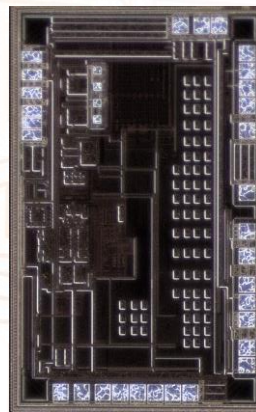
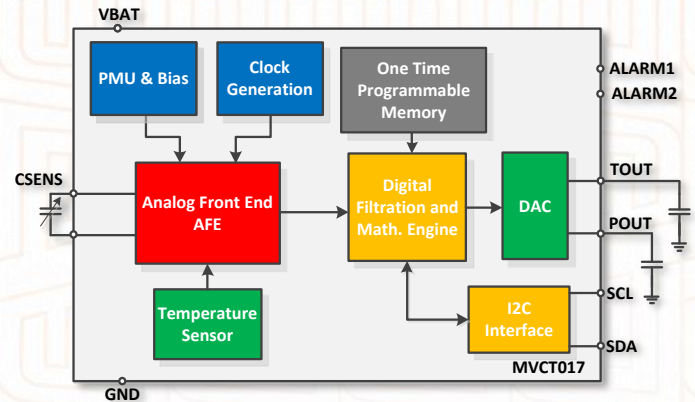


DIGITAL CAPACITIVE SENSOR INTERFACE

- Trimmable input capacitance range, for flexibility and dynamic range optimization
- Internal high-accuracy and low-drift temperature sensor
- On-chip processing engine for linearization and temperature compensation – provides end user with a fully calibrated output
- Programmable resolution settings for each measurement mode:
 - 8 to 14-Bit for the temperature sensor and the capacitance interface
- Update mode with programmable update rates from 5ms to 5s
- Calibrated analog output features, for both the capacitance and temperature sensors
- Ultra-low operating and sleep currents



Die size: 1.7 x 1.04 mm²



Applications

- Pressure, Humidity, and Temperature Monitoring
- Home Automation Control
- HVAC / VAV
- Pressure Transmitters
- IoT Environmental Sensing
- Level Sensing

INNOVATING SENSORS

FOR A BETTER WORLD!

MVCT017

Digital Capacitive Sensor Interface

The MVCT017 is a programmable capacitance-to-digital converter interface, designed to be easily integrated with capacitive sensors. The chip features very fast measurement times, low operating power, and very low standby currents, making it very suitable for low power and portable applications. The ASIC also includes a high-accuracy temperature sensor and a DAC to convert the calibrated measurements into an analog voltage that is proportional to the supply voltage.

Temperature Range	-40 to 125°C
Power Supply Voltage	1.71 to 3.6V
Input Capacitance Range	2 to 7pF
Temperature RMS Noise	0.01°C @ 14-Bit res.
Capacitance RMS Noise @ 1pF Input Range	0.4fF @ 14-Bit res.
Average Current for One Measurement/sec	0.6µA @14-Bit Temp. & Capacitance meas.
Ultra-low Standby Current	10nA
Outputs	Digital I2C & Analog
* Customization is available. Talk to us!	

MEMS VISION INTERNATIONAL INC.

5101 Buchan Street, Suite 301
Montréal, QC H4P 2R9
Canada

GENERAL ENQUIRIES

Phone: +1 438-558-2940
www.mems-vision.com
info-asic@mems-vision.com

ADDITIONAL SALES OFFICES

China | china@mems-vision.com
Korea | david.suh@mems-vision.com

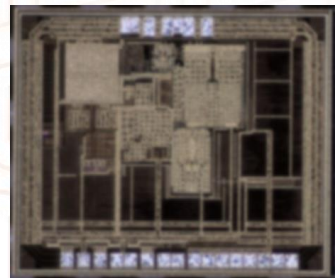
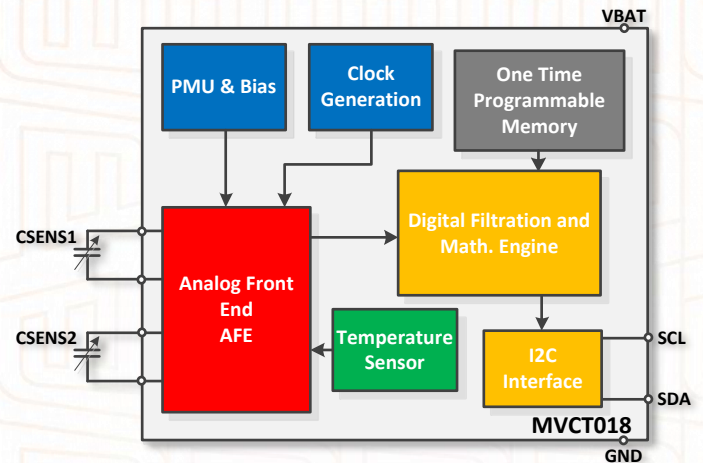
ABOUT MEMS VISION

Headquartered in Montreal, Canada, with offices around the world, MEMS Vision 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 Industrial, Automotive, Medical, and Consumer markets. Our products include sensors for humidity, temperature, absolute pressure, particulate matter, differential pressure, 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.

DUAL-CHANNEL DIGITAL CAPACITIVE SENSOR INTERFACE

- Each channel has an independent trimmable input capacitance range, for flexibility and dynamic range optimization
- On-chip processing engine for linearization and temperature compensation – provides end user with a fully calibrated output
- Internal high-accuracy and low-drift temperature sensor
- Programmable resolution settings (up to 21-Bits) for each mode
- On-chip IIR filter for ultra low noise measurements
- Programmable alarm and clipping functions
- Supports 3-wire, 4-wire SPI, and I2C communication protocols



Die Size: 1.67 x 1.395 mm²



Applications

- Pressure, Humidity, and Temperature Monitoring
- Home Automation Control
- HVAC / VAV
- Pressure Transmitters
- IoT Environmental Sensing
- Level Sensing

INNOVATING SENSORS

FOR A BETTER WORLD!

MVCT018

Dual-Channel Digital Capacitive Sensor Interface

The MVCT018 is a programmable and very accurate capacitance-to-digital converter interface, designed to be easily integrated with capacitive sensors. The chip features very fast measurement times, low operating power, and very low standby currents, making it very suitable for low power and portable applications. The ASIC includes a high-accuracy integrated temperature sensor that enables the user to compensate for temperature dependencies of sensor elements, as needed.

Temperature Range	-40 to 125°C
Power Supply Voltage	1.71 to 3.6V
Input Capacitance Range	0.3 to 13pF
Temperature RMS Noise	0.01°C @ 14-Bit res.
Capacitance RMS Noise (1pF Input Range)	17aF @ 21-Bit res. with IIR filter turned OFF 4aF @ 21-Bit res. with IIR filter turned ON
Average Current for One Measurement/sec	15-Bit Capacitance: 0.72µA 14-Bit Temperature: 0.75µA
Ultra-low Standby Current	15nA
Outputs	Digital I ² C & 3-wire/4-wire SPI interfaces

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