



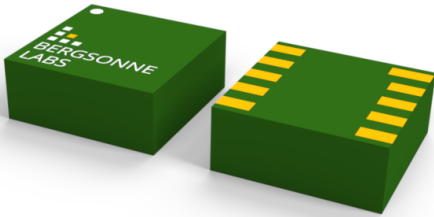
Sense.T.C

capacitive touch

Built around the Azoteq IQS323 ProxFusion controller, the Sense.T.C tile's entire top surface functions as a capacitive touch sensor, while a second input channel is available via one of the pads.

The IQS323 provides both proximity and touch detection with all signal processing on-chip, exposing processed results over I2C. Each channel reports 16-bit filtered counts, a 16-bit long-term average baseline, and binary proximity/touch states with configurable thresholds, debounce, and hysteresis. When the surface and the pad 8 electrode are configured together as a slider, the controller provides a 16-bit position output with on-chip gesture recognition including tap, swipe, flick, and hold.

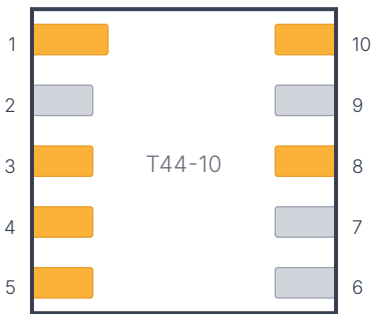
Report rates are configurable per power mode, from every 16ms in normal self-capacitive mode (125µA average current consumption) up to every 160 ms in the 4 µA ultra-low-power mode. In addition, event-driven reporting can leave the host free between changes in state.



Overview

Revision	a
Package	T44-10
Packaging	12 mm tape and reel, 500 per 7 in reel
Power	1.71–3.5V (125 µA typical in normal power (16 ms report rate), 37.5 µA low power, 4 µA ultra-low, 2 µA halt)
Component	IQS323
Interfaces	I2C

Pad Assignments



(top view)

PAD	TYPE	FUNCTION	NOTE
1	power	GND	
3	digital	RDY	Data-ready, open-drain, active low. On-tile 4.7 kΩ pull-up and 100 nF to GND. Also the IQS323 MCLR reset input (low outside a communication window resets the chip).
4	digital	I2C.CLK	
5	digital	I2C.DAT	
8	analog	C0	additional external cap-touch input
10	power	V+	1.71-3.5V



Interfaces

I2C

I2C

Mode

Max Clock

Address

slave

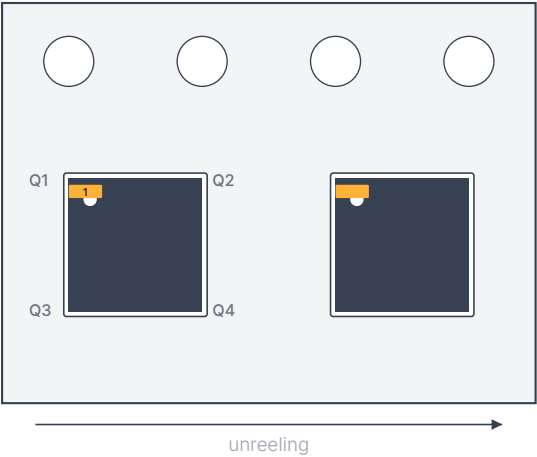
1MHz

0x44 (default)

FUNCTION	REQ	PAD(S)
I2C.CLK	No	4
I2C.DAT	No	5

Packaging

Method	Tape and reel, EIA-481
Carrier tape	12 mm embossed, cold seal cover tape
Pocket	4.3 × 4.3 × 1.8 mm (A0 × B0 × K0)
Pocket pitch	8 mm (P1)
Reel	7 in (178 mm)
Quantity	500 per reel
Pin 1	Quadrant 1 per EIA-481: keyed land toward the sprocket holes, tile face up
	Tape and reel drawing (PDF)



Application Notes

Sensing Surface

The entire top surface of the tile connected to the C1 sensor input with a 470-ohm series resistor.

Secondary Input

The C0 input on the IQS323 is directly connected to pad 8 of the tile, allowing for user configuration of a secondary capacitive touch input.