



REAL TIME CLOCK IC

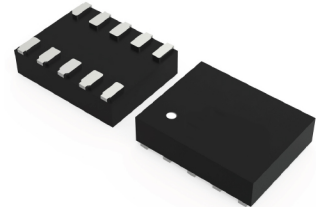
REAL TIME CLOCK IC (Built-in Crystal Oscillator)

High-precision

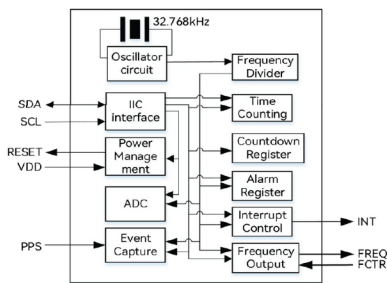


ST8804

- Low power consumption: 0.6µA typical (VDD =3.0V, Ta=25°C).
- Operating voltage: 2.5V ~ 5.5V; Timekeeping: 1.5V ~ 5.5V.
- Operating temperature: -40°C~+125°C.
- Standard IIC bus interface, maximum speed 400KHz (4.5V~5.5V).
- Chip pin ESD>4KV
- CMOS Process
- Package Form:3225(3.2mmx2.5mmx0.75mm).



Block diagram



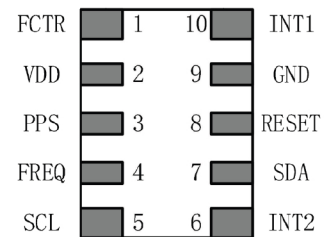
Overview

- Built-in 70-byte general-purpose SRAM
- high precision timing function in a wide temperature range: -40 °C ~ +85 °C $\pm 5 \text{ ppm}$, +86 °C ~ +105 °C $\pm 10 \text{ ppm}$, +106 °C ~ 125 °C $\pm 20 \text{ ppm}$.
- disposable or rechargeable backup battery input pin VBAT
- Built-in IIC bus 0.5 seconds automatic reset function
- Built-in 1/1024 second register
- Built-in communication verification function
- Built-in clock data write-protection function

Pin Function

Name	function	Features
FCTR	FREQ port output enable control, FCTR=0: disable FREQ output; FCTR=1: FREQ output is enabled.	CMOS input
VDD	Positive power pin	
PPS	Input pin for clock synchronization and event capture, with 500kΩ controllable pull-up resistor internally.	Input
FREQ	Frequency output port controlled by FCTR, see FCTR pin description for details.	CMOS output
SCL	Serial Clock Input pin. Since the signal is processed on the rising/falling edge of the SCL, special attention should be paid to the rising/falling rise/lowering time of the SCL signal, and the instructions should be strictly adhered to. In order to reduce the SCL rising edge time, the port where the MCU is connected to SCL can be set to CMOS output, do not set it to open-drain output.	Input
INT2	Output the status of the event flag bit or directly output 0 or 1.	CMOS output
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
RESET	Low active reset pin	N-channel open-drain output
GND	Power supply ground (GND)	
INT1	Alarm interrupt output pin	N-channel open-drain output

Terminal connection



Characteristics

• DC characteristics

Symbol	Parameters	Condition	Min	Typical	Max	Unit
V _{DD}	Main power supply		2.5		5.5	V
V _{keep}	Timekeeping		1.5		5.5	V
I _{DD1}	Main supply current	V _{DD} =5V		0.6	1.2	µA
		V _{DD} =3V		0.5	1.0	µA
I _{DD2}	The supply current when the IIC communicates	V _{DD} =5V		40	120	µA
I _{IL}	The input leakage current of SCL			100		nA
I _{LO}	The input/output leakage current of the SDA			100		nA
V _{OL}	INT /SDA low level output voltage	V _{DD} =5V I _{OL} =0.5mA	0.1	0.2	0.3	V
V _{DDR}	VDD rise rate when power is reset		0.1		1	V/ms
V _{temp}	Temperature compensation threshold voltage			2.4		V

• Frequency Error & Temperature Relationship Curve

