

LOW BACKUP VOLTAGE SERIAL-INTERFACE REAL TIME CLOCK MODULE

RX - 4571 LC / NB / SA

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : 3-wire serial interface
- Operating voltage range : 1.6 V to 5.5 V
- Wide Timekeeper voltage range : 1.0 V to 5.5 V / $T_a = +25\text{ }^{\circ}\text{C}$
- Low backup current : $0.32\text{ }\mu\text{A}$ (Typ.) / 3 V
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- Real-time clock function
Clock/calendar function, auto leap year correction function, alarm interrupt function, etc.



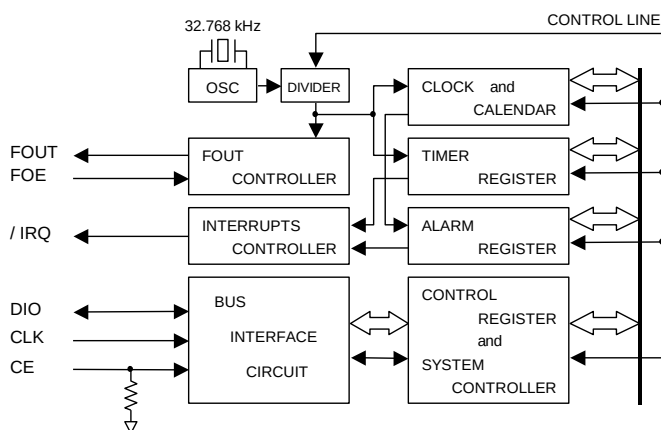
Product Number (Please contact us)
RX-4571LC : Q414571C2000100
RX-4571NB : Q41457192000100
RX-4571SA : Q41457152000100



Actual size



Block diagram



Overview

- **32.768 kHz frequency output function**
 - FOUT pin output (C-MOS output), $CL=30\text{ pF}$
- **Timer function**
 - Timer function which can be set up between 1/4096 second and 4095 minutes.
- **Alarm function**
 - Alarm function can be set to any combination of day, day of week, hour, or minute.

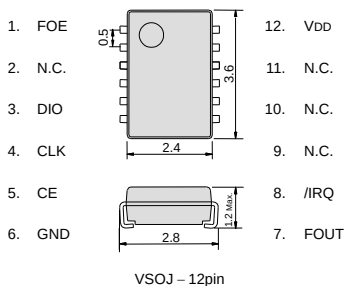
Pin Function

Signal Name	Input / Output	Function
CE	Input	The chip enabled input pin 0. (It has a built-in pull-down resistance)
CLK	Input	The shift clock input pin for serial data transfer.
DIO	Bi-directional	The data input / output pin for serial data transfer.
FOUT	Output	32.768 kHz clock output pin with the output control function. (C-MOS)
FOE	Input	FOE pin control the condition of FOUT with FSEL1-bit, FSEL0-bit, etc.
/IRQ	Output	Interrupt output (N-ch open drain)
VDD	—	Connected to a positive power supply.
GND	—	Connected to a ground.

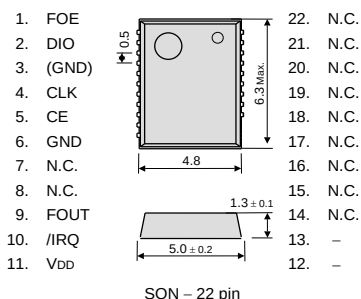
Terminal connection / External dimensions

(Unit:mm)

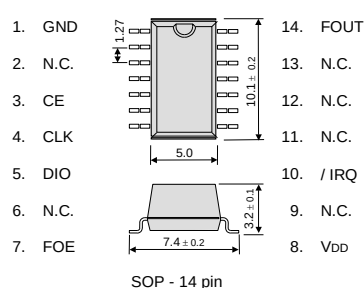
RX - 4571 LC



RX - 4571 NB



RX - 4571 SA



Metal may be exposed on the top or bottom of this product. This will not affect any quality, reliability or electrical spec.

Specifications (characteristics)

* Refer to application manual for details.

Recommended Operating Conditions

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power voltage	VDD	—	1.6	3.0	5.5	V
Clock voltage	VCLK	$T_a = +25\text{ }^{\circ}\text{C}$	1.0	3.0	5.5	V
		$T_a = -40\text{ to }+85\text{ }^{\circ}\text{C}$	1.1	3.0	5.5	V
Operating temperature	TOPR	—	-40	+25	+85	$^{\circ}\text{C}$

Frequency characteristics

Item	Symbol	Condition	Rating	Unit
Frequency tolerance	$\Delta f/f$	$T_a = +25\text{ }^{\circ}\text{C}$ $V_{DD} = 3.0\text{ V}$	$5 \pm 23\text{ }^{\circ}$	$\times 10^{-6}$
Oscillation start-up time	t_{STA}	$T_a = +25\text{ }^{\circ}\text{C}$ $V_{DD} = 1.6\text{ V}$	1 Max.	s

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

Current consumption characteristics

$T_a = -40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$

Symbol	Condition	Min.	Typ.	Max.	Unit
I _{BK}	CE = GND /IRQ = OFF	VDD = 5 V	0.40	1.00	μA
	FOUT ; output OFF (Hi - z)	VDD = 3 V	0.32	0.95	
I _{32k}	CE = GND /IRQ = OFF	VDD = 5 V	8.0	14.0	μA
	FOUT ; 32.768 kHz output ON CL = 30 pF	VDD = 3 V	5.0	8.5	