IQS229EV01 module user guide

Single Channel Capacitive Proximity/Touch Controller for SAR Applications

Operation Characteristics

The IQS229 will work in standalone mode (STD – LED outputs) or streaming mode (STRM), depending on a resistor placement. By default the module will be configured in standalone mode.

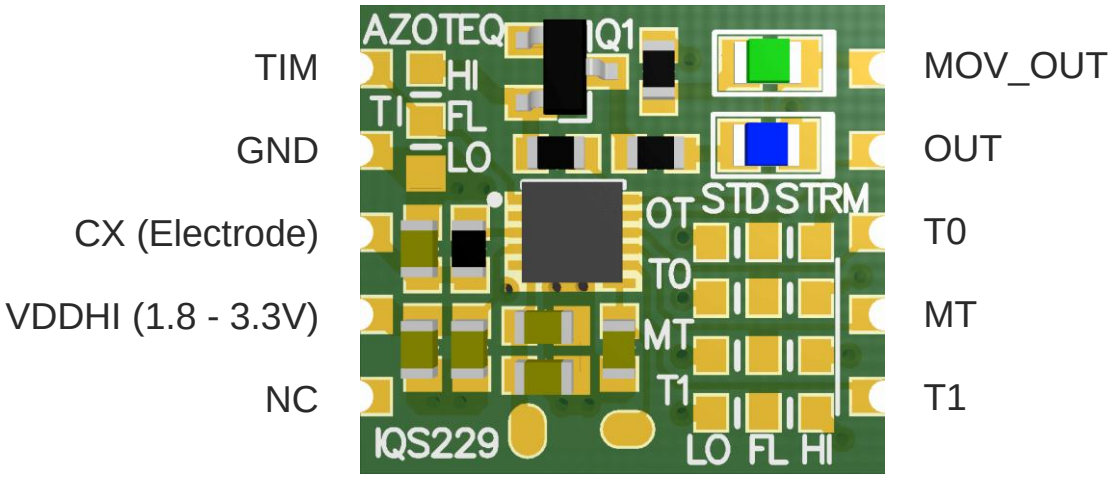
- "OUT" (BLUE) LED will indicate an activation (crossing of the threshold)
- "MOV_OUT" (GREEN) LED will indicate movement in small detectable amounts.

Integration

Start the integration of the IQS229 by wiring the following into the intended application:

1. GND
2. CX (Electrode – wire or copper pad)
3. VDDHI

On-board LEDs may be used for feedback, or the OUT and MOV_OUT pins may be taken to a microcontroller.



User Configurable Options

Four pins on the IQS229 are used for external configuration. Floating pins are the default configuration. The configuration is read at power-on or reset. To see how resistor straps are applied, see the next page.

Start off by choosing a threshold. T0 is used to set a large jump in threshold and T1 is used to set smaller offsets.

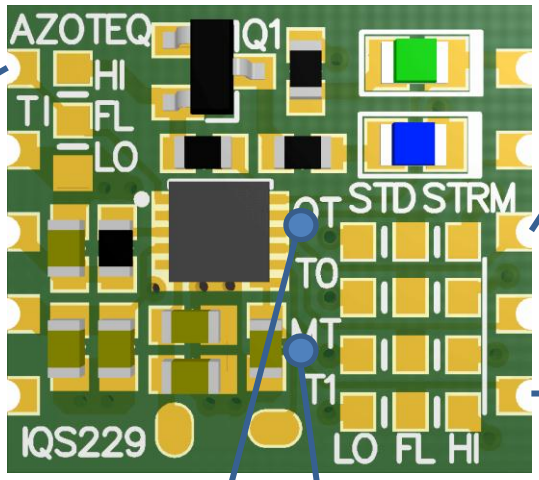
Next choose the preferred movement sensitivity by strapping MT.

Then choose a no movement time-out. If no movement is detected in this time, the sensor will clear the activation. With each movement the IQS229 will reset the timer.

Threshold Level Selection								
L = LOGIC LOW, H = LOGIC HIGH,F = FLOAT								
T0, THR0 (pin 8)								
L	L	L	F	F	F	H	H	H
T1, THR1 (pin 6)								
L	F	H	L	F	H	L	F	H
Corresponding Threshold Level								
0	1	2	3	4	5	6	7	8
◄More sensitive								Less sensitive►

Using resistor strap options

Resistor straps are used to configure the device as shown below. It is recommended to use a 1MΩ resistor for this purpose. After power-up or reset the values will be read and each pin is written with the values that was read. This eliminates potential leakage current.



TIM: Timer Adjustment

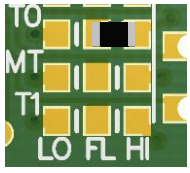
Shorter timer

Longer timer

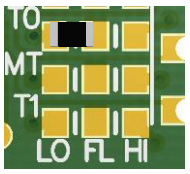
TIM (pin 1)	No Movement Time-out
Low	60sec
Float	3min
High	10min

Threshold Adjustment

T0: Large steps

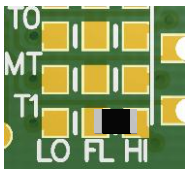


Less sensitive

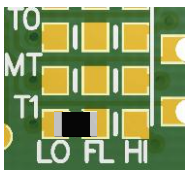


More sensitive

T1: Small steps

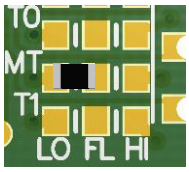


Less sensitive

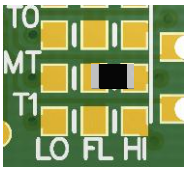


More sensitive

MT: Movement sensitivity adjustment

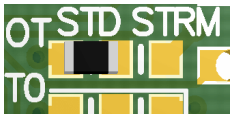


More sensitive



Less Sensitive

OT/OUT Function



Standalone (default) 1MegΩ pull-down

1-Wire Streaming (debugging) 4.7kΩ

MT MOV_THR (pin 7)	Movement Threshold
Low	More sensitive
Float	Default
High	Less sensitive

Schematic and assembly

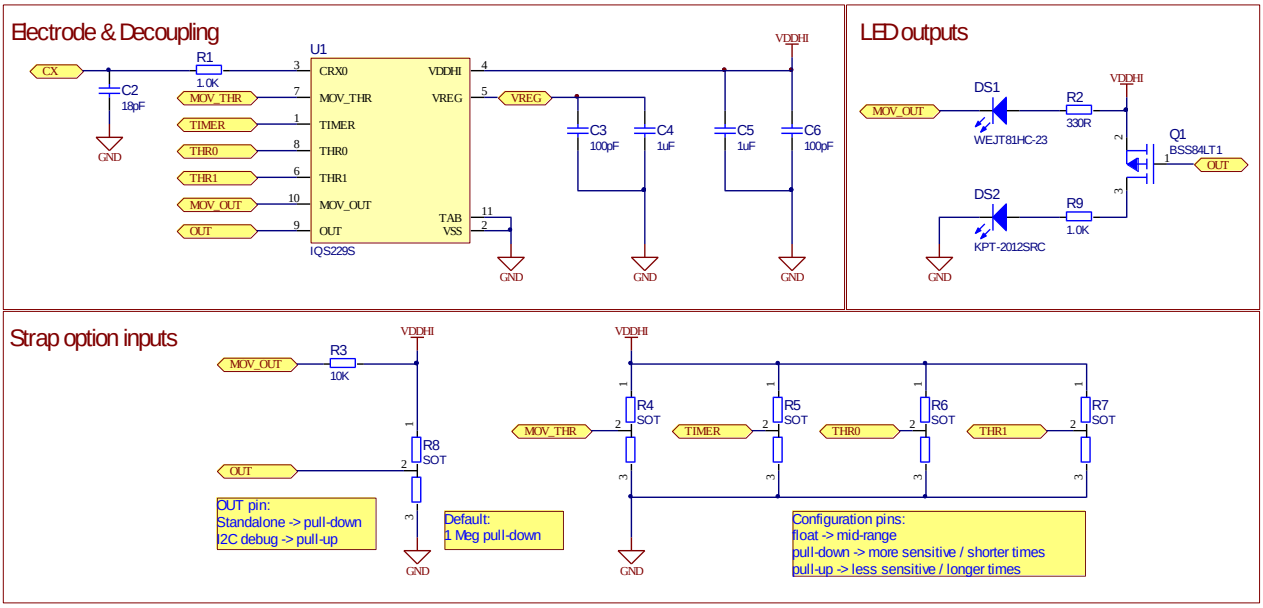


Figure 1 AZP408A05 Schematic

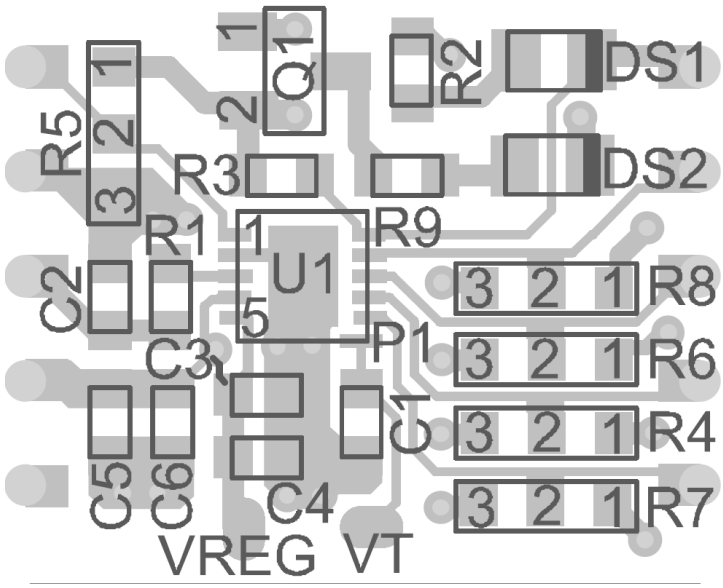


Figure 2 AZP408A05 assembly

Recommended landing pad

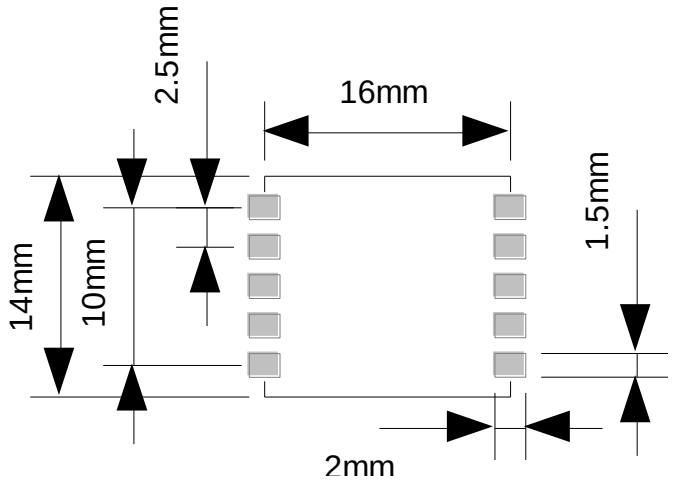


Figure 3 Recommended AZP408A05 landing pad

Programming

The IQS229 has various one-time-programmable (OTP) fuse options. Information about these options are available on request and are only recommended for larger orders (>50k) or when in-circuit programming is an option after the SMT process.

Connect the AZP408A05 to the CT210 as shown in Figure 4.

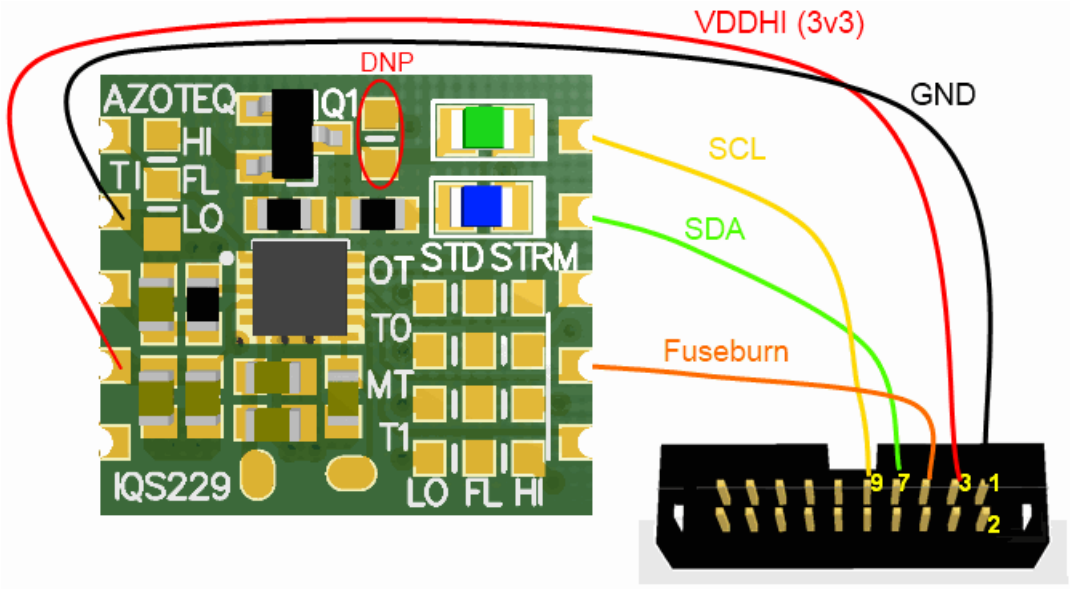


Figure 4 AZP408A05 connection to CT210 for IQS229 fuse burn

It is important to remove R2 when configuring the IQS229 OTP bits. The CT210 will configure the programming via I^2C and the R2 / DS1 combination will cause the CLK line to become sluggish. Place R2 again after programming.

Program the IQS229 using the Azoteq USBProg utility.

Appendix A Contact Information

	USA	Asia	South Africa
Physical Address	6507 Jester Blvd Bldg 5, suite 510G Austin TX 78750 USA	Rm1725, Glittery City Shennan Rd Futian District Shenzhen, 518033 China	109 Main Street Paarl 7646 South Africa
Postal Address	6507 Jester Blvd Bldg 5, suite 510G Austin TX 78750 USA	Rm1725, Glittery City Shennan Rd Futian District Shenzhen, 518033 China	PO Box 3534 Paarl 7620 South Africa
Tel	+1 512 538 1995	+86 755 8303 5294 ext 808	+27 21 863 0033
Fax	+1 512 672 8442		+27 21 863 1512
Email	kobusm@azoteq.com	linayu@azoteq.com.cn	info@azoteq.com

Please visit www.azoteq.com for a list of distributors and worldwide representation.

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9