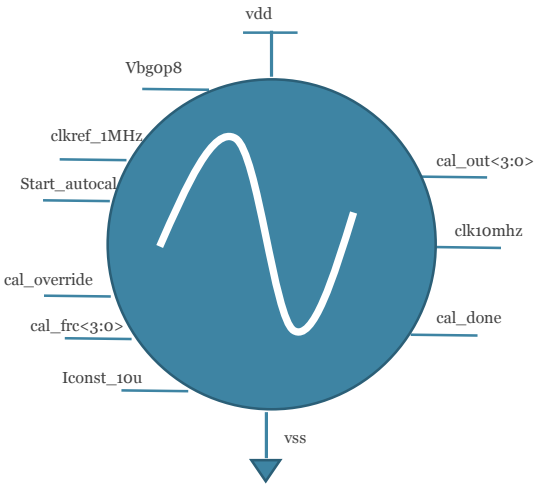
# SIVI-RC10M6501

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




*SiVi-RC10M6501 Symbol*

## 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_oscrescalfrc<3:0> | Input | External calibration word |
| Digital_caloveride | 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_oscrescalout<3:0> | Output | Calibration word results from calibrator |
| rcosc_clk12mhz | Output | Output 10MHz clock |
| digctrl_oscrescaldone | Output | Calibration flag which is raised after the end of the calibration process |
| rcosc_testclk10mhz | Output | Output clock to be tested |

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