REAL TIME CLOCK MODULE (I^2C-Bus)

Low current consumption

RoHS Compliant

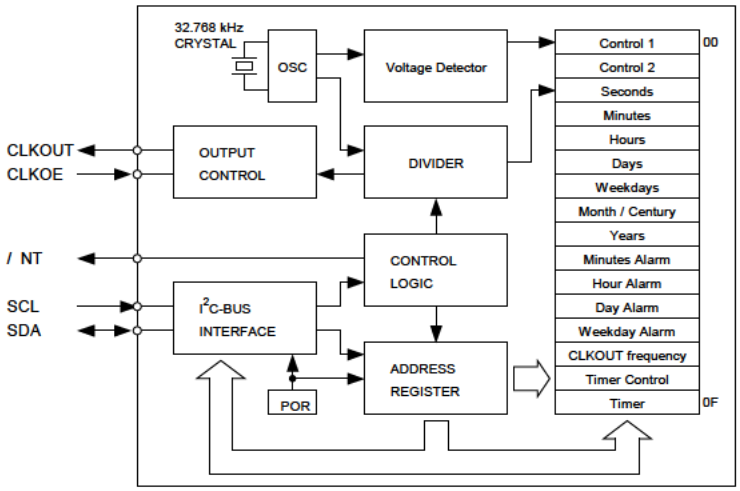
Product Number
RX-8564LC : Q418564C2000100

RX-8564LC

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : I^2C-Bus Interface (400 kHz)
- Operating voltage range : 1.8 V to 5.5 V
- Timekeeper voltage range : 1.0 V to 5.5 V / -20 C to +70 C
- Low backup current : 275 nA / 3.0 V(Typ.)
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- The various functions include full calendar, alarm, timer, and power supply voltage monitoring function

* The I^2C-Bus is a trademark of NXP Semiconductors

Block diagram



Overview

• Interface Type
- I^2C-Bus Interface. (Hi-speed bus specifications 400 kHz)
  * I^2C-Bus slave address : read A3h and write A2h

• Low Timekeeper voltage range
- 1.0 V to 5.5 V / Ta = -20 °C to +70 °C
- 1.1 V to 5.5 V / Ta = -40 °C to +85 °C

• 32.768 kHz frequency output function
- CLKOUT pin output (C-MOS output), CL=30 pF
- CLKOE pin enables output on/off control.
- Output selectable
  <32.768 kHz, 1024 Hz, 32 Hz, 1 Hz>

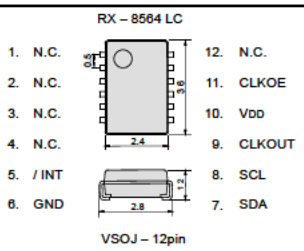
• The various interrupt function
- Timer function can be set up between 1/4096 second and 255 minutes.
- Alarm function can be set to any combination of day of week, hour, or minute.

Pin Function

Signal Name	Input/Output	Function
SCL	Input	Serial clock input pin.
SDA	Bi-directional	Data input and output pin.
CLKOUT	Output	32.768 kHz clock output pin with the output control function. (C-MOS) CLKOE pin control the condition of CLKOUT with FE-bit, etc.
CLKOE	Input	CLKOE pin input / FE bit / CLKOUT pin output: HIGH 1 Output (C-MOS); HIGH 0 OFF (LOW); LOW 1 OFF (LOW); LOW 0 OFF (LOW)
/INT	Output	Interrupt output (N-ch open drain)
VDD	—	Connected to a positive power supply.
GND	—	Connected to a ground.

Terminal connection / External dimensions

(Unit:mm)



***Stop using the glue**
Any glue must never use it after soldering LC-package to a circuit board.This product has glass on the back side of a package.When glue invasions between circuit board side and glass side, then glass cracks by thermal expansion of glue.In this case a crystal oscillation stops.Consider glue abolition or glue do not touch to LC-package

Specifications (characteristics)

* Refer to application manual for details.

■ Recommended Operating Conditions

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power voltage	VDD	—	1.8	3.0	5.5	V
Clock voltage	VCLK	—	VLOW	3.0	5.5	V
Operating temperature	TOPR	—	-40	+25	+85	°C

■ Low voltage detection

Item	Symbol		Conditions	Typ.	Max.	Unit
Low voltage detection	VLOW	LC	Ta = -20 C ~ +70 C	0.9	1.2	V
			Ta = -40 C ~ +85 C	0.9	1.3	V

■ Frequency characteristics

Item	Symbol	Conditions	Rating	Unit
Frequency tolerance	Δf / f	Ta = +25 °C, VDD = 3.0 V	B: 5 ± 23 *	× 10^{-6}

* Please ask for tighter tolerance. (Equivalent to ±1 minute of monthly deviation)

■ Current consumption characteristics

Ta = -40 °C to +85 °C

tem	Symbol	Conditions		Min.	Typ.	Max.	Unit
Current Consumtion	IBK	fSCL = 0 Hz, CLKOE = GND, CLKOUT ; output OFF (LOW)	VDD = 5 V	-	330	800	nA
			VDD = 3 V	-	275	700	
	I32k	fSCL = 0 Hz, CLKOE = VDD, CLKOUT ; 32.768 kHz output ON (Output=OPEN ; CL = 0 pF)	VDD = 5 V	-	2.5	3.4	µA
			VDD = 3 V	-	1.5	2.2	

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