



## PRODUCT OUTLINE

**CM1214ff – ULP Bandgap Reference**  
Ultra Low Current (150nA)

### Part Number

■ CM1214ff

### Features

- Ultra low power (ULP) bandgap reference
- $V_{ref}=1.18V \pm 3.5\%$  (without trimming)
- Current consumption below 150nA in active mode
- Supply voltage: 1.4–2.0V
- Automatic start-up as soon as power supply starts
- Indicative area:  $0.004\text{mm}^2$

### Applications

- Passive/active RFID tag ICs
- Battery powered equipment
- Energy Haversting ICs
- Hearing Aids

### Technology

- SiITerra 0.18 $\mu\text{m}$  CL180G CMOS

### Deliverables

- Datasheet/Integration Guide
- HDL Model
- Flat GDSII database/LVS netlist
- Customer Support

### Status

- Silicon proven

### Overview

This macro-cell is an ultra low power voltage reference generator core designed for SiITerra 0.18 $\mu\text{m}$  CL180G CMOS technology. The core is ideal as a general purpose reference voltage in applications where power consumption is critical.

The circuit generates an unbuffered 1180mV, temperature compensated bandgap voltage reference (47ppm/ $^{\circ}\text{C}$ ). Internal start-up circuit allows that the reference voltage is available as soon as the power supply ramps up, so that no enable/disable function is necessary to start-up the circuit.

The core is easily re-targeted to any other CMOS technology.

### Functional Diagram

