REAL TIME CLOCK MODULE (I2C-Bus)
Low Current Consumption

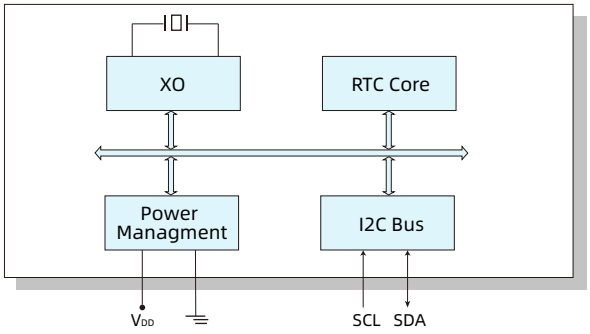
INS5710A

INS5710A is an I2C bus interface real-time clock with low power consumption. It includes a 32.768KHz crystal. It supports not only calendar and clock counter (year, month, day, hour, minute, second) function. All of these functions are implemented in a compact SOP package, which makes it suitable to be used in most electronic devices.

Features:

- Built in 32.768 kHz crystal unit.
- Interface type : I2C-Bus interface (400 kHz)
- Operating voltage range : 2.5 V to 5.0 V
- Wide voltage for time keeping : 1.6 V to 5.0 V
- Low backup current : 120 nA / 3.0V (Typ.)
- Frequency output : C-MOS or Open-Drain output
- SOP 8 pin smaller package: 4.9x6.0x1.6mm

Block Diagram



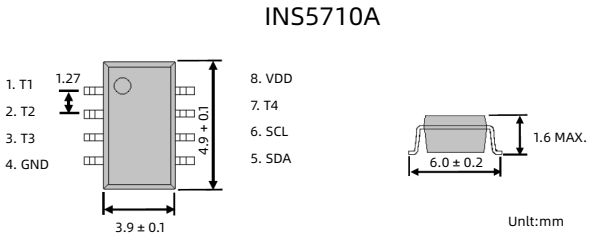
Overview

- Interface type
  I2C-Bus high-speed bus specifications. (400 kHz)
- Frequency output function
  It may select a CMOS or open drain output
  Output frequency can be selected as 32.768kHz, 1024Hz, 1Hz.
- Calendar
  Calendar function can be set to day of week, day, hour, and minute, sencond, 1/16s.
- Leap years autocorrection

Pin Function

Signal Name	I/O	Function
SCL	Input	This is a shift clock input pin for serial data transmission.
SDA	Input/Output	This is the data input/output pin for serial data transfer.
T1,T2,T3,T4	-	Factory test only, N.C.
V_{DD}	Supply	This is a power-supply pin.
GND	Supply	Ground pin

Terminal Connection/Extemal Dimensions



Electrical Characteristics

Item	Symbol	Conditions		Min.	Typ.	Max.	Unit
Operating voltage(normal mode)	V_{DD}	-		2.5	3.0	5.0	V
Operating voltage(Time keeping)	V_{DD}	-		1.6	3.0	5.0	V
Frequency tolerance	$\Delta f_1/f$	V_{DD} =3.0V @+25℃			5±23		x 10^{-6}
	$\Delta f_2/f$	V_{DD} =3.0V-20℃ ~ +70℃ reference frequency @ +25℃		-120		+10	
Aging	fa	@+25℃				±3	
Operating temp.	Ta	-		-40	+25	+85	℃
Temperature sensor accuracy	T_{emp}	V_{DD}=3.0V				±5	℃
Oscillation start-up time	t_{STA}					1	s
Current consumption	I_{DD}	f_{SCL} = 0 Hz, /INT = V_{DD} compensation interval 2s	V_{DD}=5.0V	0.91	-	5.1	μA
			V_{DD}=3.0V	0.6	1.2	4.9	