

REAL TIME CLOCK MODULE (I²C-Bus)

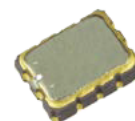
Built-in 32.768 kHz DTCXO, High Stability



Product Number (2,000 pcs / Reel)
 RX8804CE XA: X1B000371000100
 RX8804CE XB: X1B000371000200

RX8804CE

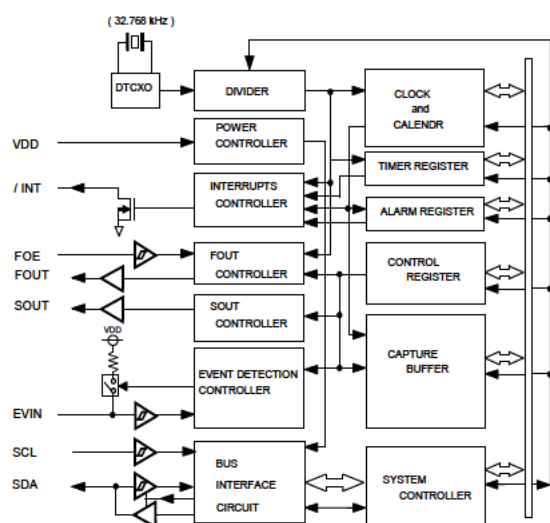
- Built-in frequency adjusted 32.768 kHz crystal unit and DTCXO
- Interface Type : I²C-Bus
- Selectable clock output : 32.768 kHz, 1024 Hz, 1 Hz
- Time stamp function : 1 time stamped from year to second
- Interrupt output : Wake up every minute or every second
- Alarm interruption : Day, date, hour, minute
- Auto repeat wakeup timer interruption
- Self-monitoring interruption : Crystal oscillation stop, V_{BAT} low, V_{DD} low
- SOUT pin outputs that selected flag bit value



RX8804CE
 (3.2 × 2.5 mm, t = 1.0 mm Max.)

The I²C-Bus is a trademark of NXP Semiconductors

Block diagram



Overview

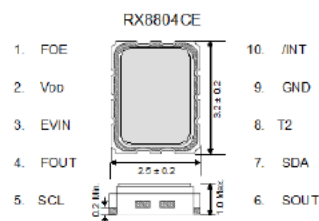
- Interface type
I²C-Bus interface Fast-Mode 400 kHz
- High stability
XA: $\pm 3.4 \times 10^{-6}$ / -40 °C to +85 °C (equivalent to ± 9 s of mo. deviation)
 $\pm 8.0 \times 10^{-6}$ / +85 °C to +105 °C (equivalent to ± 21 s of mo. deviation)
 XB: $\pm 5.0 \times 10^{-6}$ / -40 °C to +85 °C (equivalent to ± 13 s of mo. deviation)
 $\pm 8.0 \times 10^{-6}$ / +85 °C to +105 °C (equivalent to ± 21 s of mo. deviation)
- Clock output function
Output frequency is selectable from 32.768 kHz, 1024 Hz, 1 Hz
- Wakeup timer function
Selectable from 244 μ s to 32 years (24 bit x 1 ch.)
 Timer source clock selectable from 1/60 Hz, 1 Hz, 64 Hz, 4096 Hz
 Auto release after interrupt output from /INT pin at timer completes
 This operation is auto repeat with a selected cycle, it can be used like a watchdog timer
- Time stamp function
1 time stamped from year to second
 The time stamp trigger inputs from EVIN pin, self-monitoring and I²C software command
 EVIN pin has function of chattering-cancel
- Alarm function
It is possible program from day to minute
- Internal state output function
SOUT pin outputs selected flag-bit value or specified value (H or L)

Pin Function

Signal Name	I / O	Function
SOUT	Output	Internal state output pin
SCL	Input	Serial clock input pin
FOUT	Output	Frequency output pin (CMOS) (frequency selection: 32.768 kHz, 1024 Hz, 1 Hz)
EVIN	Input	Event input pin
V _{DD}	-	Power-supply pin
FOE	Input	The FOUT output control pin
/INT	Output	Interrupts output by Alarm and Timer events (N-ch. open drain)
GND	-	Ground pin
T2	-	Test pin in the factory (Do not connect externally)
SDA	Input / Output	Serial data input and output pin.

Terminal connection / External dimensions

(Unit: mm)



Specifications (characteristics)

* Refer to application manual for details

Electrical Characteristics

Electrical Characteristics								
tem	Symbol	Conditions		Min.	Typ.	Max.	Unit	
Operating voltage	V _{DD}	-		1.6	3.0	5.5	V	
Temp. compensated Voltage	V _{TEM}	-		1.5	3.0	5.5	V	
Clock supply voltage	V _{CLK}	-		1.5	3.0	5.5	V	
Operating temperature	T _a	-		-40	+25	+105	°C	
Stability	Δ f / f	XA	T _a = -40 °C to +85 °C	±3.4			x 10 ⁻⁶	
			T _a = +85 °C to +105 °C	±8.0				
		XB	T _a = -40 °C to +85 °C	±5.0				
			T _a = +85 °C to +105 °C	±8.0				
Current consumption (1)	I _{DD1}	fSCL = 0 Hz, / NT = V _{DD} , FOE = GND, FOUT: OFF, Temp. Compensation interval 2.0 s		V _{DD} = 5 V	-	0.4	1.6	μA
Current consumption (2)	I _{DD2}			V _{DD} = 3 V	-	0.35	1.5	

32.768 kHz DTCXO Frequency temperature characteristics (Example)

