

**Built-in EEPROM and Unique ID-ROM  
I<sup>2</sup>C-Bus INTERFACE REAL TIME CLOCK MODULE**

**RX - 8731 LC**

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : I<sup>2</sup>C-Bus interface (400 kHz)
- Operating voltage range : 1.7 V to 5.5 V
- Wide Timekeeper voltage range : 1.3 V to 5.5 V
- Low backup current : 0.35  $\mu$ A / 3 V (Typ.)
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- The various functions include full calendar, alarm, timer.

\* The I<sup>2</sup>C-Bus is a trademark of NXP Semiconductors



Product Number (Please contact us)  
RX-8731LC : Q418731C2000100

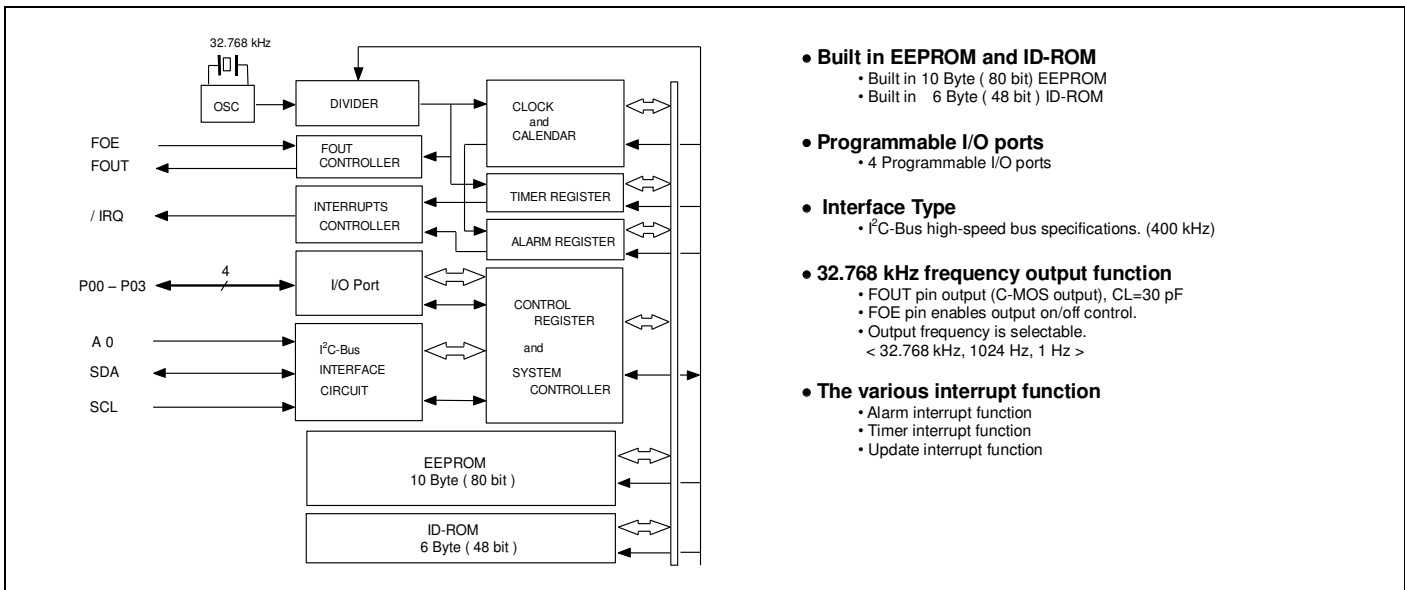


Actual size



**Block diagram**

**Overview**

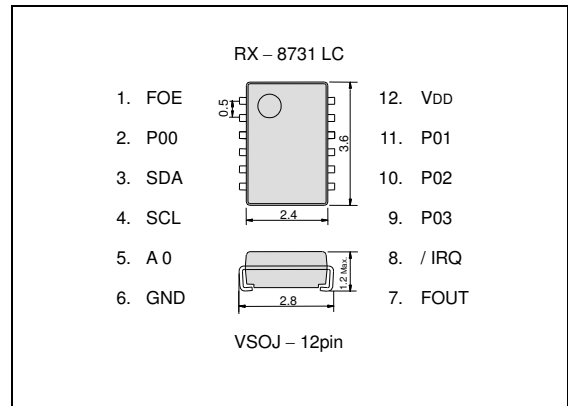


- **Built in EEPROM and ID-ROM**
  - Built in 10 Byte ( 80 bit) EEPROM
  - Built in 6 Byte ( 48 bit) ID-ROM
- **Programmable I/O ports**
  - 4 Programmable I/O ports
- **Interface Type**
  - I<sup>2</sup>C-Bus high-speed bus specifications. (400 kHz)
- **32.768 kHz frequency output function**
  - FOUT pin output (C-MOS output), CL=30 pF
  - FOE pin enables output on/off control.
  - Output frequency is selectable.  
< 32.768 kHz, 1024 Hz, 1 Hz >
- **The various interrupt function**
  - Alarm interrupt function
  - Timer interrupt function
  - Update interrupt function

**Pin Function**

**Terminal connection / External dimensions (Unit:mm)**

Signal Name	Input / Output	Function
SCL	Input	Serial Clock input pin.
SDA	Bi-directional	Data input and output pin.
A 0	Input	Device address A0 input pin.
FOUT	Output	FOUT pin is 32.768 kHz clock output pin ( C-MOS ) that output control is possible.
FOE	Input	FOE pin control the frequency output from FOUT pin with FSEL1-bit and FSEL0-bit.
/ IRQ	Output	Interrupt output pin. ( N-ch open drain )
P00 P01 P02 P03	Bi-directional	Programmable I/O ports.
VDD	—	Connected to a positive power supply.
GND	—	Connected to a ground.



**Specifications (characteristics)**

\* Refer to application manual for details.

■ Recommended Operating Conditions

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power voltage	VDD	—	1.7	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	$\Delta f / f$	T <sub>a</sub> = +25 °C VDD = 3.0 V	5 ± 23 *	× 10 <sup>-6</sup>
Oscillation Start-up time	t <sub>STA</sub>	T <sub>a</sub> = +25 °C VDD = 1.6 V	1 Max.	s
		T <sub>a</sub> = -40 °C to +85 °C VDD = 1.6 V	3 Max.	s

\*Equivalent to 1 minute of monthly deviation

■ Current consumption characteristics

T<sub>a</sub> = -40 °C to +85 °C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Current Consumption	I <sub>BK</sub>	fSCL = 0 Hz / IRQ = OFF	VDD = 5 V	0.45	1.5	$\mu$ A
		FOUT : output OFF ( Hi - z )	VDD = 3 V	0.35	1.4	
	I <sub>BZK</sub>	fSCL = 0 Hz / IRQ = OFF FOUT : 32.768 kHz output CL = 30 pF	VDD = 5 V	8.0	16.0	$\mu$ A
			VDD = 3 V	5.0	10.0	