



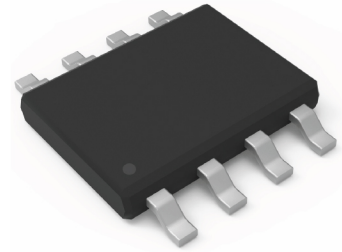
REAL TIME CLOCK IC

REAL TIME CLOCK IC (External Crystal Oscillator)

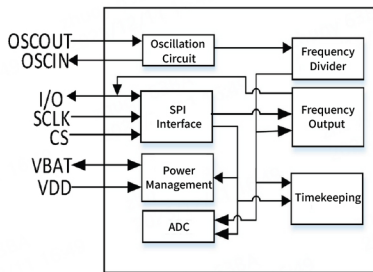


ST8902

- Low power consumption: 0.6 μ A typical ($T_a=25^\circ\text{C}$).
- Operating voltage: 1.8V~5.5V; Clock voltage: 1.5V~5.5V.
- Operating temperature: $-40^\circ\text{C}\sim+105^\circ\text{C}$.
- ROHS Recognized
- 3-wire serial interface, up to 2MHz.
- Chip pin ESD>4KV
- CMOS Process
- Package Form:SOP8



Block diagram



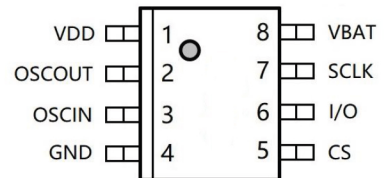
Overview

- Built-in Battery Charging; VBAT selectable charging voltage of 3.1V or 4.1V.
- Digital Calibration Function
- Pass 4 kV EFT Interference Test
- Battery Voltage & Temperature Measurement
- Built-in Communication Verification Function
- Built-in 31-Byte General-Purpose SRAM Registers
- Built-in clock data write-protection function
- Built-in 8-Byte ID

Pin Function

Pin	Name	Function	Feature
1	VDD	Positive power supply pin	1.8V ~ 5.5V
2	OSCOUT	Crystal oscillator output	0 ~ 1.5V output
3	OSCIN	Crystal oscillator input	0 ~ 1.5V input
4	GND	Power ground	-
5	CS	Chip select pin, internally pulled down to ground through a 40k Ω resistor	CMOS input
6	I/O	Data input/output pin, internally pulled down to ground through a 40k Ω resistor	CMOS input/output
7	SCLK	Serial clock pin, internally pulled down to ground through a 40k Ω resistor	CMOS input
8	VBAT	Backup battery input pin	-

Terminal connection



DC Characteristics

Symbol	Parameter	Condition	Min	Typical	Max	Unit
V_{DD}	Main Supply Voltage		1.8		5.5	V
V_{keep}	Keep-Alive Voltage		1.5		5.5	V
V_{BAT}	Backup Battery Supply Voltage		1.5		5.5	V
I_{DD1}	Main Supply Current	$V_{DD} = 5V$		0.6	1.2	μ A
		$V_{DD} = 3V$		0.5	1.0	μ A
I_{BAT}	Backup Battery Supply Current	$V_{BAT} = 3V$		0.5		μ A
V_{OL}	Low-Level Output Voltage	$V_{DD} = 5V, I_{OL} = 0.5mA$	0.1	0.2	0.3	V
V_{DDR}	VDD Rise Rate During Power-Up	$V_{DD} = 5V, I_{OL} = 0.5mA$	0.1		1	V/ms
V_{BATHYS}	Hysteresis Voltage Between V_{BAT} and V_{DD} Switching			85		mV
V_{SW}	Switching Voltage Between V_{BAT} and V_{DD}	$T_a = 25^\circ\text{C}$		2.4		V