

General Description

This cell is a cross-coupled differential oscillator with two parallel source followers, both driving in parallel to the output. This way both followers rectify the oscillator signal. The oscillation amplitude of the LC oscillator is adjusted through Resosc. This current has to be adjusted externally. Temperature stability has to be guaranteed by this external current. A second stage filters the output signal of the LC-oscillator. It is a second order filter. The signal frequency and the oscillation frequency shall have a difference of max. one decade. The filter frequency can be adjusted with the external resistor on IFILT.

Ratings, Parameters and Conditions

Absolute Maximum Ratings						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Operating Temperature	T _{OP}	-40		125	°C	
Supply Voltage	V _{DD}	-0.3		3.6	V	
Input Voltage	V _{IN}	-0.3		V _{DD} +0.7	V	
Output Voltage	V _{OUT}	-0.3		V _{DD} +0.7	V	

Electrical Parameters						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Operating Temperature	T _{OP}	-40		85	°C	
Supply Voltage	V _{DD}	3.0	3.3	3.6	V	
Current Consumption	I _{DD}		0,6	1	mA	R _{RESFILT} =100k, R _{RESOSC} =56k
Voltage at Resfilt,Resosc	V _{RES}	1,13	1,18	1,23	V	
Resistor on Resfilt	R _{RESFILT}	100		1000	kΩ	
Resistor on Resosc	R _{RESOSC}	56		200	kΩ	

Interface and Symbol

IO-Description		
Interface	I/O	Function
LC1	in/out	LC extern 1
LC2	input	LC extern 2
RESFILT	in/out	set filter frequency
RESOSC	in/out	set oscillator current
VSIG	in/out	Filter out/comp in
VOSC	in/out	Rectifier output
VBIAS	inout	external bias source

