REAL TIME CLOCK MODULE (SPI-Bus)
LOW BACKUP VOLTAGE

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
- The wide voltage for time keeping. : 1.0 V to 5.5 V / Ta = +25 °C
- Low backup current : 0.32 µA (Typ.) / 3 V
- 32.768 kHz frequency output function : C-MOS output With OE pin.
- Real-time clock function
  Clock/calendar function, auto leap year correction function,
  Alarm and Timer interrupt function, etc.

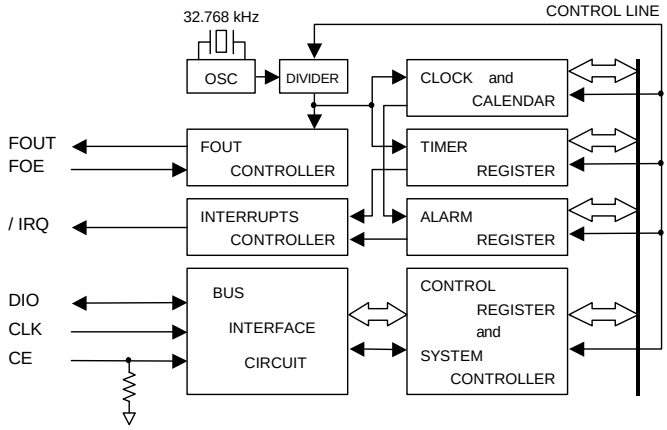
RoHS Compliant

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

Actual size

RX-4571LC	RX-4571NB	RX-4571SA
		

Block diagram



Overview

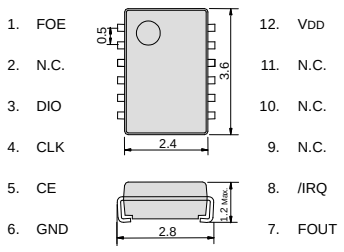
- **32.768 kHz frequency output function**
  - FOUT pin output (C-MOS output) , CL=30 pF
- **Timer function**
  - Timer function which can be set up between 1/4096 second and 4095 minutes.
- **Alarm function**
  - Alarm function can be set to any combination of day, day of week, hour, or minute.
- **Pin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

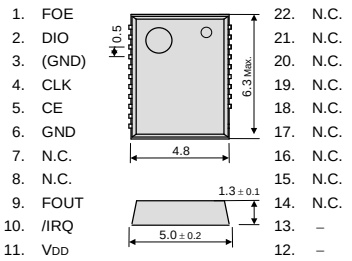
(Unit:mm)

RX – 4571 LC



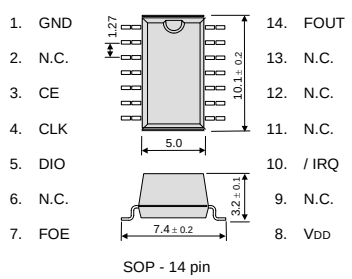
VSOJ – 12pin

RX – 4571 NB



SON – 22 pin

RX – 4571 SA



SOP - 14 pin

The metal case inside of the molding compound may be exposed on the top or bottom of this product. This purely cosmetic and does not have any effect on quality, reliability or electrical specs.

***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	–	1.6	3.0	5.5	V
Clock voltage	VCLK	Ta = +25 °C	1.0	3.0	5.5	V
		Ta = -40 to +85 °C	1.1	3.0	5.5	V
Operating temperature	TOPR	–	-40	+25	+85	°C

■ Frequency characteristics

Item	Symbol	Conditions	Rating	Unit
Frequency tolerance	Δ f / f	Ta = +25 °C VDD = 3.0 V	B: 5 ± 23 *	× 10 $^{-6}$
Oscillation start-up time	tSTA	Ta = +25 °C VDD = 1.6 V	1 Max.	s

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

■ Current consumption characteristics

Ta = -40 °C to +85 °C

Symbol	Conditions		Min.	Typ.	Max.	Unit
IBK	CE = GND /IRQ = OFF FOUT ; output OFF (Hi - z)	VDD = 5 V	-	0.40	1.00	µA
		VDD = 3 V	-	0.32	0.95	
I32k	CE = GND /IRQ = OFF FOUT ; 32.768 kHz output ON CL = 30 pF	VDD = 5 V	-	8.0	14.0	µA
		VDD = 3 V	-	5.0	8.5	

PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

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For Automotive	►Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
Automotive Safety	►Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).

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