REAL TIME CLOCK MODULE (SPI-Bus)

Built-in external event detection.

RX-4575LC

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : 3-wire serial interface
- Operating voltage range : 1.6 V ~ 5.5 V
- Wide timekeeper voltage range : 1.3 V ~ 5.5 V
- Low backup current : 0.35 µA / 3 V (Typ.)
- External event detection. : Chattering free input port ×2.

(The various functions include full calendar, alarm, timer.)

RoHS Compliant

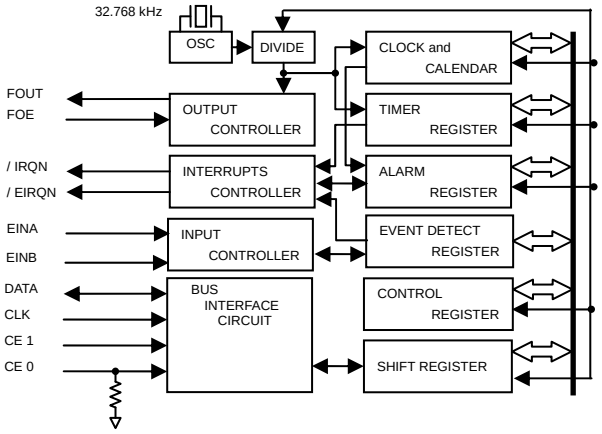
Product Number (Please contact us)
RX-4575LC : Q414575C2000100



Actual size



Block diagram



Overview

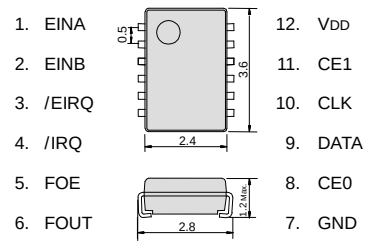
- **Event detection.**
  - Selectable Hi detection or Lo detection.
  - Recognition of detection is available both the hardware interrupt and the monitor via software.
  - Automatic interrupt release mode is available.
  - The all 'OR' interrupt output is possible via alarm, timer and event detection.
- **Performance of event input terminal.**
  - As for the chattering filter, following are prepared for. (8 ms, 31 ms, 62 ms, 125 ms)
  - Built-in resistor connect and release is possible via software. Selectable pull-up or pull-down.
- **Timer function**
  - Built in 12 bit counter.
  - Timing period are 1 min, 1 s, 64 Hz, 4096 Hz.
- **Alarm function**
  - Alarm setting is possible by combination of a day, hours, and minutes.

Pin Function

Signal Name	Input / Output	Functions
EINA EINB	Input	External event input pin.
CE 0 CE 1	Input	Interface is possible when both CE0 and CE1 is high level.
CLK	Input	Serial Clock input pin.
DATA	Bidirectional	Data input and output pin.
FOUT	Output	32.768 kHz clock output pin (C-MOS) . Output is Hi-Z when OFF.
FOE	Input	32kHz is output when input is Hi, 32 kHz is OFF when input is Lo.
/ EIRQ	Output	Interrupt output pin. (N-ch open drain)
/ IRQ	Output	Interrupt output pin. (N-ch open drain)
VDD	—	Connected to a positive power supply.
GND	—	Connected to a ground.

Terminal connection / External dimensions (Unit:mm)

RX – 4575 LC



VSOJ – 12pin

***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

■ **Recommended** Operating conditions

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power voltage	VDD	–	1.6	3.0	5.5	V
Clock voltage	VCLK	–	1.3	3.0	5.5	V
Operating Temperature	TOPR	–	-40	+25	+85	°C

■ Frequency characteristics

Item	Symbol	Conditions	Rating	Unit
Frequency tolerance	Δf/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
		Ta = -40 °C ~ +85 °C VDD = 1.6 V	3 Max.	s

*Equivalent to 1 minute of monthly deviation

■ Current consumption characteristics

Ta = -40 °C ~ +85 °C

Item	Symbol	Conditions		Min.	Typ.	Max.	Unit
Current Consumption	IBK	CE0, CE1 = GND / IRQ, / EIRQ= OFF FOUT : output OFF Event detection OFF	VDD = 5 V	-	0.45	0.9	µA
			VDD = 3 V	-	0.35	0.7	
	I32k	CE0, CE1 = GND / IRQ, / EIRQ= OFF FOUT ; CL = 30 pF 32.768 kHz output ON	VDD = 5 V	-	8.0	20.0	µA
			VDD = 3 V	-	5.0	12.0	

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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.
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