

## 10 to 50 MHz crystal oscillator

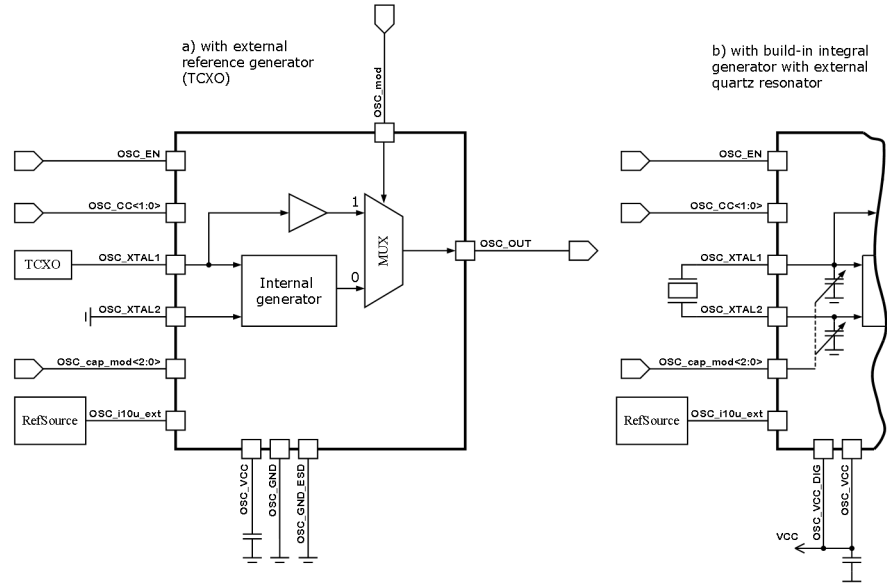
### OVERVIEW

180TSMC\_OSC\_04 is a reference frequency generator designed to form a reference signal in the frequency range from 10 to 50MHz. Both an internal and an external generator can be used as a reference signal source. Tunable internal load capacitance allows to adjust the quartz resonator frequency without using external components. The reference signal indicator informs the control system about the generation failure or the reference signal absence.

IP technology: TSMC SiGe BiCMOS 180nm

IP status: silicon proven

Area: 0.081mm<sup>2</sup>



### ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Unit	
			min	typ.	max		
Supply voltage	V <sub>CC</sub>	-	2.2	2.85	3.6	V	
Operating temperature range	T <sub>j</sub>	Nominal	-40	+27	+100	°C	
Current consumption	I <sub>CC</sub>	XTAL mode	0.9	-	2.1	mA	
		TCXO mode	-	0.5	0.7		
		Standby mode	-	0.8	13.7	nA	
		Power off mode	-	0.5	10.8		
Reference frequency	F <sub>ref</sub>	-	10	-	50	MHz	
Peak-to-peak input voltage range (from external source)	V <sub>TCXO(p-p)</sub>	-	1	-	-	V	
Frequency stabilization time	t	-	-	0.65	3.3	ms	
Internal load capacitance	C <sub>load_int</sub>	Step 6.5pF	3.3	-	47	pF	
Phase noise (XTAL mode)	PN <sub>XTAL</sub>	F=10 MHz	@ 1 kHz	-	-133.8	-125.3	dBc/Hz
			@10 kHz	-	-139.9	-138.9	
		F=30 MHz	@ 1 kHz	-	-135.4	-124.7	
			@10 kHz	-	-142.8	-139.2	
		F=50 MHz	@ 1 kHz	-	-128.2	-122.9	
			@10 kHz	-	-139.0	-137.6	
Phase noise (TCXO mode)	PN <sub>TCXO</sub>	F=10 MHz	@10 kHz	-	-139.1	-136.9	dBc/Hz
			F=30 MHz	@10 kHz	-	-139.2	
		F=50 MHz		@10 kHz	-	-139.0	