

**Built-in external event detection.**  
**SERIAL INTERFACE REAL TIME CLOCK MODULE**



**RX-4575 LC**

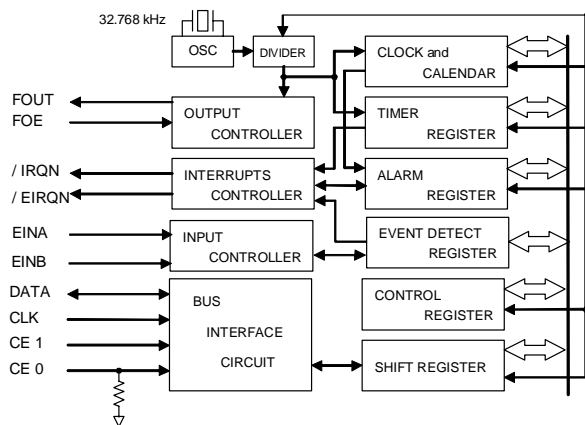
- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : Serial interface in 3 lines form.
- Operating voltage range : 1.6 V ~ 5.5 V
- Wide timekeeper voltage range : 1.3 V ~ 5.5 V
- Low backup current : 0.35  $\mu$ A / 3 V ( Typ. )
- External event detection. : Chattering free input port \* 2.  
 (The various functions include full calendar, alarm, timer.)



Actual size



**Block diagram**



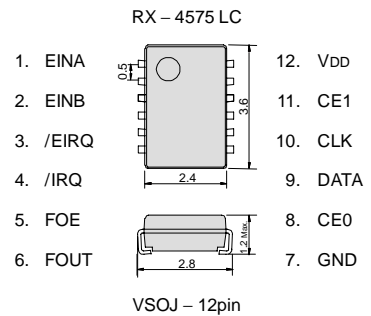
**Overview**

- **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. ( 8ms, 31ms, 62ms, 125ms )
  - 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 sec, 64Hz, 4096Hz.
- **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, 32kHz 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)**



**Specifications (characteristics)**

\* Refer to application

■ Recommended Operating conditions

Item	Symbol	Condition	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	Condition	Rating	Unit
Frequency tolerance	$\Delta f / f$	Ta = +25 °C VDD = 3.0 V	5 ± 23 *	$\times 10^{-6}$
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

■ DC characteristics

Ta = -40 °C ~ +85 °C

Item	Symbol	Condition	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	$\mu$ A
		VDD = 3 V	0.35	0.7		
Current Consumption	I32k	CE0, CE1 = GND / IRQ, / EIRQ = OFF FOUT ; CL = 30 pF 32.768 kHz output ON	VDD = 5 V	8.0	20.0	$\mu$ A
		VDD = 3 V	5.0	12.0		

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