

## Product Overview

### LC717A00AJ: Capacitance-Digital-Converter for Electrostatic Capacitive Touch Sensors

For complete documentation, see the data sheet.

The LC717A00AJ is a high-performance, low-cost capacitance-digital-converter LSI for electrostatic capacitive touch sensor, especially focused on usability. It has 8 channels capacitance-sensor input. The built-in logic circuit can detect the state (ON/OFF) of each input and output the result. This makes it ideal for various switch applications. The calibration function is automatically performed by the built-in logic circuit during power activation or whenever there are environmental changes. In addition, since initial settings of parameters, such as gain, are configured, LC717A00AJ can operate as stand-alone when the recommended switch pattern is applied. Also, since LC717A00AJ has a serial interface compatible with I2C and SPI bus, parameters can be adjusted using external devices whenever necessary. Moreover, outputs of the 8-input capacitance data can be detected and measured as 8-bit data.

#### Features

- Detection system: Differential capacitance detection (Mutual capacitance type)
- Input capacitance resolution: Can detect capacitance changes in the femto Farad order
- Measurement interval (8 differential inputs): 18ms (Typ) (at initial configuration), 3ms (Typ) (at minimum interval configuration)
- External components for measurement: Not required
- Current consumption: 320  $\mu\text{A}$  (Typ) ( $V_{DD} = 2.8\text{ V}$ ), 740  $\mu\text{A}$  (Typ) ( $V_{DD} = 5.5\text{ V}$ )
- Supply voltage: 2.6 V to 5.5 V
- Detection operations: Switch
- Interface: I2C compatible bus or SPI selectable.

#### Applications

- White goods
- Black goods
- PC peripherals
- Office Automation

#### Benefits

- High sensitivity performance - even wearing multiple layers of gloves, air gap, or thick materials
- Design friendly - can be connected directly to a familiar MCU and execute stand alone operation
- Automated built-in noise and environmental change compensation function technology

#### End Products

- Refrigerator
- Washing machine
- Cooking appliances
- TV
- Printer

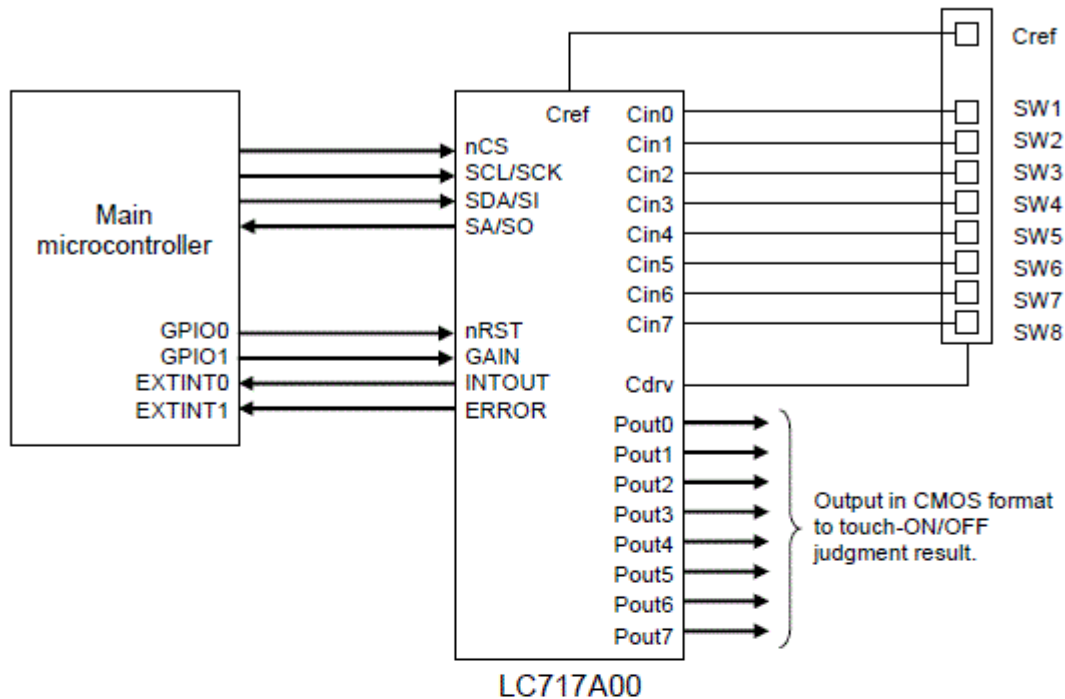
### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Number of Sensing Inputs	Number of Sensing Outputs	Interface Control	Proximity Sensing	$V_{DD}$ Min (V)	$V_{DD}$ Max (V)	$I_{DD}$ Typ ( $\mu\text{A}$ )	Package Type
LC717A00AJ-AH	0.9866	Pb-free	Active	8	8	I2C	Yes	2.6	5.5	320	SSOP-30
		Halide free				SPI				740	

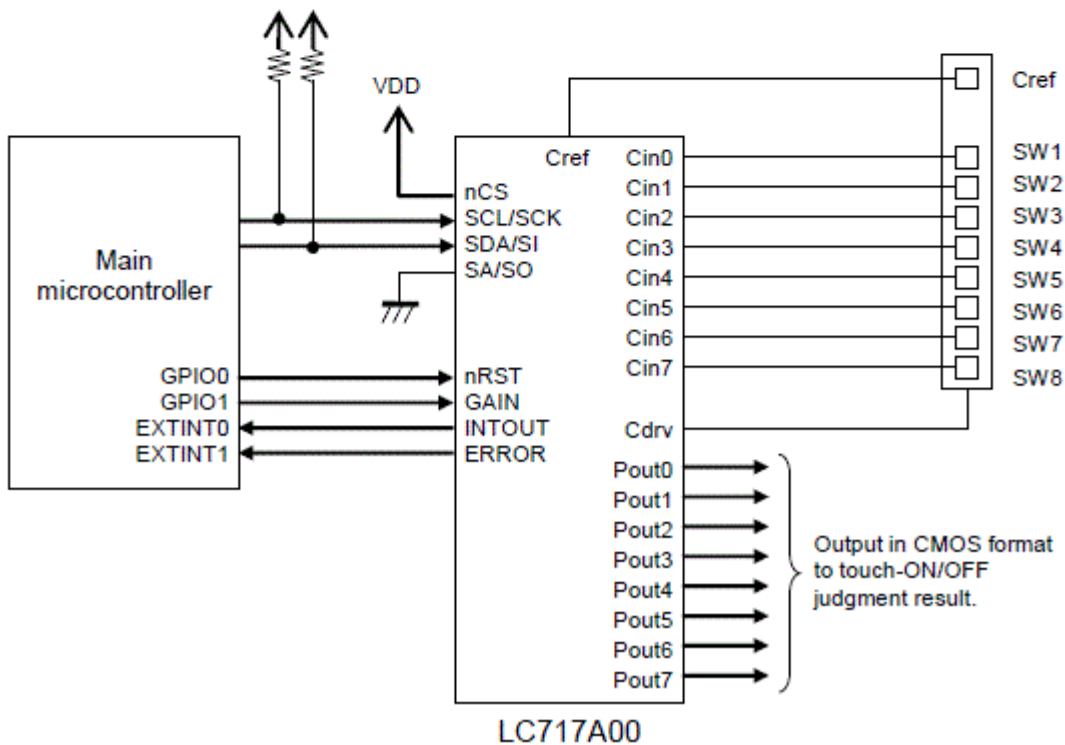
## Application Diagram

### Application Schematic

- 8 capacitance sensor switches and 4-wire SPI interface.



- 8 capacitance sensor switches and I<sup>2</sup>C interface.



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