

Low Noise, High PSRR Replica Voltage Regulator

1.Features

Power Supply : 1.8 V
 Output voltage : 1.2 V
 Quiescent current: 7.3 mA
 Maximum current: 61 mA
 Reference Voltage: 1.2 V
 PSRR : 56 dB @1 KHz
 32 dB @1 MHz
 Noise @1KHz: -144 dBV/sqrt (Hz)
 (60 nV/sqrt (Hz))
 Noise @1MHz: -178 dBV/sqrt (Hz)
 (1.2 nV/sqrt (Hz))
 Bandwidth: 6.8 KHz
 Drop-out voltage: 16 uV (vdd18 :1.6 V – 1.8 V)
 Load regulation:
 -2.9 mV/mA Iload from 0-60mA
 (-2 mV/mA Iload close to 20mA)
 WakeUp Time ⁽¹⁾ : 1.5 ns
 Area : 400 um x 140 um
 Process : 22FDX
 Metal Option : 19

(1) Cload=10 pF

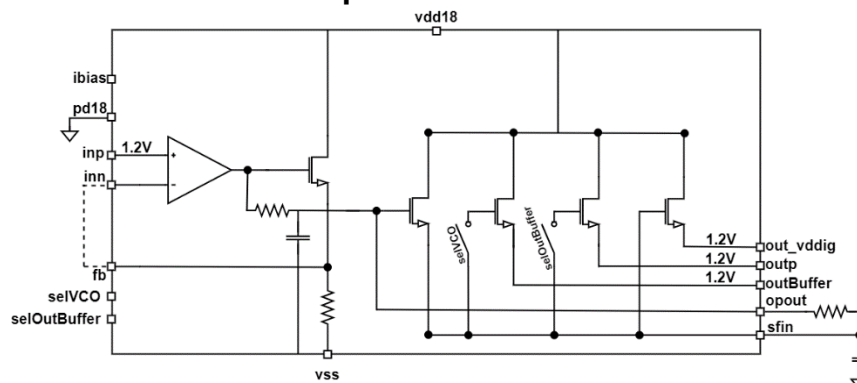
3.Description

The WEALDO18NI12SFN32M22G is a voltage regulator operating from 1.8 V. It provides three output voltages 1.2 V driving output load that sinks specific current. The first output voltage applies to the VCO, the second drives the OutBuffer and the last one drives the digital circuitry.

2.Applications

VCOs, PLLs, Power Supply Noise sensitive circuits. Circuits with low line regulation requirements

Simplified Schematic



4. PinOut Description

Pinout	Purpose ⁽¹⁾	Description
vdd18	PS	1.8 V Input Supply Voltage
vss	GND	Power Ground
ibias	AIO	25 uA Bias Supply
pd18	DI	Power Down pin. Drive pd18 to vss to turn on the regulator. Drive pd18 to vdd18 to put the voltage regulator (LDO) into shutdown mode.
Vrefin	I	1.2 V Reference Voltage
inp	I	Positive Opamp Input
inn	I	Negative Opamp Input
fb	IO	Feedback
selVCO	I	Selects the outp
selOutBuffer	I	Selects the outBuffer
outp	O	1.2 Output Voltage
outBuffer	O	1.2 Output Voltage
out_vddig	O	1.2 Output Voltage

(1) I=Input, O=Output, IO=Input,Output ,PS=Power Supply, DI= Digital Input, AIO=Analog Input Output

Availability

GF 22FDX, Metal Option 19





Deliverables

GDSII, Database, SystemVerilog Models

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