



# REAL TIME CLOCK IC

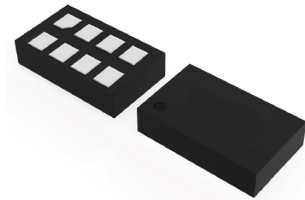
## REAL TIME CLOCK IC (Built-in Crystal Oscillator)

High-precision

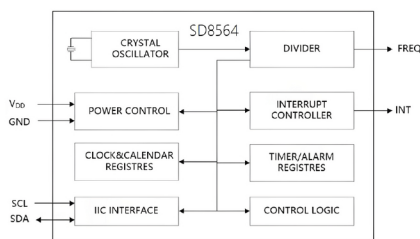


### ST8564

- Low power consumption: 0.4μA typical (VDD =3.0V, Ta=25°C).
- Operating voltage: 1.5V~5.5V; Clock voltage: 1.0V~5.5V.
- Operating temperature: -40°C~+85°C.
- Built-in crystal, High accuracy: ±5ppm at 25°C.
- ROHS Recognized
- Standard IIC bus interface, maximum speed 400KHz (4.5V~5.5V).
- Chip pin ESD>4KV
- CMOS Process
- Package Form:3215(3.2mm×1.5mm×0.75mm).



#### Block diagram



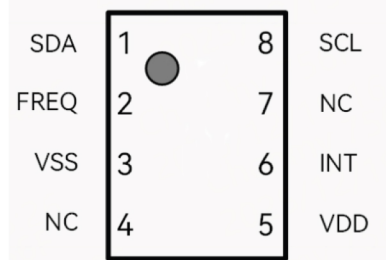
#### Overview

- Built-in a single timer/alarm interrupt output
- A separate frequency pulse output pin
- Built-in IIC bus 0.5 seconds automatic reset function
- Built-in 4-byte alarm registers for day, week, hour and minute.
- Auto-reload 8-bit countdown calculator
- Built-in clock data write-protection function
- Built-in power-on reset circuit
- Built-in power supply regulator

#### Pin Function

Pin	Name	Function	Characteristics
1	SDA	Serial Data Input/Output. This pin is the data input/output for the I2C serial interface. This open-drain pin requires an external pullup resistor. The pullup voltage can be up to 5.5V, regardless of the voltage on VCC.	N-Channel open output, CMOS input.
2	FREQ	Frequency output pin	N-Channel Open Output
3	VSS	Negative power (GND)	
4	NC	No Connected	
5	VDD	DC Power Pin for Primary Power Supply. This pin should be decoupled using a 0.1μF to 1.0μF capacitor.	1.5V to 5.5V
6	INT	Alarm interrupt output pin, according to the control register to set the mode of its operation, it can be disabled by rewriting the control register.	N-Channel Open Output
7	NC	No connected	
8	SCL	Serial Clock Input. This pin is the clock input for the I2C serial interface and is used to synchronize data movement on the serial interface. Up to 5.5V can be used for this pin, regardless of the voltage on VCC.	CMOS Input

#### Terminal connection



#### Characteristics

##### • DC characteristics

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	NOTES
V <sub>DD</sub>	Main Power Supply		1.5		5.5	V	
I <sub>DD1</sub>	Supply Current	V <sub>DD</sub> =5V		0.6	1.0	μA	
		V <sub>DD</sub> =3V		0.4	0.8	μA	
I <sub>DD2</sub>	Supply Current when IIC Active	V <sub>DD</sub> =5V		40	120	μA	
I <sub>L1</sub>	Input Leakage Current On SCL			100		nA	
I <sub>L0</sub>	I/O Leakage Current On SDA			100		nA	
INT V <sub>OL</sub>	Output Low Voltage	V <sub>DD</sub> =5V I <sub>OL</sub> =2mA			0.4	V	

##### • Frequency Error & Temperature Relationship Curve

