

IP Data Sheet

Band-Gap Voltage Reference with dual 2 μ A Current Source

The TS_BG_02uA_X8 provides a 1.21V band-gap voltage reference as well as two 2 μ A current sources, from one supply voltage on VDDA5 (5V typical).

This IP is meant for strict on-chip usage.

The minimum continuous operation lifetime spans 100000 hours.

Technology: X-FAB XT018-0.18 μ m BCD-on-SOI CMOS

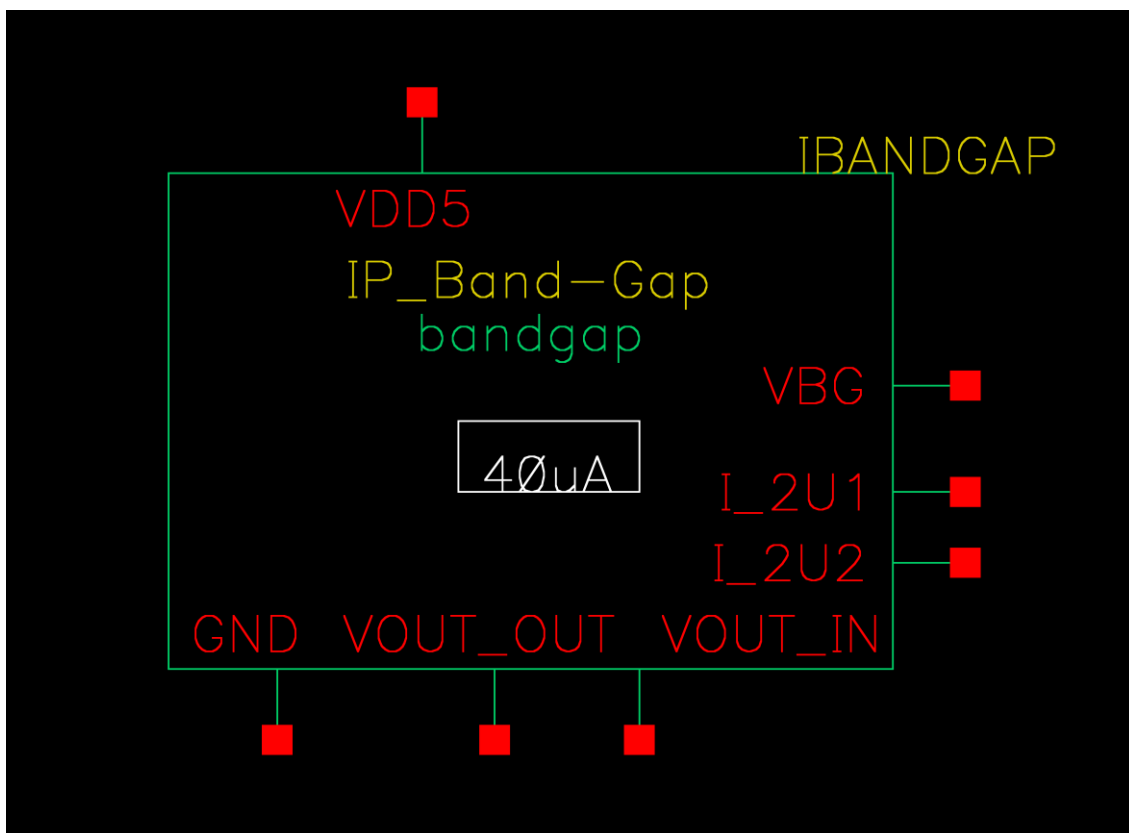


Figure 1: Bandgap Circuit Symbol

Sales & Marketing Contact



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OPERATING CONDITIONS

Parameters	Values
Junction temperature range	0°C to +80°C
Supply voltage	VDDA5: 4.9V to 5.1V
Voltage at I_2U1 and I_2U2 terminals	3V max

SPECIFICATION

Parameters	Values
VBG voltage at T _J = 50°C	1.178V min, 1.210V typ, 1.233V max
Temperature coefficient, (dV/dT)/VBG	±31ppm/°C
VBG PSRR over frequencies up to 10 MHz, VBG DC-level PSRR	17dB min, 105dB min
Operating power consumption with unused I_2U1 and I_2U2	204µW max
Area	0.024mm ²

MEASURED STATISTICAL PERFORMANCE

Test	3023
Name	V_POR_BANDGAP
Low limit	1.178 V
High limit	1.233 V
Mean	1.21027 V from summary
Mean	1.21027 V from 2827 samples
Sigma / Range	0.00618861 V / 0.0434128 V
Cp / Cpk	1.48 / 1.22
Samples	2827
Fails / Outliers	0 / 6

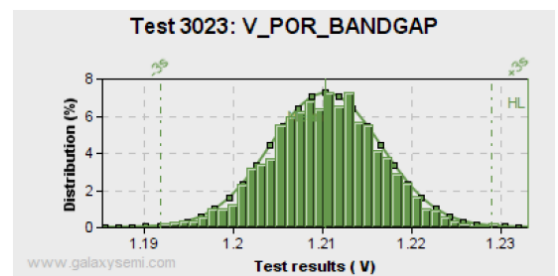


Figure 2: Bandgap circuit measured statistical performance

LAYOUT VIEW

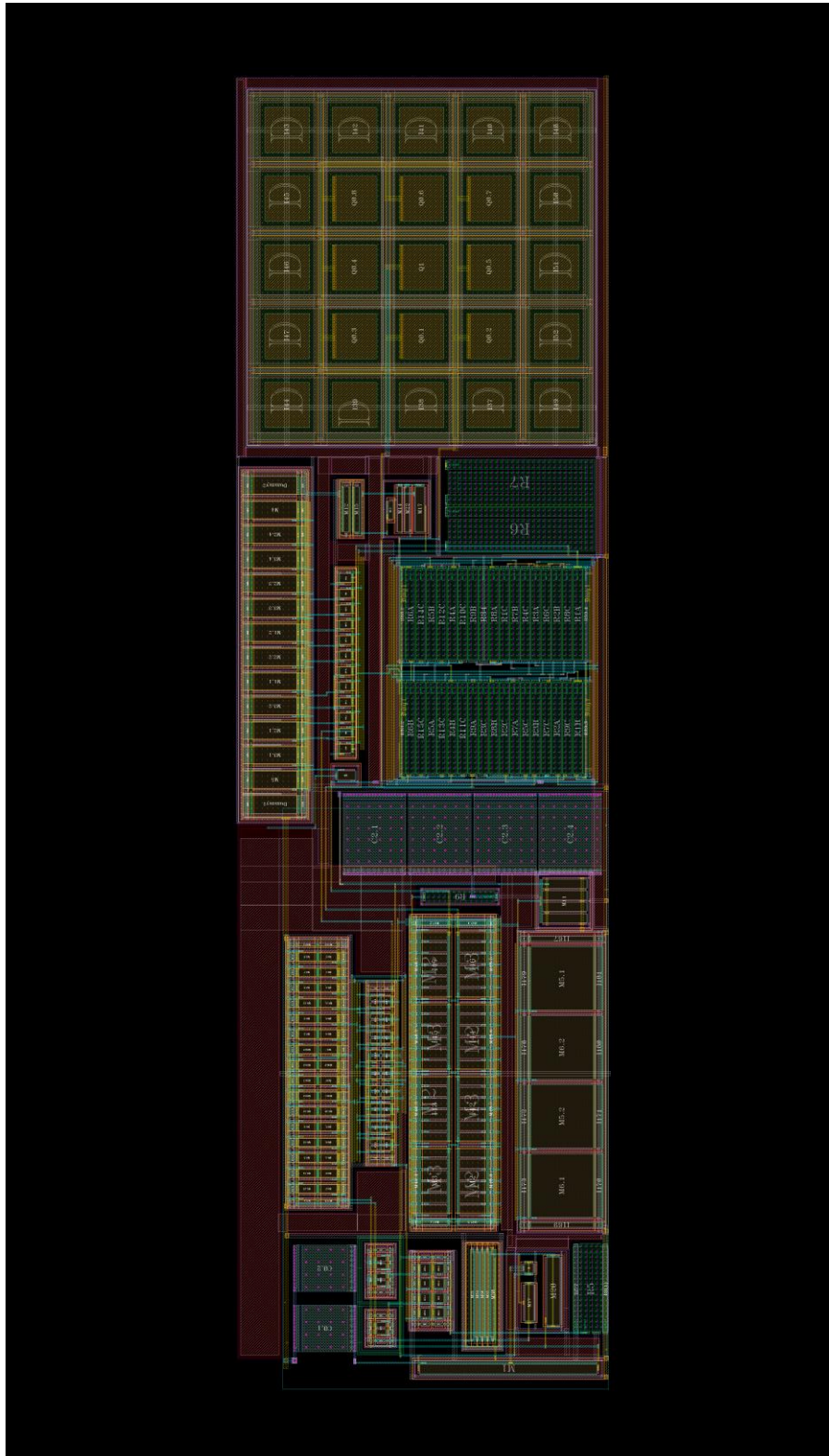


Figure 3: Bandgap circuit layout view