

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



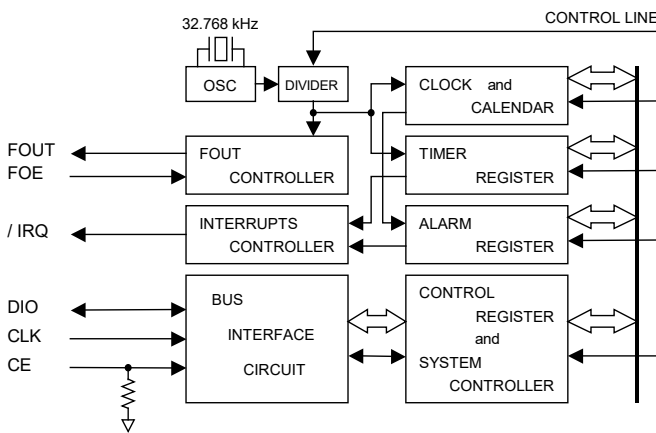
Product Number
RX-4571LC : Q414571C2000100
RX-4571SA : Q41457152000100

RX-4571LC / 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 / T_a = +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.



Block diagram



Overview

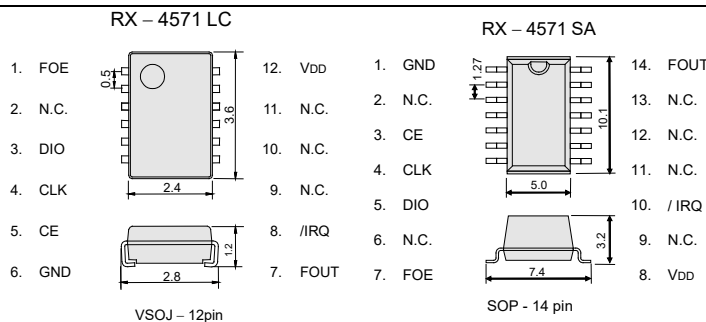
- **32.768 kHz frequency output function**
 - FOUT pin output (C-MOS output), CL=30 pF
- **Timer function**
 - Timer function which can be set up between 1/4096 second and 4095 minutes.
- **Alarm function**
 - Alarm function can be set to any combination of day, day of week, hour, or minute.

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)



Prohibition of use of glue after a mount of a product
 An LC package product cannot use glue and resin coating.
 When such a processing is necessary, please examine a CE package product.

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.

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	T _a = +25 °C	1.0	3.0	5.5	V
		T _a = -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	Δf/f	T _a = +25 °C VDD = 3.0 V	B: 5 ± 23 *	× 10 ⁻⁶
Oscillation start-up time	t _{STA}	T _a = +25 °C VDD = 1.6 V	1 Max.	s

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

Current consumption characteristics

T_a = -40 °C to +85 °C

Symbol	Conditions	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	

► Explanation of the mark that are using it for the catalog

	<p>► Pb free.</p>
	<p>► Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)</p>
	<p>► Designed for automotive general equipment.</p>
	<p>► Designed for automotive applications related to driving and safety.</p>

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