by 1dB from 0 to 60 dB. The amplifier gain is adjustable in increments of 2 dB.

IP technology: TSMC CMOS 65 nm.
IP status: silicon proven.
Area: 0.266mm².



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	V _{CC}	-	2.375	2.5	2.625	V
Temperature range	T _j	-	-40	+85	+125	°C
Input reference current	I _{REF}	-	-	10	-	uA
Input power signal level	P _{IN}	-	-	-11	-9	dBm
Current consumption	I _{CC}	P _{OUT} = 5dBm	-	138	-	mA
Current consumption in standby mode	I _{STB}	-	-	180	-	nA
Pass band	F	-	2	-	100	MHz
Maximum output power	P _{MAX}	-	-	14.5	-	dBm
Minimum output power	P _{MIN}	-	-	-60	-	dBm
Attenuator gain control	G _A	Adjustable	-60	-	0	dB
PA gain control	G _P	Adjustable	-4	-	26	dB
Attenuator gain control step	A _K	-	0.8	1	1.2	dB
PA gain control step	P _K	-	1.8	2	2.2	dB
Third order intermodulation	IM3	P _{OUT} = 5dBm	-	51	-	dB
Input impedance	R _{IN}	Differential input	-	25	-	Ohm
Output impedance	R _{OUT}	Differential output	-	25	-	Ohm
Input high-level voltage	V _{IH}	For digital input	0.85V _{CC}	-	1.15V _{CC}	V
Input low-level voltage	V _{IL}		-0.2	-	+0.2	V