

25 to 1750 MHz power amplifier

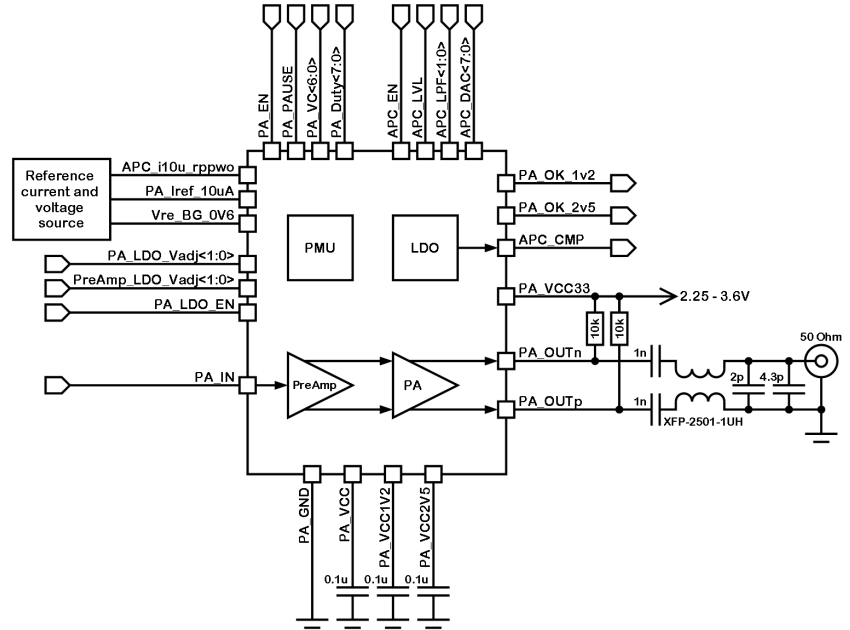
OVERVIEW

055TSMC_PA_03 is power amplifier block in range from 25 to 1750 MHz. The block consists of C-class power amplifier, pre-amplifier, power management unit and LDO regulator. The pre-amplifier is intended to pre-amplify the input signal and match the block's input impedance with the power amplifier impedance. The power management unit is intended to power the components of the block. The adjustable LDO regulator is intended to control the output power of the power amplifier.

IP technology: TSMC CMOS 55nm technology.

IP status: silicon proven.

Area: 1.2 mm².



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	VCC33	-	2.25	2.5	3.6	V
Operating temperature range	T _j	-	-40	+27	+85	°C
Current consumption	IDD	Active mode @ P _{max} , F = 1.5 GHz	-	62	-	mA
		Active mode @ P _{min} , F = 1.5 GHz	-	45	-	
		Standby mode	-	2	-	uA
Frequency range	F	F _{min}	-	25	-	MHz
		F _{max}	-	1750	-	
Power range	P	P _{min} @ F = 1.5 GHz	-	-37	-	dBm
		P _{max} @ F = 1.5 GHz	-	+8	-	
2nd harmonic power	P _{H2}	P _{min} @ F = 1.5 GHz	-	-58	-	dBm
		P _{max} @ F = 1.5 GHz	-	-26	-	
3rd harmonic power	P _{H3}	P _{min} @ F = 1.5 GHz	-	-50	-	dBm
		P _{max} @ F = 1.5 GHz	-	-21	-	
Output resistance	R _{OUT}	-	-	50	-	Ohms
PMU output voltage	V _{PMU}	-	-	2.5	-	V
LDO output voltage	V _{LDO}	-	-	1.2	-	V
Input logic-low level	V _{IL}	For digital inputs	0	-	0.25	V
Input logic-high level	V _{IH}		V _{CC33} -0.25	-	V _{CC33}	
Output logic-low level	V _{OL}	For digital outputs	0	-	0.25	V
Output logic-high level	V _{OH}		V _{CC33} -0.25	-	V _{CC33}	