

CMA3000

**Ultra-small size, low power 3-axis
accelerometer**



Applications

- Game/UI control
- Power management
- Activity monitoring
- Speed and distance measurement

Key benefits

- Small size
- Ultra low power consumption
- Enhances system level power management
 - Motion detector
 - Free fall detector
- High shock durability

Versions

- CMA3000-D01 Digital
- CMA3000-A01 Analog

Key Specifications

(CMA3000-D01)

- Size 2.0 x 2.0 x 0.95 mm³
- 1.7 V – 3.6 V supply voltage, separate I/O supply.
- Ultra low current consumption
 - Measurement mode 70/50/11µA at 400/100/40 Hz output sample rate
 - Motion detector mode 7µA at 10 Hz output sample rate
 - Power down mode 3µA
- Selectable ±2g or ±8g measurement range with 8 bit resolution
- Calibration accuracy: 10% for gain and 100mg for the offset
- Data ready, motion and free fall detectors with interrupt functionality
- Selectable digital SPI and I²C interfaces.
- High shock durability

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**Sub-1 μ A Current Consumption with
1 Hz sample rate**

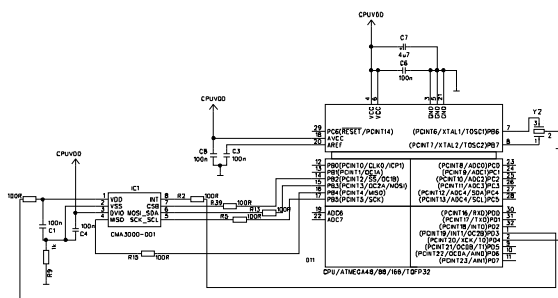


Background

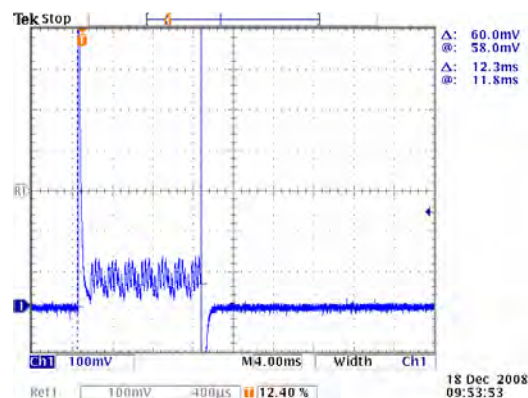
- Accelerometer's current consumption can be reduced by pulsed supply. When using CMA3000-D01, sub 1 μ A current consumption at 1 Hz sample rate can be achieved.

Experiment

- Measurements were made by reading CMA3000-D01 output with μ C through SPI and measuring the current consumption with a shunt resistor connected to ground.



Application circuit



Shunt resistor voltage in 400 Hz mode

- Depending on the CMA3000 configuration, 0.7...1.6 μ A current consumption at 1 Hz sample rate was measured.

Further information

- TN75 Sub 1uA Current Consumption With CMA3000