

REAL TIME CLOCK MODULE (SPI-Bus)

RTC - 4574 SA/ JE/ NB

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : 3-wire serial interface
- Operating voltage range : 1.6 V to 5.5 V
- Wide Timekeeper voltage range : 1.6 V to 5.5 V
- Low backup current : 0.5  $\mu$ A / 3 V ( Typ. )
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- The various functions include full calendar, alarm, timer.



Product Number (Please contact us)  
 RTC-4574SA : Q41457452000200  
 RTC-4574JE : Q41457471000100  
 RTC-4574NB : Q4145749x000100



Actual size

RTC-4574SA



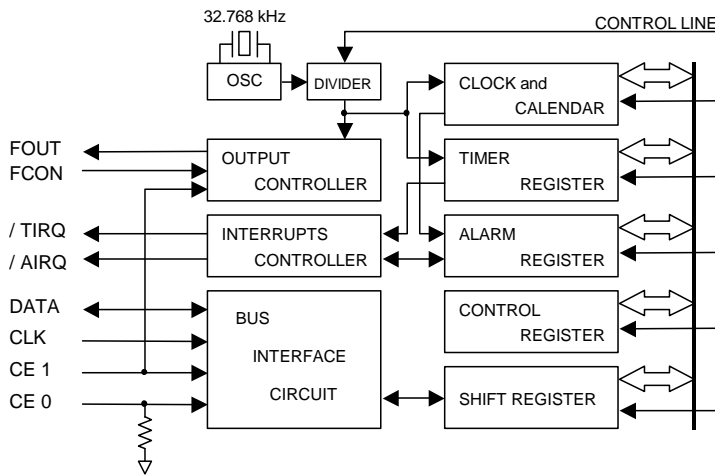
RTC-4574JE



RTC-4574NB



Block diagram



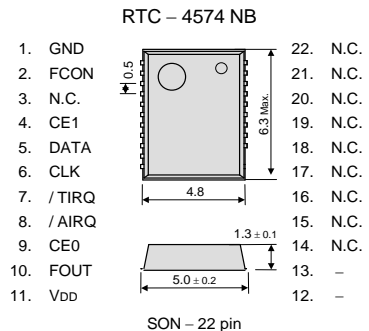
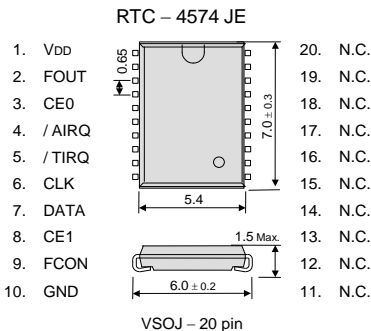
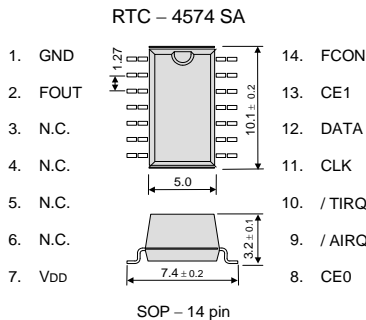
Overview

- **32.768 kHz frequency output function**
  - FOUT pin output (C-MOS output), CL=30 pF
  - Output frequency selectable from 1/30 Hz to 32.768 kHz (32 Values)
- **Timer function**
  - Timer function can be set up between 1/4096 second and 255 minutes.
  - It is recorded automatically to TF-bit at the time of event occurrence, and it's possible to output with /TIRQ pin output (open-drain output).
  - Selectable one time mode or repeat mode.
- **Alarm function**
  - Alarm function can be set to any combination of day of week, hour, or minute.
  - It is recorded automatically to AF-bit at the time of event occurrence, and it's possible to output with /AIRQ pin output (open-drain output).

• Functions are compatible with RX - 4574 LC.

Terminal connection / External dimensions

(Unit:mm)



The metal case inside of the molding compound may be exposed on the top or bottom of this product. This purely cosmetic and does not have any effect on quality, reliability or electrical specs.

Specifications (characteristics)

\* Refer to application manual for details.

Recommended Operating Conditions

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power voltage	V <sub>DD</sub>	—	1.6	3.0	5.5	V
Clock voltage	V <sub>CLK</sub>	—	1.6	3.0	5.5	V
Operating temperature	T <sub>OPR</sub>	—	-40	+25	+85	°C

Frequency characteristics

Item	Symbol	Conditions	Rating	Unit
Frequency tolerance	$\Delta f / f$	T <sub>a</sub> = +25 °C V <sub>DD</sub> = 3.0 V	B: 5 ± 23 *	× 10 <sup>-6</sup>
Oscillation start-up time	t <sub>STA</sub>	T <sub>a</sub> = +25 °C V <sub>DD</sub> = 1.6 V	3 Max.	s

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

Current consumption characteristics

T<sub>a</sub> = -40 °C to +85 °C

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Current Consumption	I <sub>BK</sub>	CE <sub>0</sub> , CE <sub>1</sub> = GND FOUT ; output OFF (Hi - z)	V <sub>DD</sub> = 5 V	-	1.0	2.0	$\mu$ A
			V <sub>DD</sub> = 3 V	-	0.5	1.0	
	I <sub>32k</sub>	CE <sub>0</sub> = GND CE <sub>1</sub> = V <sub>DD</sub> FOUT ; 32.768 kHz output ON CL = 30 pF	V <sub>DD</sub> = 5 V	-	8.0	20.0	$\mu$ A
			V <sub>DD</sub> = 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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	► 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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