



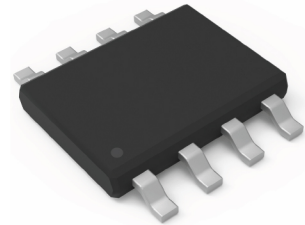
# REAL TIME CLOCK IC

## REAL TIME CLOCK IC (External Crystal Oscillator)

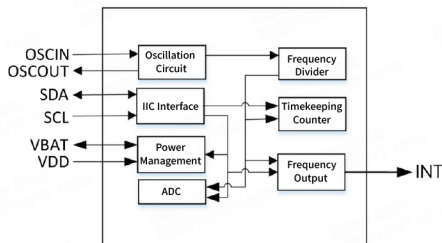


### ST8200

- Low power consumption: 0.6µA typical (Ta=25°C).
- Operating voltage: 1.8V~5.5V; Clock voltage: 1.2V~5.5V.
- Operating temperature: -40°C~+105°C.
- ROHS Recognized
- Standard IIC bus interface, maximum speed 400KHz (4.5V~5.5V).
- Chip pin ESD>4KV
- CMOS Process
- Package Form:SOP8(150mil).



#### Block diagram

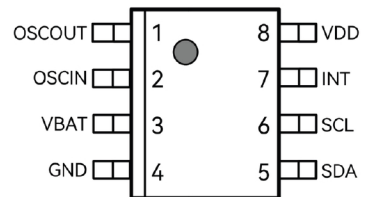


#### Overview

- Digital Calibration Function
- Pass 4 kV EFT Interference Test
- Dual Built-in Time Alarm Registers
- Built-in IIC bus 0.5 seconds automatic reset function.
- Built-in 7-byte alarm registers for day, week, hour and minute.
- Built-in clock data write-protection function
- Built-in power-on reset circuit

#### Pin Function

Pin	Name	Function	Features
1	OSCOUT	Crystal oscillator output	0~1.5V output
2	OSCIN	Crystal oscillator input	0~1.5V input
3	VBAT	Backup battery input pin, with built-in voltage regulation and charging circuit with selectable charging current.	1.5V~5.5V; connect to GND when not in use
4	GND	Power ground (GND)	-
5	SDA	Serial data input/output pin, this pin is usually pulled up to VDD with a resistor, and connected to other devices with open drain or open collector outputs via wire-AND logic.	N-channel open-drain output / CMOS input
6	SCL	Serial clock input pin; since signals are processed on the rising/falling edges of SCL, special attention should be paid to the rise/fall time of the SCL signal, and the specifications must be strictly followed. To reduce the SCL rise time, the MCU port connected to SCL can be set to CMOS output, not open-drain output.	CMOS input
7	INT	Frequency output pin	N-channel open-drain output
8	VDD	Positive power supply pin	1.8V~5.5V



#### DC Characteristics

Symbol	Parameter	Condition	Minimum Value	Typical Value	Maximum Value	Unit
V <sub>DD</sub>	Main Power Supply		1.8		5.5	V
V <sub>KEEP</sub>	Timekeeping Voltage		1.2		5.5	V
V <sub>BAT</sub>	Backup Battery Supply Voltage		1.5		5.5	V
I <sub>DD</sub>	Main Power Supply Current	V <sub>DD</sub> =5V		0.6	1.2	µA
		V <sub>DD</sub> =3V		0.5	1.0	µA
I <sub>DD2</sub>	Power Supply Current During IIC Communication	V <sub>DD</sub> =5V		40	120	µA
		V <sub>DD</sub> =5V		80		µA
I <sub>DD3</sub>	Power Supply Current When Charging is Enabled	V <sub>DD</sub> =5V		80		µA
I <sub>BAT</sub>	Backup Battery Supply Current	V <sub>BAT</sub> =3..3V		0.6		µA
I <sub>IL1</sub>	SCL Input Leakage Current			100		nA
I <sub>LO</sub>	SDA Input/Output Leakage Current			100		nA
V <sub>HYSTMS</sub>	Hysteresis Voltage for Switching Between VBAT and VDD			85		mV
V <sub>SW</sub>	Switching Voltage Between VBAT and VDD	T <sub>ED</sub> =25°C		2.4		V
V <sub>OL</sub>	INT /SDA Low-Level Output Voltage	V <sub>DD</sub> =5V I <sub>OL</sub> =0..5mA	0.1	0.2	0.3	V
V <sub>DR</sub>	VDD Rise Rate During Power Reset		0.1		1	V/ms