

## IP Data Sheet

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### 250nA-88μA Current Reference

The TS\_IREF\_88uA\_X8 is a current reference biasing circuit which provides a sink/source ZTAT (zero-to-absolute temperature) temperature-independent current from 250nA up to 88μA and supplied with 3.3V. As shown in Figure 1, the current reference circuit consists of a bandgap circuit generating a ZTAT voltage  $V_{BG}$  and by using an OTA, an NMOS transistor, and a trimmed P-doped poly resistor (temperature independent), a ZTAT current can be

generated and copied using current mirrors. The bandgap voltage  $V_{BG}$  is also provided as an output in case it is needed as a reference voltage. Digital trimming is available for the generated current through trimming bits. The current reference also provides an Enable signal to control whether to turn on or shutdown the bandgap circuit and consequently the biasing circuit.

**Technology:** X-FAB XT018-0.18μm BCD-on-SOI CMOS

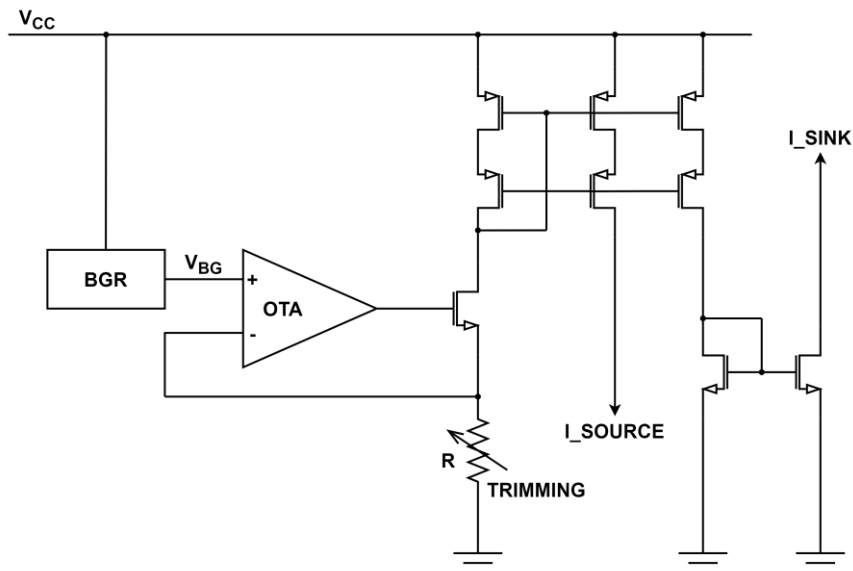


Figure 1: Block diagram of the current reference circuit

### Sales & Marketing Contact



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## OPERATING CONDITIONS

Parameters	Min.	Typ.	Max.	Unit
Junction temperature range	-40	27	150	°C
Supply voltage on VCC with respect to ground GNDS	3.2	3.3	3.4	V

## SPECIFICATION

Parameters	Min.	Typ.	Max.	Unit
Output bandgap voltage	1.190	1.119	1.201	V
250nA output current	205	252	304	nA
88uA output current	71	88	106	uA
Current Reference Area		0.19		mm <sup>2</sup>

LAYOUT VIEW

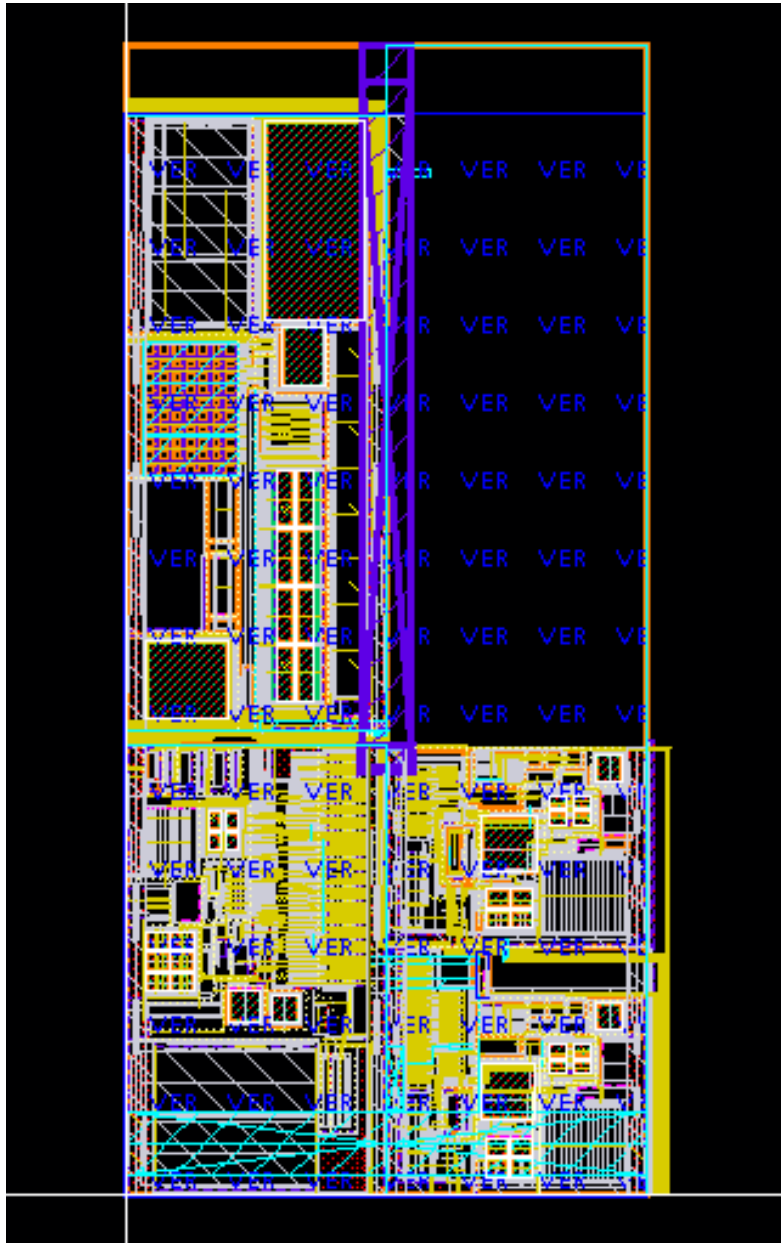


Figure 2: Current Reference Circuit Layout View