

Technology

- TSMC 0u13 G
- 2.0V-3.6V supply (A)
- 1.08V-1.32V supply (D)
- Temp range: -40 .. 125°C
- No external components

Deliverables

- GDSII
- Abstract (LEF)
- CDL netlist for LVS
- .lib
- Verilog
- Documentation
- Integration guidelines

Status

- Silicon proven

ICS112-BG-T0u13G is a 3-output Low-Voltage Bandgap Reference

Differentiation

The ICS112-BG-T0u13G is an ultra-low-power CMOS bandgap reference with multiple output voltages (0.6V / 0.8V / 1.2V). It has excellent PSRR figures and achieves +/-2% accuracy with trimming and +/-4.1% without trimming. No external components are required. The bandgap reference operates in an analog voltage range of 2.0V to 3.6V and is qualified over a broad temperature range of -40°C to 125°C.

A 5-bit trimming word allows to trim the offset on V_{REF} using a one-points calibration at 25°C (77°F). All digital controlling is done at core voltages in the range 1.02V to 1.32V, eliminating the need for level shifters.

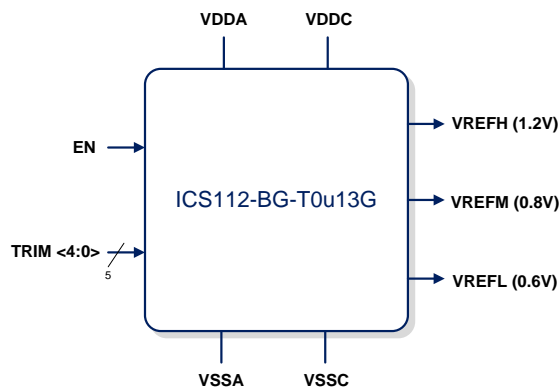
The IP is silicon proven and in production.

Overview

This 3-output bandgap reference is designed to reduce time-to-market, risk and costs in developing analog circuits. The bandgap reference is implemented in a standard 0u13 TSMC process using only 4 metal layers (3 layers for routing, 1 layer for shielding). Three output voltages are generated:

- $V_{REF_H} = 1.2V$
- $V_{REF_M} = 0.8V$
- $V_{REF_L} = 0.6V$

A 5-bit trimming word allows to trim the offset on V_{REF} using a one-points calibration at 25°C to obtain a +/-2% accuracy over all process corners. Trimming the offset on V_{REF_L} automatically sets the correct offset on V_{REF_H} and V_{REF_M} . No external components are needed.



Applications

- Battery powered systems
- Data Acquisition systems
- Voltage and current regulators

Our service and support

Our service models include:

- Single-use, multi-use, one-time buy-off licensing models for our IP-cores
- Customization or porting of IP-cores to the customers target technology
- Custom development of analog, mixed-signal and high-voltage IP-cores
- Custom ASIC turnkey solutions

In all of these models, we are committed to provide pro-active support from idea to product. We always work closely together with our customers to come to the most optimal solutions for their systems.

About ICsense

ICsense is an ISO 9001:2000 certified IC design house offering analog, mixed-signal and high-voltage IC design services and ASIC turnkey solutions for the automotive, medical, industrial and consumer market.

ICsense provides best-in-class IC design from consultancy and building block/IP design up to complete mixed-signal ASICs or SoCs. Our philosophy is to deliver highly complex, innovative circuits at minimal risks through engineering excellence and close cooperation with our customers. ICsense proudly partners with Sofics and Easics for SoC solutions.

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