



IQS9342 Datasheet

Multi-Channel Inductive Sensing Device Aimed at Analog Keyboard Applications with Multi-Level Detection of Numerous Keys

1 Device Overview

The IQS9342 ProxSense® IC is a multi-channel inductive sensing device that supports up to 42 channels per device and up to 16 kHz sampling rate. The IC also supports on-chip environmental compensation.

1.1 Main Features

- > Up to 42 inductive channels (single-ended) and up to 21 channels (differential)
- > Up to 16 kHz sampling rate with 42 processed channels
- > Environmental tracking
- > Selectable power states
- > Highly configurable
- > 16-bit raw data per channel
- > SPI communication interface up to 20 MHz
- > Designed for multiplexed device array
- > QFN64 (6×6×0.75 mm) – 0.4 mm pitch
- > Wide input voltage supply range: 2.2 V to 3.5 V
- > Wide operating temperature range: –40 °C to +85 °C



Figure 1.1: IQS9342
QFN64 Package

1.2 Applications

- > Analog keyboards for gaming/productivity
- > Contactless button applications for industrial/white goods
- > Musical equipments
- > Forcepads



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2 QFN64 Pinout

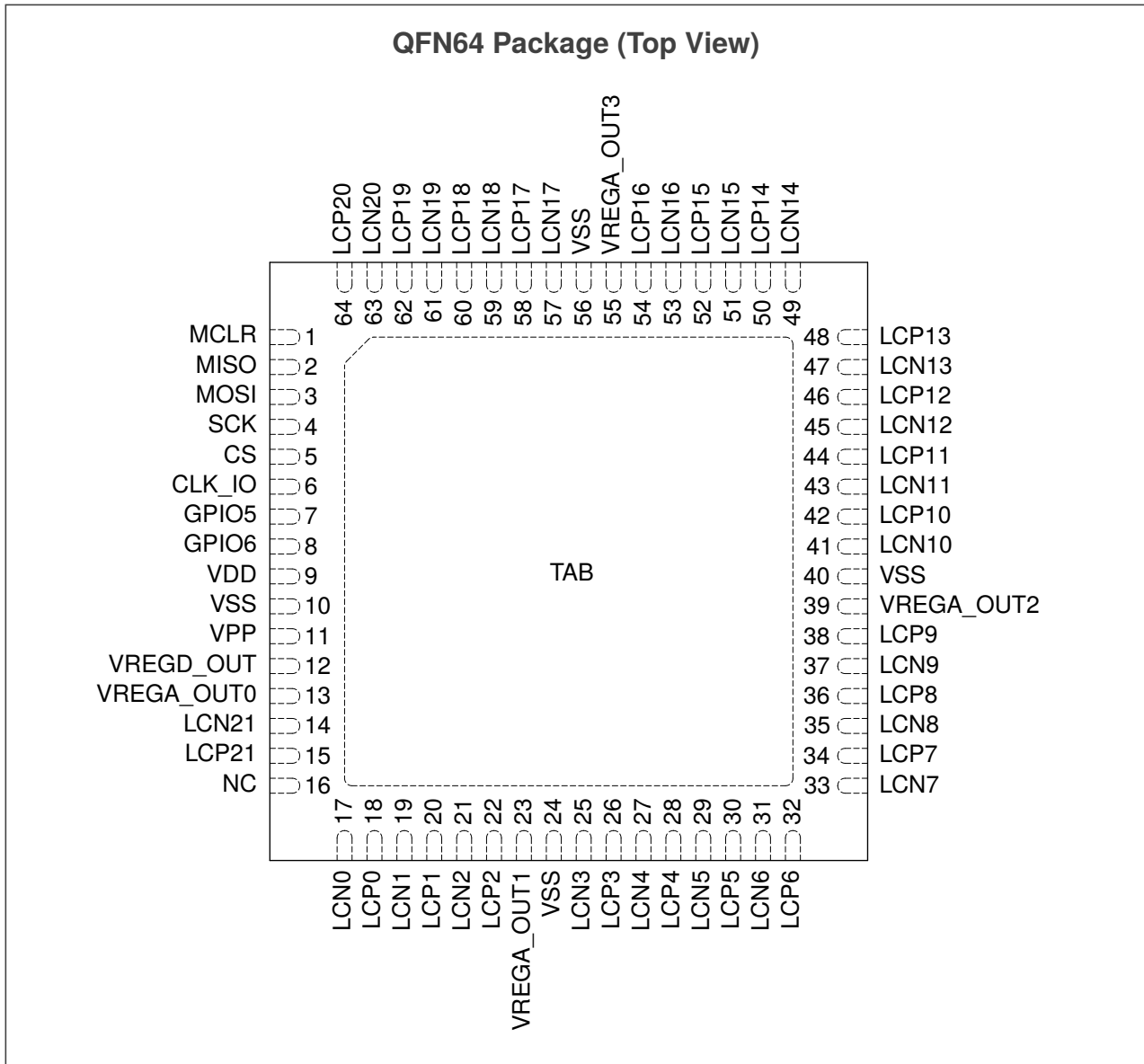


Figure 2.1: QFN64 Pinout



3 Reference Schematic

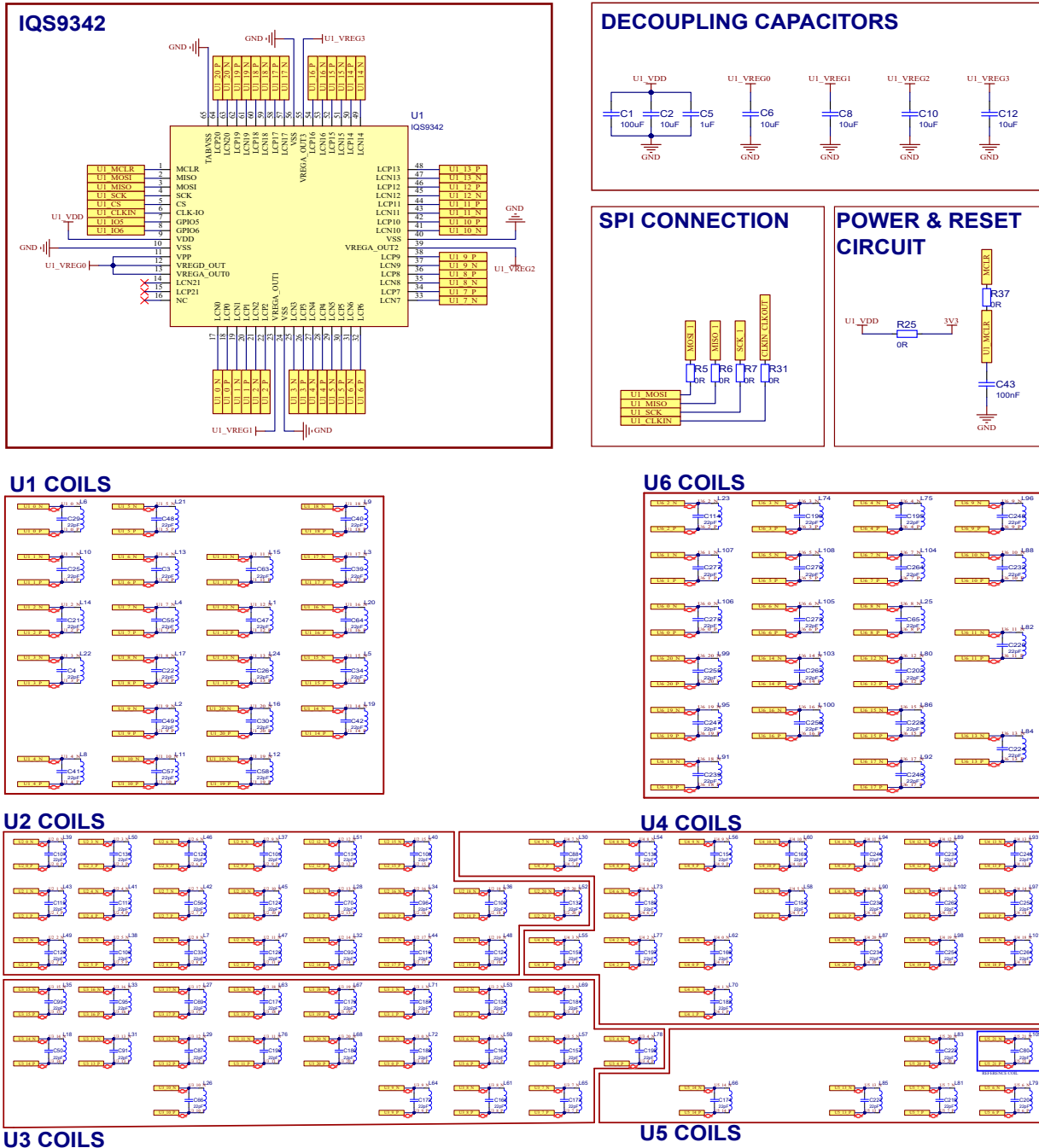
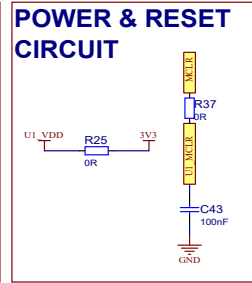
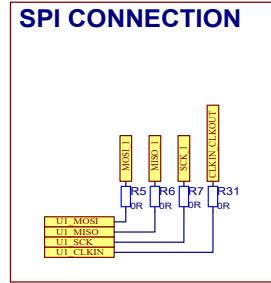
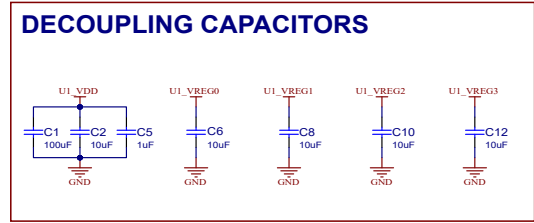
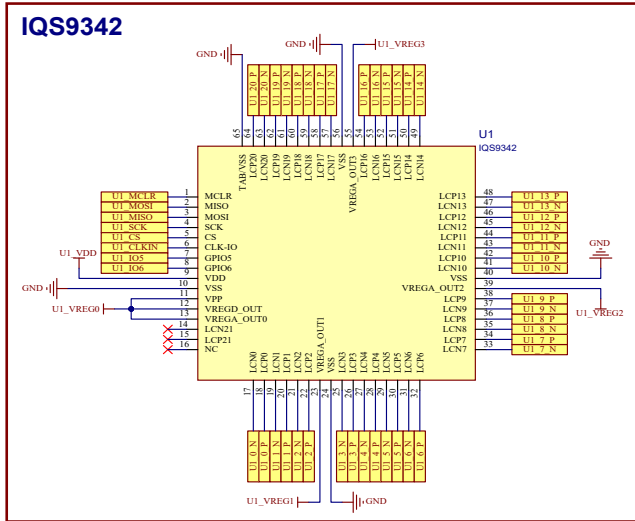
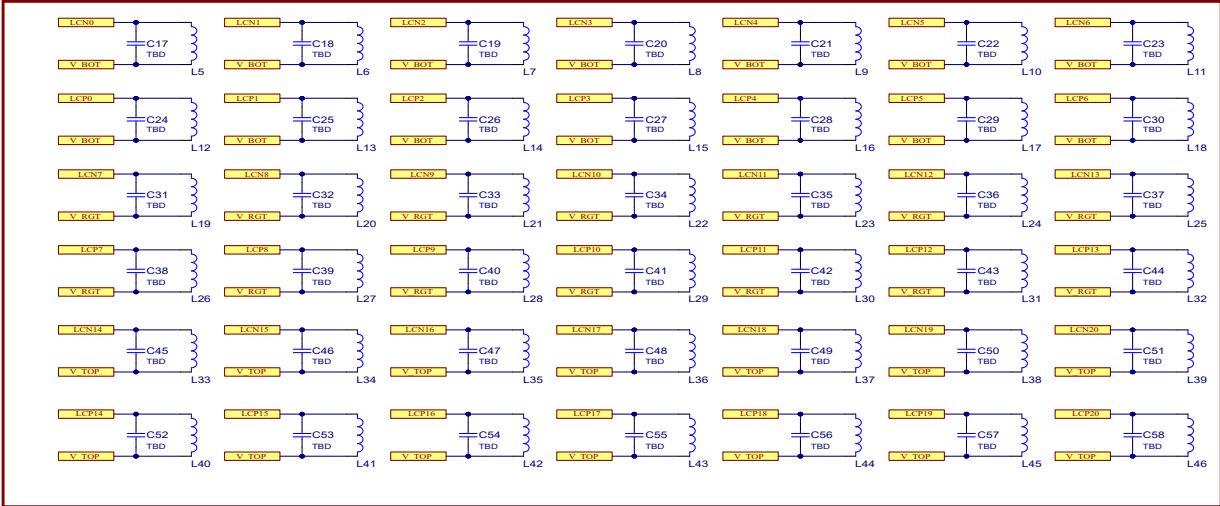


Figure 3.1: Differential IQS9342 Single Device Reference Schematic



SINGLE ENDED SENSOR COILS x42



LC CLOCK REFERENCE

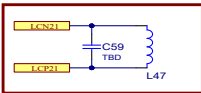


Figure 3.2: Single-Ended IQS9342 Single Device Reference Schematic



4 Electrical Characteristics

4.1 Absolute Maximum Ratings

Table 4.1: Absolute Maximum Ratings

Symbol	Rating	Min	Max	Unit
V_{DD}	Voltage applied at VDD pin (referenced to VSS)	-0.3	3.6	V
V_{IN}	Voltage applied to any ProxFusion® pin (referenced to VSS)	-0.3	V_{REG}	V
	Voltage applied to any other pin (referenced to VSS)	-0.3	$V_{DD} + 0.3$ (3.6 V max)	V
T_{stg}	Storage temperature	-40	85	°C



5 Ordering Information

5.1 Ordering Code

IQS9342 – zzz ppb

Table 5.1: Order Code Description

IC NAME			IQS9342
CONFIGURATION	zzz	=	000 Default Configuration SPI
PACKAGE TYPE	pp	=	QF QFN-64 Package
BULK PACKAGING	b	=	R QFN-64 Reel (3000 pcs/reel)

Example : IQS9342-000QFR

5.2 QFN64 Top Markings

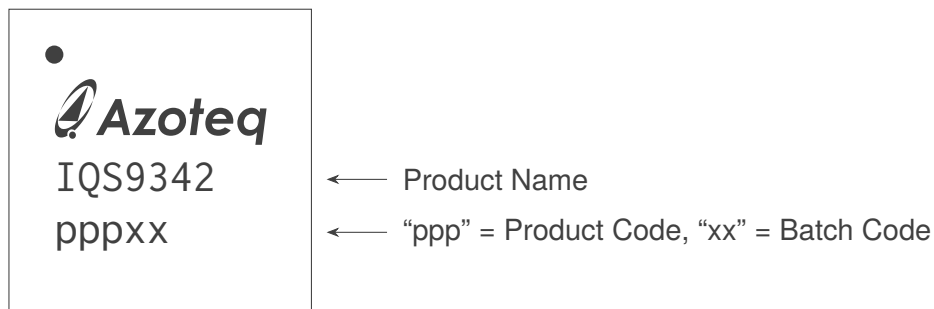


Figure 5.1: IQS9342-QFN64 Package Top Marking

6 QFN64 Package Information

6.1 QFN64 Package Outline

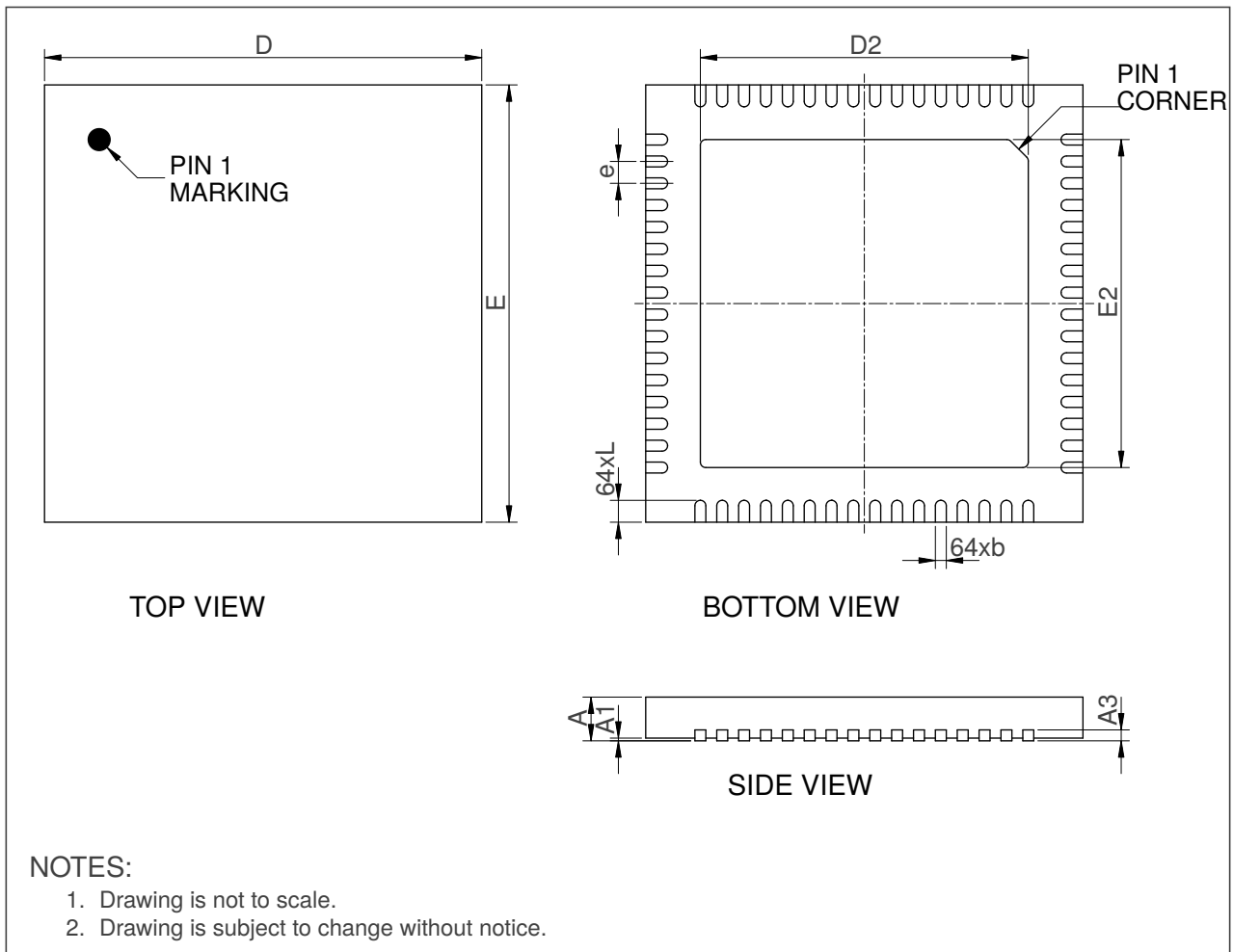


Figure 6.1: QFN64 Package Outline

Table 6.1: QFN64 Package Dimensions [mm]

Dimension	Millimeters		
	Min	Typ	Max
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
A3	0.20 REF		
b	0.15	0.20	0.25
D	8.00 BSC		
E	8.00 BSC		
D1	5.90	6.00	6.10
E1	5.90	6.00	6.10
e	0.40 BSC		
L	0.30	0.40	0.50




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