Analog IP Cell

HF RFID ClockExtractor

CLKEX XH035

SERMA PRODUCTIVITY ENGINEERING

General Description

It is mandatory to extract a clock signal from the antenna signal to be used as logic clock for the digital core in an RFID circuit. This IP cell extracts the HF frequency (13,56MHz) from the antenna signal. The amplitude of extracted clock signal has the same high level as the digital supply voltage.
The dynamic current consumption is 4uA under typical conditions.
The output frequency is asymmetric and has a rectangular shape. It can be used to clock a digital core or frequency divider.

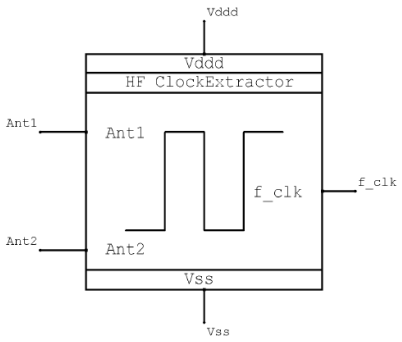
Typical Ratings, Parameters and Condition

Parameter	Symbol	Min	Typ	Max	Unit	Comment
Digital supply voltage	Vddd		2		V	
Supply Current	Iddd	3,9	4,0	4,2	uA	
Antenna voltage	VAnt	1,1		5,5	V	Max. voltage for initial transistors
Output Frequency	f_clk	13,555	13,56	13,562	MHz	Tag frequency=13,56MHz
Duty Cycle	t_H	45,3		46,1	ns	
	t_L	27,5		28,6	ns	
Fall time	t_{fall}	3,90		5,25	ns	
Rise time	t_{rise}	3,85		4,95	ns	
Operating temperature	T_{op}	-40	27	80	℃	

IO-Description

Interface	I/O	Function	Comment
ANT1	Input	Antenna	Signal
ANT2	Input	Antenna	Signal
f_clk	Output	Clock	Digital
Vddd	In-/Output	Supply	Digital
Vss	In-/Output	Supply	Ground

Symbol / external schematic



Dieses Projekt wird mit Mitteln des Europäischen Sozialfonds (ESF) gefördert. Es erzeugt einen gemeinschaftlichen Mehrwert „Investition in Ihre Zukunft“.