

SIVI-RC10M6501

TSMC 65nm-G (1P5M)

MAIN FEATURES

- Designed on TSMC 65nm Generic Process
- 10MHz nominal Oscillation Frequency
- Auto-calibration mode
- Accuracy after calibration is better than +/- 3%
- Power consumption at 10MHz is less than 50uA
- Operates from 1.0V supply

IP DESCRIPTION

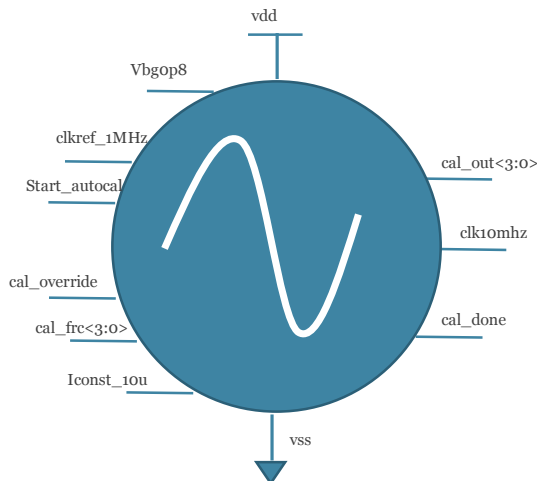
SiVi-RC10M6501 is a low power high resolution RC oscillator nominally operates at 10MHz output clock from a 1.0V supply. The IP consumes only 50uA as a worst case at the maximum oscillation frequency. It has an auto-calibration circuit with a bypass option. The IP is silicon verified on 65nm process.

ELECTRICAL SPECIFICATIONS

Spec / Result	Min	Typ	Max	Unit
Supply Voltage	0.9	1.0	1.1	V
Temperature Range	-40	27	125	°C
Output Frequency	9.8	10.2	10.5	MHz
Current Consumption			50	μA

PIN DESCRIPTION

Pin Name	Direction	Description
rcosc_vdd	Input	1.0V analog supply rail
rcosc_vss	Input	Analog ground rail
digctrl_startautocal	Input	Digital signal used to start the calibration process
icnst_pwr_rcosc_i10u_p	Input	10μA constant bias current
digctrl_oscrestcalfr<3:0>	Input	External calibration word
Digital_caloverride	Input	Calibration override mode (input will be 1'b1 in this mode)
clkgen_clk1mhz	Input	1MHz clock used in calibration mode
bias_vbg0p8v_v	Input	0.8V reference voltage used for calibration
digctrl_oscrestcalout<3:0>	Output	Calibration word results from calibrator
rcosc_clk12mhz	Output	Output 10MHz clock
digctrl_oscrestcaldone	Output	Calibration flag which is raised after the end of the calibration process
rcosc_testclk10mhz	Output	Output clock to be tested



SiVi-RC10M6501 Symbol