

### General Description

The RC oscillator RC\_OSC1 is an adjustable clock generator. The oscillation frequency is controlled by trim inputs T[5:0]. It is designed to operate in a frequency range of 10 to 200 kHz. Its purpose is to provide a temperature independent clock signal usually for interface or watchdog circuits. A temperature compensated bias source is included and can be reused for other IP cells.

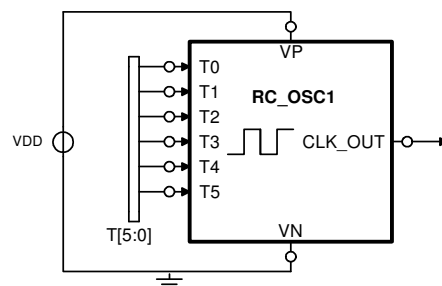
### Ratings, Parameters and Conditions

Parameter / Condition	Symbol	Min	Typ.	Max	Unit	Comment
<b>Electrical Parameters:</b>						
Supply Voltage	$V_{dd}$	4.75	5	5.25	V	
Supply Current	$I_{dd}$	50	85	150	$\mu A$	Bias uses 40 $\mu A$ typ.
oscillation frequency	$f_{OSC}$	10	32	200	kHz	
Duty cycle	DC <sub>CLK_OUT</sub>	48	50	52	%	
Temp. Coeff. $V_{CLK\_OUT}$	TC <sub>OSC</sub>			200	ppm/K	
Power up time	$t_{up}$		1	2	$1/f_{OSC}$	
<b>Absolute Maximum Ratings:</b>						
Operating Temperature	$T_{range}$	-40		120	$^{\circ}C$	
Supply Voltage	$V_{dd}$	-0.3		7	V	
Input Voltage	$V_{in}$	-0.3		$V_{dd}+0.7$		
Output Voltage	$V_{out}$	-0.3		$V_{dd}+0.7$		
<b>Operating Conditions:</b>						
Ambient Temperature	$T_{amb}$	-20	27	80	$^{\circ}C$	

### IO-Description

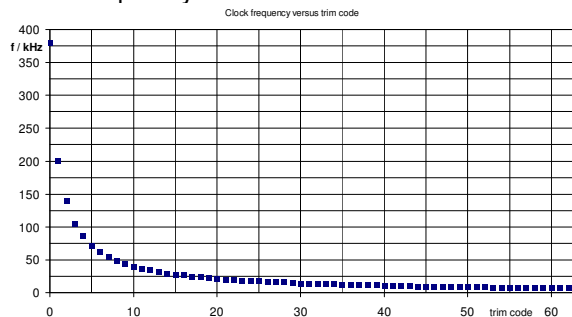
Interface	I/O	Function	Comment
VP	InOut	supply	
VN	InOut	ground	
T[5:0]	Inputs	adjust clock period	linear dependency
CLK_OUT	Output	clock	

### Symbol / external schematic



### Simulation Results

Clock frequency versus trim code



Clock frequency versus temperature

