



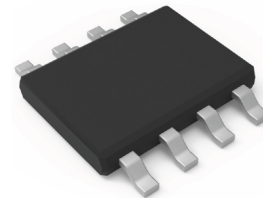
# REAL TIME CLOCK IC

## REAL TIME CLOCK IC (External Crystal Oscillator)

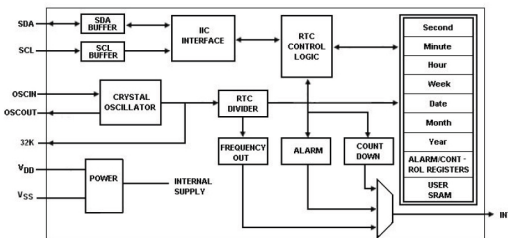


### ST2058

- Low power consumption: 1µA typical (VDD =3.0V, Ta=25°C).
- Operating voltage: 1.3V~5.5V.
- Operating temperature: -40°C~+125°C.
- Passed AEC-Q100&AEC-Q200 Certification
- Standard IIC bus interface, maximum speed 400KHz (4.5V~5.5V).
- Built-in IIC bus 0.5 seconds automatic reset function
- Chip pin ESD>4KV
- CMOS Process
- Package Format:SOP8/MSOP8/DFN3x3-10.



#### Block diagram



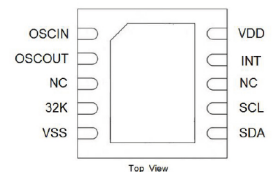
#### Overview

- Internal 44-byte general-purpose SRAM
- Internal high-precision digital calibration function
- Three internal clock data write protection functions
- Auto reload 8-bit countdown timer
- Built-in clock data write-protection function
- Built-in power-on reset circuit
- Independent, controllable 32768Hz square wave output.

#### Pin Function

SOP Pin	DFN Pin	Name	Function	Feature
1	1	OSCIN	Input of crystal oscillator	0~1.5V input
2	2	OSCCOUT	Output of crystal oscillator	0~1.5V output
3	4	32K	32.768kHz square wave signal output pin	N-channel open-drain output
4	5	VSS	Negative power supply (GND)	
5	6	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	7	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, which must strictly follow the datasheet.	CMOS input
7	9	INT	Interrupt output pin for alarm; its operating mode is set by the control register, and it can be disabled by rewriting the control register.	N-channel open-drain output
8	10	VDD	Positive power supply	1.3V ~ 5.5V
	3, 8	NC	Internally unconnected	

#### Terminal connection



#### DC characteristics

##### • DC characteristics

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	NOTES
VDD	Main Power Supply		1.3		5.5	V	
IDD1	Supply Current	VDD=5.0V		1.6	3.0	µA	
		VDD=3.0V		1.0	1.5	µA	
		VDD=1.8V		1.0	1.5	µA	
IDD2	Supply Current with IIC Active	VDD=5V		40	120	µA	
IL1	Input Leakage Current On SCL			100		nA	
ILO	I/O Leakage Current On SDA			100		nA	
VBIASYS	VBIAS Hysteresis		50	100	200	mV	
INT VOL	Output Low Voltage	VDD=5V IOL=2mA			0.4	V	

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

