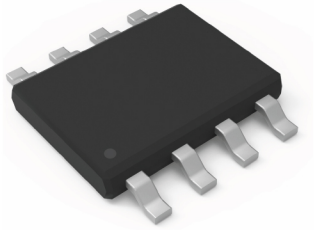
REAL TIME CLOCK IC（Built-in Crystal Oscillator）

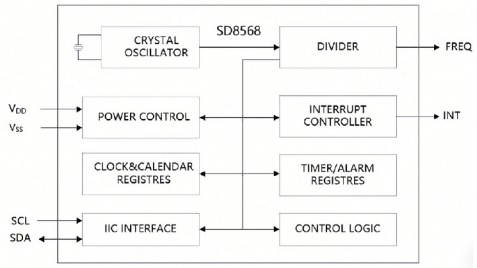
High-precision

ST8568

- 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~+105°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:SOP8（150mil).



Block diagram



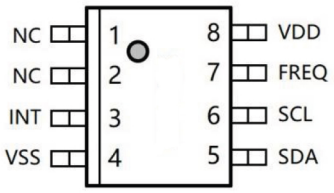
Overview

- Built-in a single timer/alarm interrupt output
- Periodic Frequency Interrupt Output Pin FREQ
- 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 regulation

Pin Function

Pin	Name	Function	Feature
1	NC	Not connected internally	
2	NC	Not connected internally	
3	INT	Alarm interrupt output pin; its operating mode is set by the control register, and it can be disabled by rewriting the control register.	N-channel open-drain output
4	VSS	Negative power supply (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 times of the SCL signal. The MCU port connected to SCL should preferably be configured as CMOS output. Strict adherence to the datasheet is required.	CMOS input
7	FREQ	Frequency output pin	N-channel open-drain output
8	VDD	Positive power supply	1.5V ~ 5.5V

Terminal connection



Characteristics

- DC characteristics

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	NOTES
V_{DD}	Main Power Supply		1.5		5.5	V	
I_{DD1}	Supply Current	V_{DD}=5V		0.6	1.0	μA	
		V_{DD}=3V		0.4	0.8	μA	
I_{DD2}	Supply Currentwhenl IC Active	V_{DD}=5V		40	120	μA	
I_{LI}	Input Leakage Current On SCL			100		nA	
I_{LO}	I/O Leakage Current On SDA			100		nA	
INT V_{OL}	Output Low Voltage	V_{DD}=5V I_{OL}=2mA		0.4		V	
T_{ri}	V_{DD} rise time	0V rise to V_{DD}			3	S	

- Frequency Error & Temperature Relationship Curve