上海复旦微电子股份有限公司
SHANGHAI FUDAN MICROELECTRONICS CO., LTD

Touch Screen Controller FM7843

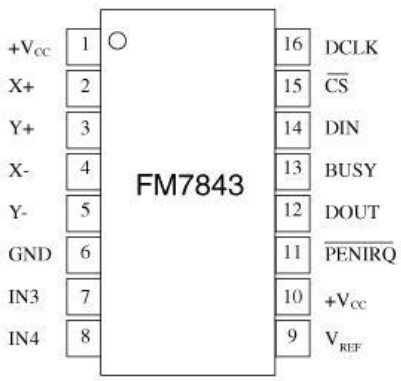
Consumer Products electronic products

FM7843 is a 4-wire resistive touch screen input controller integrated circuit.The device is a 12-bit analog-to-digital converter with a synchronous serial interface and touch screen driving circuit.It has a shutdown mode, in which the power dissipation of the device is as low as 0.5uW.Fully compatible with Burr-Brown ADS7843, this device is ideal to be used in personal digital assistant applications.

FEATURES

- Realizing the driver selection of touch screen
- Analog-to-digital conversion on input voltage or auxiliary voltage
- Synchronous serial interface
- Up to 125KHz conversion rate
- Programmable 8-bit or 12-bit resolution
- Single supply:2.7V to 5V
- 2 auxiliary analog inputs

PIN ASSIGNMENTS



SPECIFICATIONS

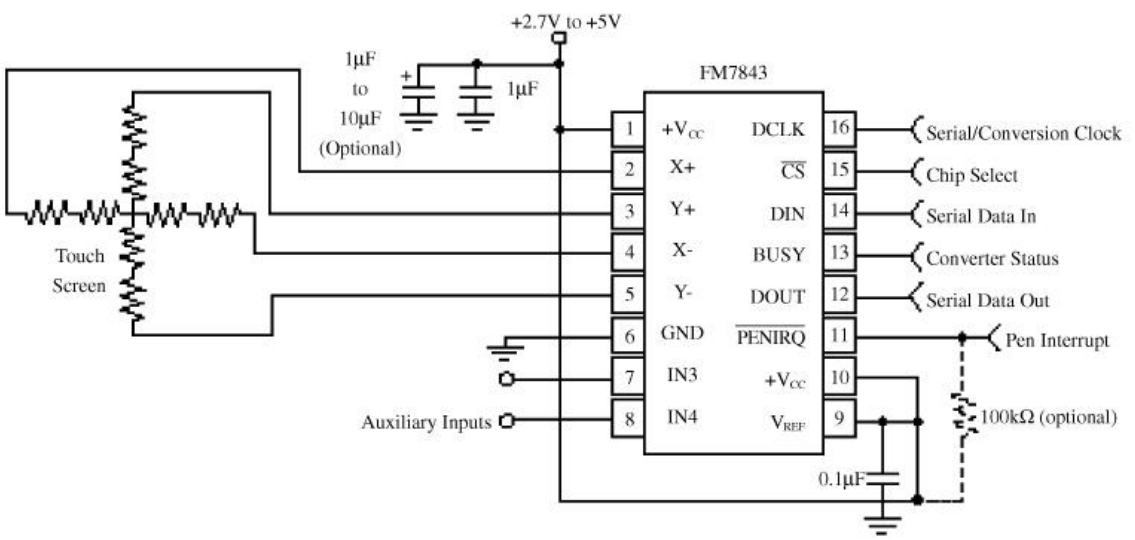
V_{CC}=2.7V, V_{REF}=2.5V, f_{sample}=125KHz, f_{clk}=2MHz

	Parameter	Min	Typ	Max	Unit
ANALOG INPUT	Absolute Input Range	-0.2		$+V_{CC}$+0.2	V
	Capacitance		25		pF
	Leakage Current		0.1		μA
SYSTEM PERFORMANCE	Resolution		12		Bits
	No Missing Codes	11			Bits
	Integral Linearity Error			± 2	LSB
	Offset Error			± 6	LSB
	Gain Error			± 4	LSB
	Power Supply Rejection		70		dB
SAMPLING DYNAMICS	Conversion Time			12	Clk Cycles
	Acquisition Time	3			ClkCycles
	Throughput Rate			125	KHz
SWITCH DRIVERS	On-Resistance		5		Ω
POWER SUPPLY REQUIREMENTS	Quiescent Current		280	650	μA
	Shut Down Mode			3	μA
	Power Dissipation			1.8	mW

PIN FUNCTIONS

Name	Pin	Functions
V_{CC}	1	Power Supply,2.7V to 5V
X+	2	X+ Position Input.ADC input Channel 1
Y+	3	Y+ Position Input.ADC input Channel 2
X-	4	X- Position Input
Y-	5	Y- Position Input
GND	6	Ground
IN3	7	Auxiliary Input 1. ADC input Channel 3
IN4	8	Auxiliary Input 2. ADC input Channel 4
V_{REF}	9	Voltage Reference Input
$+V_{CC}$	10	Power Supply,2.7V to 5V
$\overline{PENIRQ}$	11	Pen Interrupt.Open anode output(requires 10kΩ to 100KΩ pull-up resistor externally).
DOUT	12	Serial Data Output. Data is shifted on the falling edge of DCLK.This output is high impedance when $\overline{CS}$ is HIGH.
BUSY	13	Busy Output.This output is high impedance when $\overline{CS}$ is HIGH
DIN	14	Serial Data Input.If $\overline{CS}$ is LOW,data is latched on rising edge of DCLK.
$\overline{CS}$	15	Chip Select Input,Controls conversion timing and enables the serial input/output register.
DCLK	16	External Clock Input.This clock runs the SAR conversion process and synchronizes serial data I/O.

APPLICATION CIRCUIT



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