

Digital Contact Controller

ATA2501 Brief Datasheet

Introduction

Digital contact controller (ATA2501), using ATLab's proprietary impedance matching technology, not only enables an easy realization of navigation and access to contents in portable devices such as mobile phones, MP3 players and PDA's, but also is able to replace many mechanical buttons on electronic products. One controller detects 12 sensor inputs of human finger contact and transmits the result to MCU through serial interface at the speed of up to 500 times per second. For computer mouse scroll application, ATLab's patented navigation engine is included to calculate direction and magnitude of finger gesture.

Since impedance matching is very difficult to cope with user's various applications, ATA2501 provides automatic impedance calibration (AIC) function that will automatically adjust contact sensitivity for maximum design flexibility.

Another benefit of using ATA2501 is its low power consumption capability. It only consumes less than 120uA during normal operation. It can also be suspended when device is in the idle state in order to save more power.

There are 2package types available: 48TQFP and 40QFN.

Environmental Specification

Operating Temp.	-40 °C to 90°C
Storage Temp.	-45 °C to 95°C
ESD.	HBM : 8 kilovolts (Touch Sensor Inputs)

Electrical Specification

Operating Volt.	2.5V ~ 3.5V
Supply Current	Active mode : < 0.12 mA Idle mode : < 0.06 mA Sleep mode : < 0.001mA
Touch Sensitivity	0.03pF

Features

- Up to twelve contact sensor inputs used for scroll, navigation and selection
- Versatile interfaces available: Serial Interface, Direct I/O Interface and Quadrature interface
- Proprietary navigation engine included for mouse scroll application
- Supports user's own sensor layout for maximum design flexibility
- Automatically adjusts sensor sensitivity to cope with various operating environment
- No external clock source is required
- Supports Idle and sleep mode for power saving
- High reliable ESD input pads
- Lead free package

Applications

- Portable devices such as PDA's, cellular phones, MP3 players, remote controllers, and other Integrated input devices
- Home appliances and consumer electronic products.
- Mice for desktop PC's, workstations, and notebook PC's

Package Types (Lead free packages)

Package Type	Product Code	Sensor Inputs	DIO	Size (mm)
48TQFP	ATA2501DB	12	3	9X9X1.2
	ATA2501DC			
40QFN	ATA2501DB-40N	12	-	5X5X0.75
	ATA2501DC-40N			

*ATA2501DC and ATA2501DC-40N:
Idle mode enable/disable selection option include

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