



Capacitive Sensor LSIs

BU21008MUV/BU21009MUV/BU21010MUV

●Outline

ROHM's capacitive sensor LSIs allows the creation of a totally new user interface. Sensor data processing and application functions are integrated into one LSI, reducing the load on the host CPU while enabling configuration of a variety of devices, from simple touch-button switches to high precision 2D touch panels, with minimum set constraints.

●Features

- 1) Sensing circuit unaffected by sensor electrode resistance due to proprietary CV conversion circuit technology
- 2) Compatible with both SPI and I²C serial bus interfaces (BU21010MUV only compatible with I²C)
- 3) Equipped with LED illumination function (flicker, PWM control)
- 4) Gesture identification function (short push, long push, slide)
- 5) XY Touch Panel Control (Max.80x48 matrix)

●Applications

Mobile phones, digital cameras, digital video cameras, digital portable audio players, LCD TVs, PDP TVs, car navigation systems, large household electrical appliances, and any device with controls.

●Specifications

Part No.	Type	Function	Interface	Package
BU21008MUV	16CH sensors	Gesture / PWM	SPI/I ² C BUS	VQFN032V5050
BU21009MUV	2D Touch Panel	2D Touch Panel control		
BU21010MUV	8CH sensors	Gesture	I ² C BUS	VQFN016V3030

- The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- The application circuit examples, information, and various data pertaining to the use of the products presented in this documentation are provided for reference purposes only.
- Please note that ROHM cannot bear any responsibility regarding any problems relating to industrial property rights resulting from their use thereof.

The products listed in this catalog are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys). Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Current specifications in effect of 1st. April 2007.

Excellence in Electronics



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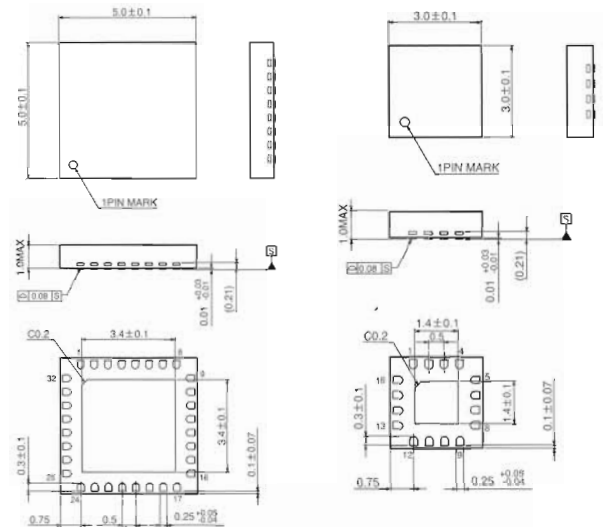
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●Dimensions (Unit : mm)



VQFN032V5050

VQFN016V3030



● **Absolute Maximum Ratings** (Ta=25°C)

(BU21008MUV)

Parameter	Symbol	Limits	Unit	Conditions
Supply Voltage	VDD	-0.3 to 4.5	V	GND terminal reference
Input Voltage	VIN	-0.5 to VDD+0.3	V	GND terminal reference
Output Voltage	VOUT	-0.5 to VDD+0.3	V	GND terminal reference
Power Dissipation	Pd	310 *1	mW	With VQFN032V5050 package
Storage Temperature Range	Tstg	-55 to 125	°C	

*1: Reduced by 3.1mW / °C over Ta=25°C

● **Operating Range** (Ta=25°C unless otherwise noted)

(BU21008MUV)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	AVDD	2.5	3.0	3.3	V
	DVDD	1.7	3.0	3.3	V
Operating Temperature Range	Topr	-40	25	85	°C

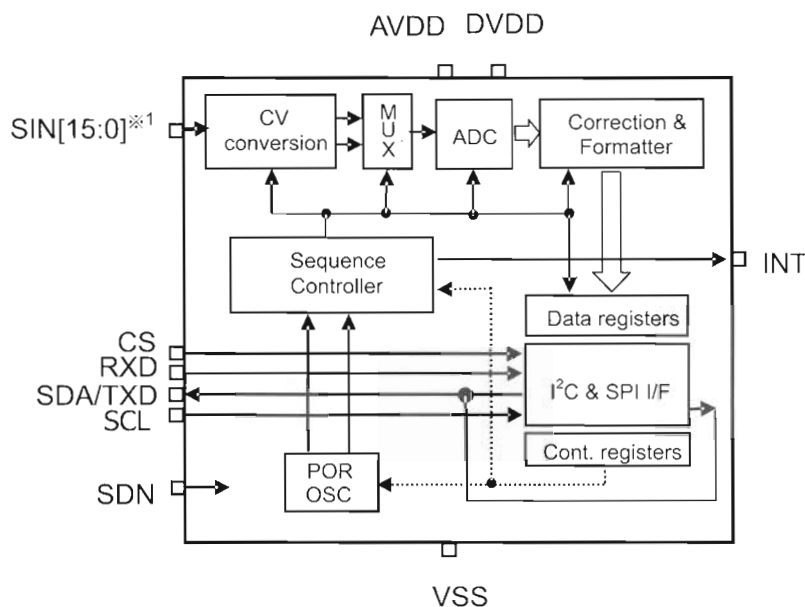
● **Electrical Characteristics** (Ta=25°C unless otherwise noted)

(BU21008MUV)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Input H Voltage	VIHO	DVDDx0.7	-	DVDD+0.5	V		
Input L Voltage	VILO	-0.5	-	DVDDx0.3	V		
Output H Voltage	VOHSNS	AVDD-0.1	-	AVDD	V	IOH=-1mA, Not including undershoot	
	VOHIO	DVDD-0.3	-	DVDD	V	IOH=-2mA, Not including undershoot	
Output L Voltage	VOLSNS	VSS	-	0.1	V	IOL=1mA, Not including undershoot SIN output only	
	VOLLED	VSS	-	0.4		IOL=8mA, Not including undershoot LED output only	
	VOLTXD	VSS	-	0.4		DVDDx0.2	IOL=3mA, Not including undershoot. Apply to SDA/TXD
	VOLINT	VSS	-	0.3		IOL=2mA, Not including undershoot Apply to INT	
Input Leak Current	IIZ	-1	-	1	µA		
Output OFF Leak Current	IOZ	-1	-	1	µA		
Standby Current	IST	-	-	2	µA	Shutdown (SDN=L)	
Operating Current	IDD	-	250	500	µA	Standard (DVDD=1.8V, AVDD=3.0V)	

● **Block Diagram**

(BU21008MUV/BU21009MUV)



※ 1 : SIN [7:0] (BU21010MUV)