ASIC for Fluxgate Magnetic Sensor(Brief)

Features

- Supply Voltage Range : 2.5 V ~ 3.3 V
- X, Y, Z Axis Differential Driver Outputs
- 10bit Resolution Signal Processing
- Built-In 24MHz Oscillator
- Built-In LDO
- I^2C Interface
- Burst and Continuous Operating Mode
- Silicon Die Size : 1.34 mm x 0.74 mm

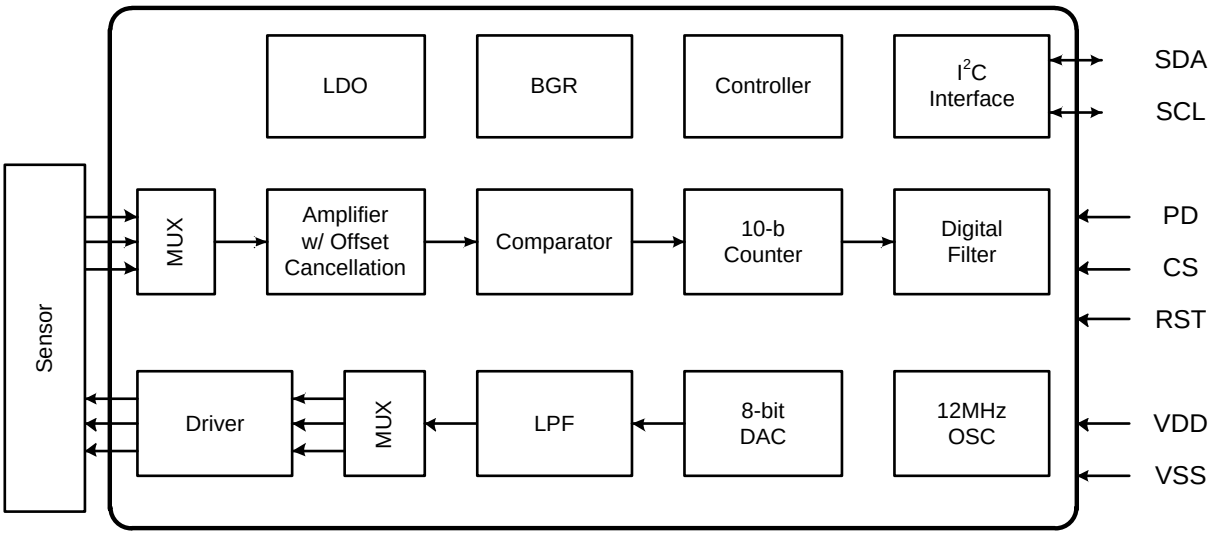
Descriptions

The CFA010P is a low power monolithic ASIC for fluxgate magnetic sensor. The CFA01P integrates an 8-bit DAC and output drivers for stimulating 3-Axis sensors, and an amplifier, comparators and 10-bit counter for acquiring the output signal of sensors. The output of sensors is processed by digital filter and transferred to master circuit through the I^2C interface.
The operating frequency of CFA010P is about 24MHz.
The CFA010P is integrated in CMOS process. The silicon area is 1.34 mm x 0.74 mm.

Applications

- Mobile Devices

Block Diagram



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Absolute Maximum Ratings

Over operating free-air temperature range unless otherwise noted

Symbol	Rating	Range	Unit
VDD	Supply Voltage	-0.3 to 4	V
T_{opr}	Operating ambient temperature range	-40 to 70	°C
T_{stg}	Storage temperature range	-65 to 85	°C
	ESD Protection Human Body Model (HBM) (Note 1) Machine Model (MM) (Note2) Charged Device Model (CDM)	 >2000 >200 >500	V

Stresses exceeding those listed under absolute maximum ratings may cause permanent damage to device.

1. Human Body Model: 100pF discharged through a 1.5k resistor following specification JESD22/A114.
2. Machine Model: 200pF discharged through all pins following specification JESD22/A115.

DC Electrical Characteristics

*Ta =25 °C, VDD =2.8 V, GND =0, f_{CLK} =24MHz

Parameter		Min	Typ	Max	Unit
Power Supply Voltage(VDD)		2.5	2.8	3.3	V
Power Consumptions	Operating (IDD)		2.5		mA
	Standby (ISTBY)		2		mA
	Power Down (IPD)			1	uA
Logic Input/Output Low Level (Vthl)		0		0.3 x VDD	V
Logic Input/Output High Level (Vthh)		0.6 x VDD		VDD	V
Data bit			10		bit

AC Electrical Characteristics

Ta =25 °C, VDD =2.8V, GND=0, f_{CLK} =24MHz (*Unless otherwise specified)

Parameter	Min	Typ	Max	Unit
Clock Frequency (f_{CLK}) – Normal Operation	9.5	24	50	MHz
DAC Non-Linearity	-3	1	3	LSB
Driver Differential Output (Load : 200Ω)		4		$V_{pp,diff}$
Sensitivity		10		mV_{pp}