# SIVI-BG180N400

TSMC/SMIC 180nm-G (1P5M)

## MAIN FEATURES

- Designed on TSMC/SMIC 180nm Generic process
- $V_{supply}$: 1.9V → 3.6V
- Accuracy across PVT: ±1.5%
- Accuracy after trimming is less than ±0.1%
- Ultra-Low power noise performance
- Excellent supply rejection over wide frequency range
- Low current consumption
- Capability of trimming the output voltage
- Small IP area < 0.018mm²
- Operational temperature from -40C° to 125C°

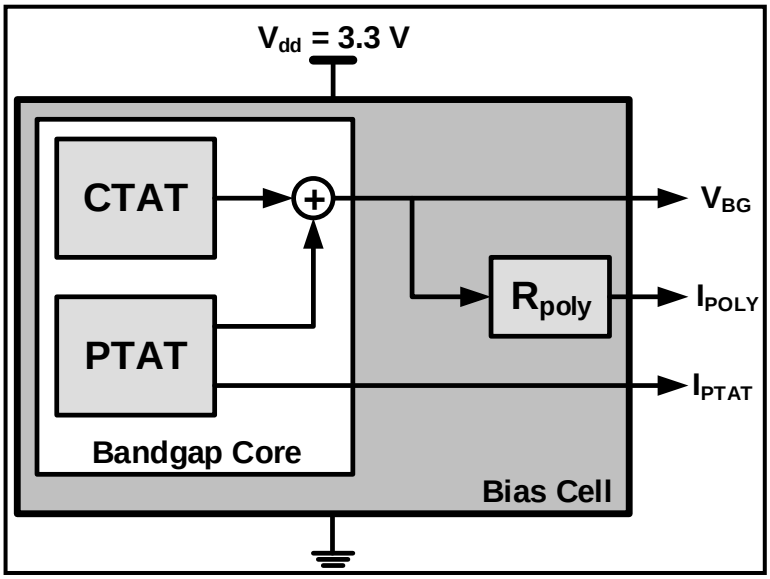
## IP DESCRIPTION

SiVi-BG180n400 is an ultra-low noise bandgap reference cell with less than 1.5nV/√Hz spot noise at 100kHz. With its good accuracy and ultra-low noise performance SiVi-BG180n400 is considered the optimum solution for low noise SoC solutions

SiVi-BG180n400 is silicon verified on a Generic TSMC and SMIC 180nm process.

## ELECTRICAL SPECIFICATIONS

| Spec / Result | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Supply Voltage | | 1.9 | 3.0 | 3.6 | V |
| Temperature Range | | -40 | 27 | 125 | °C |
| PSRR | @10kHz | | -75 | | dB |
| | @1MHz | | -55 | | |
| Spot Noise @100kHz | | | | 1.4 | nV/√Hz |
| Temperature Coefficient | @T = -40°C | -25 | | 5 | ppm/°C |
| | @T = 27°C | -7 | | -5 | |
| | @T = 125°C | -20 | | 0 | |
| Voltage Coefficient (2.0V →3.6V Vdd) | | 0.5 | | 1 | %/V |
| Startup time, CL=5pf | | | 300 | | µs |
| Output Voltage | | 0.84 | 0.856 | 0.87 | V |
| Current Consumption, | | | 90 | 120 | µA |




*SiVi-BG180n400 Block Diagram*

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