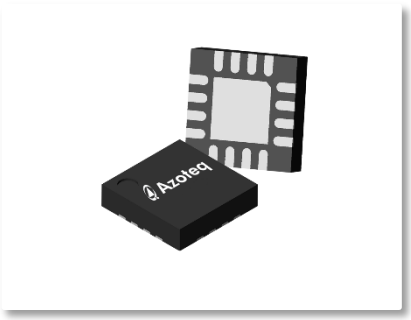
IQS269A OVERVIEW

8 Channel Capacitive Touch and Proximity Controller with Hall-effect and Inductive sensing

The **IQS269A** ProxFusion® IC is an 8-channel self/mutual-capacitive proximity and touch controller with best in class sensitivity, signal to noise ratio and power consumption. In addition, the device offers mixed sensing abilities such as Hall-effect and inductive sensing. Other features include automatic tuning and differential offset compensation for sense electrodes.

1. Main Features

- Highly flexible 8-channel ProxFusion® controller
- Each channel can be configured with connections to up to 8 external connections OR one internal option
- **8 external** sensor pad connections:
  - Self/Mutual-capacitive sensors
  - Self/Mutual-cnductive sensors
  - Dedicated reference sensor mode for environmental / mechanically sensitive designs
- **Internal** sensor option:
  - Hall sensor



QFN(3x3)-16 package

Representation only

WLCSP(1.65x1.65)-16 package

Representation only

- Serial scanning (single ProxFusion® engine) – up to 8 time-slots
- Built-in basic functions:
  - Automatic tuning
  - Noise filtering
  - Differential measurements (reference channels)
  - Debounce & hysteresis
  - Dual direction trigger indication

- Built-in user-interface options
  - Slider (up to 8 elements each) with co-ordinate output, flick/swipe/tap detection
  - Up to two sliders may be defined
  - Integrated measurement set for capacitance calculation
- Wide range of capacitance detection, wide electrode range of 0 to 200 pF
- Multiple custom signal level event triggers (e.g. proximity, deep proximity, touch, deep touch)
- Capacitive resolution: down to 0.02fF
  Automatic reference channel UI's for temperature and mechanical effects. Assign a reference channel to any single or group of sensing channels
- Options for reduced RF emissions for integration in RF sensitive environments (wide range of charge transfer frequency options)
- I^2C interface with IRQ (RDY) line
- Event mode (including reduced interrupt options: blocking & hysteresis)
- Assign a touch flag state of any channel to a dedicated GPIO (default: active low, open drain)
- Dedicated address selection pin
- Special pre-programmed options:
  - Standalone operation on power-up (low-power single button touch)
  - Active high output (push-pull)
- Timed long-press output (pulse after 5 second touch)
- Supply voltage: 1.8V (-2%) to 3.6V
- **Package options:** QFN16 (3 x 3 x 0.8mm), WLCSP-16 (1.65 x 1.65 x 0.5mm)

2. Applications

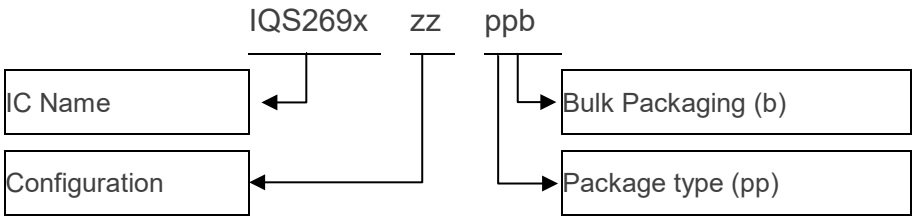
- SAR compliance in mobile devices
- Wear detection
- Multi-slider & button designs
- Low power wake-up buttons / proximity
- Hall-effect dock detection
- Door/window opening detection
- Window breakage detection
- Smart home systems
- Room occupancy detection
- Security alarm systems

3. Description

The IQS269A is a low-power integrated sensor that features ProxFusion® technology for high-end proximity and touch applications. The IQS269A provides a highly integrated capacitive-touch solution with flexibility, unique combination sensing and long-term stability. The solution is specifically aimed at providing an accurate output to ensure safety and performance in mobile electronics.

4. Ordering information

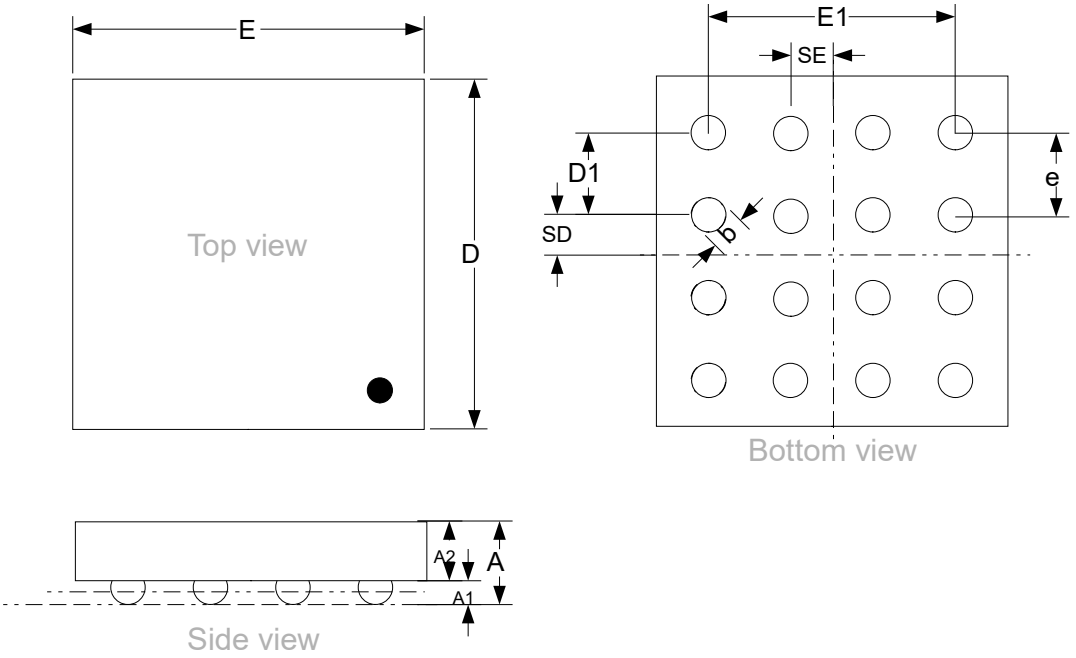
Please check stock availability with your local distributor.



IC NAME	IQS269A	=	IQS269A
CONFIGURATION	zz	=	IC configuration (hexadecimal)
		=	**Default: 00**
			TWS touch out: D0
PACKAGE TYPE	QN	=	QFN16 package
	CS	=	WLCSP-16 package
BULK PACKAGING	R	=	Reel (3000pcs/reel) – MOQ = 3000pcs
		=	MOQ = 1 reel (orders shipped as full reels)

5. Package specification

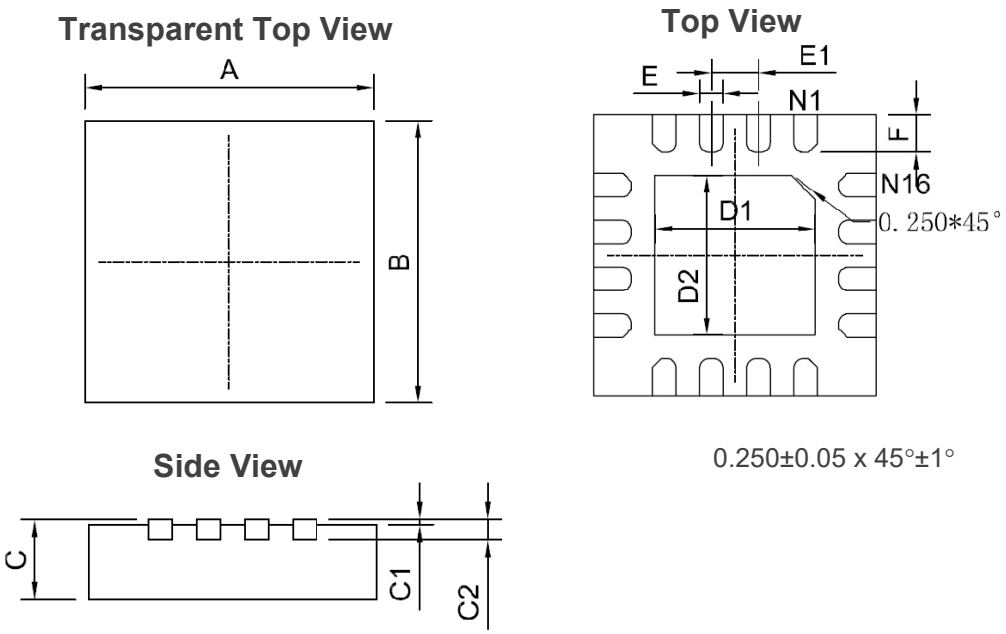
5.1 Package outline description – WLCSP16



Dimension	[mm]	Dimension	[mm]
A	0.5±0.05	D1	0.4±0.025
A1	0.2±0.015	SD	0.2 BSC
A2	0.3±0.025	E	1.65±0.05
b	0.25±0.025	E1	1.2
D	1.65±0.05	SE	0.2 BSC
		e	0.4 BSC

Figure 5.1.1: WLCSP (1.65x1.65)-16 Package

5.2 Package outline description – QFN16



0.250±0.05 x 45°±1°

Dimension	[mm]	Dimension	[mm]
A	3.0±0.1	D1	1.7±0.05
B	3.0±0.1	D2	1.7±0.05
C	0.75±0.05	E	0.25±0.05
C1	0.025±0.025	E1	0.5±0.05
C2	0.203±0.05	F	0.4±0.05

Figure 5.2.1: QFN(3x3)-16 Package

	USA	Asia	South Africa
Physical Address	6507 Jester Blvd Bldg 5, suite 510G Austin TX 78750 USA	Rm2125, Glittery City Shennan Rd Futian District Shenzhen, 518033 China	1 Bergsig Avenue Paarl 7646 South Africa
Postal Address	6507 Jester Blvd Bldg 5, suite 510G Austin TX 78750 USA	Rm2125, Glittery City Shennan Rd Futian District Shenzhen, 518033 China	PO Box 3534 Paarl 7620 South Africa
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