

# RX-8564LC:B3 PURE SN Datasheet



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DiGi Electronics Part Number	RX-8564LC:B3 PURE SN-DG
Manufacturer	<a href="#">EPSON</a>
Manufacturer Product Number	RX-8564LC:B3 PURE SN
Description	IC RTC CLK/CALENDAR I2C 12VSOJ
Detailed Description	Real Time Clock (RTC) IC Clock/Calendar I2C, 2-Wire Serial 12-TFSOJ (0.094", 2.40mm Width)

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## Purchase and inquiry

**Manufacturer Product Number:**

RX-8564LC:B3 PURE SN

**Series:**

RX-8564LC

**DiGi-Electronics Programmable:**

Not Verified

**Features:**

Alarm, Leap Year

**Time Format:**

HH:MM:SS (24 hr)

**Interface:**

I2C, 2-Wire Serial

**Voltage - Supply, Battery:**

-

**Operating Temperature:**

-40°C ~ 85°C

**Package / Case:**

12-TFSOJ (0.094", 2.40mm Width)

**Manufacturer:**

EPSON

**Product Status:**

Active

**Type:**

Clock/Calendar

**Memory Size:**

-

**Date Format:**

YY-MM-DD-dd

**Voltage - Supply:**

1.8V ~ 5.5V

**Current - Timekeeping (Max):**

0.65µA ~ 0.8µA @ 2V ~ 5V

**Mounting Type:**

Surface Mount

**Supplier Device Package:**

12-VSOJ

## Environmental & Export classification

**RoHS Status:**

ROHS3 Compliant

**REACH Status:**

REACH Affected

**HTSUS:**

8542.39.0001

**Moisture Sensitivity Level (MSL):**

1 (Unlimited)

**ECCN:**

EAR99



# REAL TIME CLOCK MODULE (I<sup>2</sup>C-Bus)

Low current consumption



Product Number  
**RX-8564LC : Q418564C2000100**

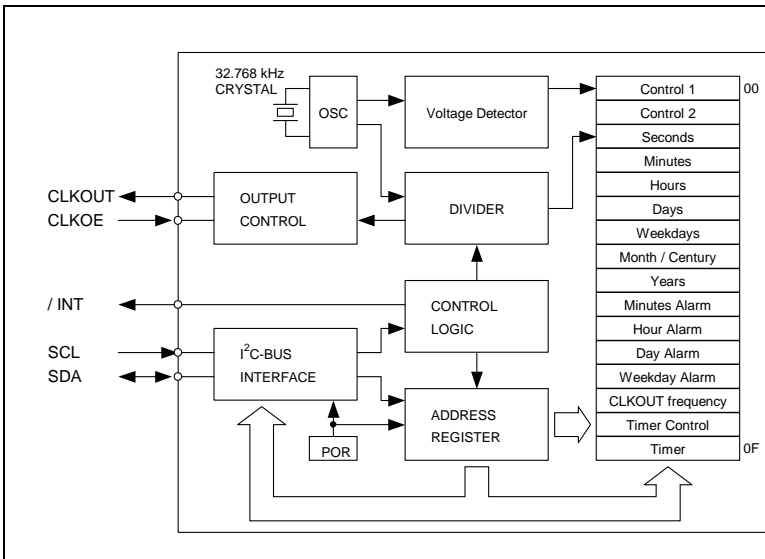
# RX-8564LC

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : I<sup>2</sup>C-Bus Interface (400 kHz)
- Operating voltage range : 1.8V to 5.5 V
- Timekeeper voltage range : 1.0V to 5.5 V / -20 °C to +70 °C
- Low backup current : 275nA / 3.0 V(Typ.)
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- The various functions include full calendar, alarm, timer, and power supply voltage monitoring function



## Block diagram

## Overview



### Interface Type

- I<sup>2</sup>C-Bus Interface. ( Hi-speed bus specifications 400 kHz )
- \* I<sup>2</sup>C-Bus slave address : read A3h and write A2h

### Low Timekeeper voltage range

- 1.0 V to 5.5 V / Ta = -20 °C to +70 °C
- 1.1 V to 5.5 V / Ta = -40 °C to +85 °C

### 32.768 kHz frequency output function

- CLKOUT pin output (C-MOS output), CL=30 pF
- CLKOE pin enables output on/off control.
- Output selectable
- <32.768 kHz, 1024 Hz, 32 Hz, 1 Hz>

### The various interrupt function

- Timer function can be set up between 1/4096 second and 255 minutes.
- Alarm function can be set to any combination of day of week, hour, or minute.

## 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.															
CLKOUT	Output	32.768 kHz clock output pin with the output control function. (C-MOS) CLKOE pin control the condition of CLKOUT with FE-bit, etc.															
CLKOE	Input	<table border="1"> <thead> <tr> <th>CLKOE pin input</th> <th>FE bit</th> <th>CLKOUT pin output</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td>1</td> <td>Output (C-MOS)</td> </tr> <tr> <td>HIGH</td> <td>0</td> <td>OFF (LOW)</td> </tr> <tr> <td>LOW</td> <td>1</td> <td>OFF (LOW)</td> </tr> <tr> <td>LOW</td> <td>0</td> <td>OFF (LOW)</td> </tr> </tbody> </table>	CLKOE pin input	FE bit	CLKOUT pin output	HIGH	1	Output (C-MOS)	HIGH	0	OFF (LOW)	LOW	1	OFF (LOW)	LOW	0	OFF (LOW)
		CLKOE pin input	FE bit	CLKOUT pin output													
		HIGH	1	Output (C-MOS)													
		HIGH	0	OFF (LOW)													
LOW	1	OFF (LOW)															
LOW	0	OFF (LOW)															
/INT	Output	Interrupt output (N-ch open drain)															
V <sub>DD</sub>	—	Connected to a positive power supply.															
GND	—	Connected to a ground.															

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

## Specifications (characteristics)

\* Refer to application manual for details.

### Recommended Operating Conditions

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power voltage	V <sub>DD</sub>	—	1.8	3.0	5.5	V
Clock voltage	V <sub>CLK</sub>	—	V <sub>LOW</sub>	3.0	5.5	V
Operating temperature	T <sub>OPR</sub>	—	-40	+25	+85	°C

### Low voltage detection

Item	Symbol	Conditions	Typ.	Max.	Unit	
Low voltage detection	V <sub>LOW</sub>	LC	Ta = -20 °C ~ +70 °C	0.9	1.2	V
			Ta = -40 °C ~ +85 °C	0.9	1.3	V

### Frequency characteristics

Item	Symbol	Conditions	Rating	Unit
Frequency tolerance	Δf/f	Ta = +25 °C V <sub>DD</sub> = 3.0 V	B: 5 ± 23 *	× 10 <sup>-6</sup>

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

### Current consumption characteristics

Ta = -40 °C to +85 °C

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Current Consumption	I <sub>BK</sub>	f <sub>SCL</sub> = 0 Hz CLKOE = GND	V <sub>DD</sub> = 5 V	-	330	800	nA
		CLKOUT ; output OFF (LOW)	V <sub>DD</sub> = 3 V	-	275	700	
	I <sub>I2Ck</sub>	f <sub>SCL</sub> = 0 Hz CLKOE = V <sub>DD</sub> CLKOUT ; 32.768 kHz output ON (Output=OPEN ; CL = 0 pF)	V <sub>DD</sub> = 5 V	-	2.5	3.4	μA
		V <sub>DD</sub> = 3 V	-	1.5	2.2		

## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

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

	► Pb free.
	► 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.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc ).

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