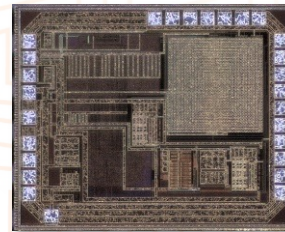
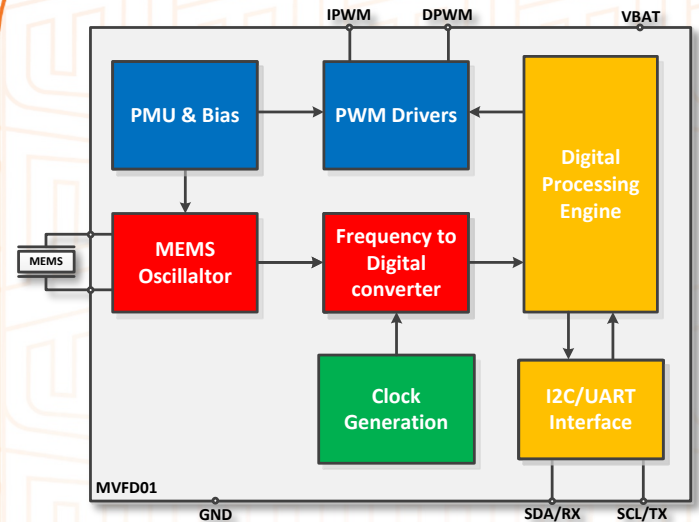


Frequency-to-Digital Converter for MEMS Resonators

- Supports resonators up to 3MHz
- Trimmable feedthrough capacitance-cancellation feature, to ensure oscillation and improve noise performance
- Low-noise and high-gain oscillator circuit that supports resonators with motional resistances up to 50kΩ
- Operating temperature range from -40 to 85°C
- Frequency resolution settings up to 16-Bit
- Supports I²C and UART communication protocols
- Optional external crystal interface for low noise measurements
- Low standby currents <12nA



Die Size: 1.53 x 1.22 mm²



Applications:

- Microbalances
- Biosensing

*The Infinite Possibilities
of the Infinitely Small™*

Frequency-to-Digital Converter for MEMS Resonators MVFD01

The MVFD01 is a programmable frequency-to-digital converter that is designed to be easily integrated with MEMS resonators. The chip features a versatile low-noise amplifier (LNA) with a programmable gain and feedthrough capacitance cancellation, in order to accommodate different MEMS resonators.

The ASIC is also equipped with a programmable pulse-width-modulation (PWM) driver. This output is available on multiple pads, and its duty cycle can be controlled to drive varying currents through heater resistors that are often used with MEMS resonators.

| | |
|---|-----------------------------------|
| Temperature Range | -40 to 85°C |
| Low-frequency Noise | <100Hz |
| Internal RC Oscillator | <0.4% |
| Trimming Error | |
| Low Standby Current | <12nA |
| Programmable PWM | <50mA |
| Output Current | |
| Power Supply | 2.7 to 5.5V |
| Small Footprint | 1.53 x 1.22mm ² |
| Chip Communication | Digital I ² C and UART |
| * Customization is available. Talk to us! | |

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ABOUT MEMS VISION

Headquartered in Montreal, Canada, with offices around the world, MEMS VISION INTL. capitalizes on a strong portfolio of patents and intellectual property on MEMS and ASICs (integrated circuits), and a team of highly qualified personnel, to offer hardware and software smart sensing solutions to its customers and partners serving the Consumer, Industrial, Medical, and Automotive markets. Our products include sensors for humidity, temperature, absolute pressure, differential pressure, particulate matter, as well as ultrasonic sensors.

Our expertise in developing and manufacturing smart sensors, based on our proprietary MEMS, ASICs, and calibration technologies, enables us to deliver sensor solutions with very low power consumption, very small form factor, and a world class performance, all at competitive pricing.