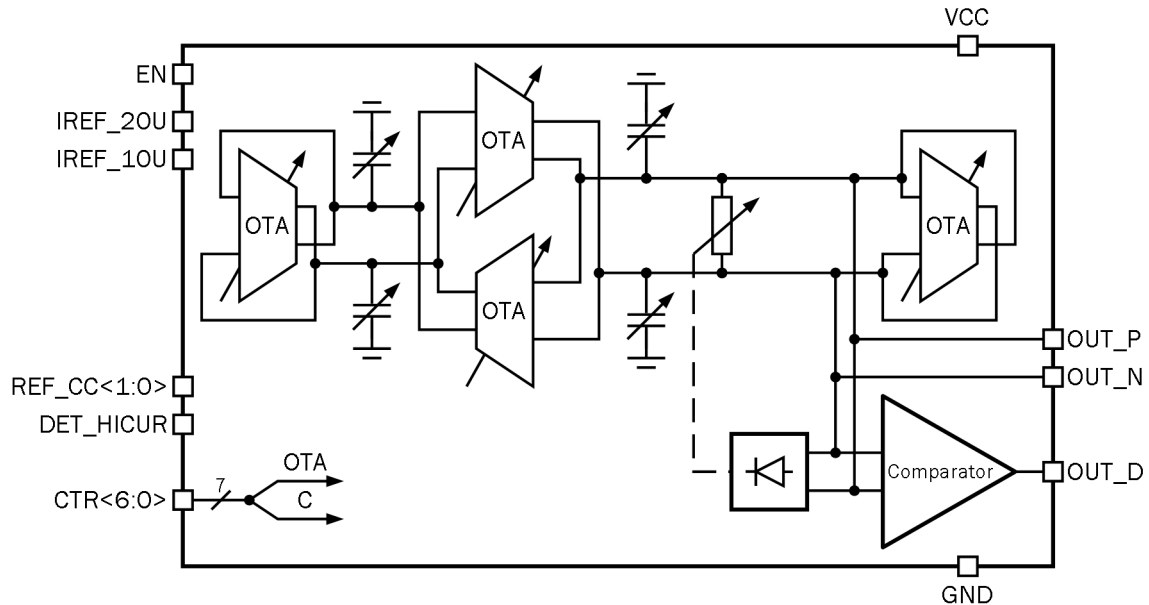


7 to 150 MHz digitally controlled oscillator
OVERVIEW


180SMIC_OSC_02 is an OTA-C based oscillator with both analog and digital outputs. Analog differential clock is provided at OUT_P, OUT_N pins, and digital - at OUT_D pin. The block consists of four adjustable OTA, AGC detector and comparator and requires two reference currents of 10uA and 20uA. Frequency adjustment in wide range (from 7 to 150 MHz) is provided by digital control input CTR<6:0>.

IP technology: SMIC CMOS 0.18 um.

IP status: silicon proven.

Area: 0.124mm².

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Units
			min	typ.	max	
Supply voltage	V _{CC}	-	1.7	1.8	1.9	V
Operating temperature range	T _j	-	-45	+27	+90	°C
Input reference current	I _{REF10u}	-	-	10	-	uA
	I _{REF20u}	-	-	20	-	
Start time	t _{start}	-	-	-	1.5	ms
Peak-to-peak analog signal	A	-	-	120	-	mV
Oscillation frequency range	F _{OUT}	-	7	-	150	MHz
LPF offset error	δ	-	-	-	5	%
Current consumption	I _{CC}	-	-	-	3.7	mA
Current consumption in a standby mode	I _{STB}	-	-	-	0.6	uA
Input logic-high level	V _{IH}	For digital inputs	0.7 V _{CC}	-	3.6	V
Input logic-low level	V _{IL}		-0.25	-	0.3	V