Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

REAL TIME CLOCK MODULE (SPI-Bus)

RTC - 4574 SA / JE / NB

RoHS Compliant

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

- 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 µA / 3 V (Typ.)
- 32.768 kHz frequency output function : C-MOS output With Control Pin
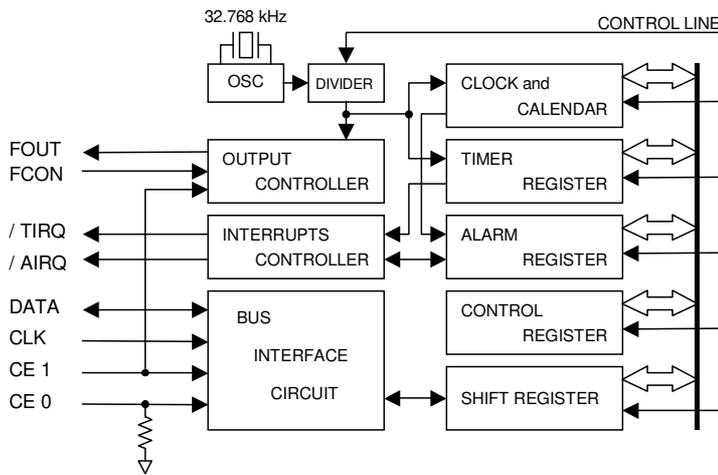- The various functions include full calendar, alarm, timer.

Actual size

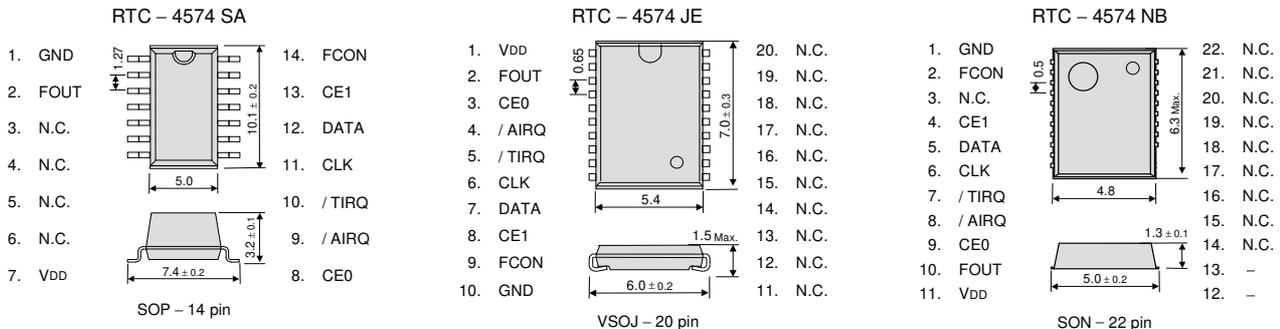| RTC-4574SA	RTC-4574JE	RTC-4574NB

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)

RTC – 4574 SA

1.	GND	14.	FCON
2.	FOUT	13.	CE1
3.	N.C.	12.	DATA
4.	N.C.	11.	CLK
5.	N.C.	10.	/ TIRQ
6.	N.C.	9.	/ AIRQ
7.	VDD	8.	CE0

SOP – 14 pin

RTC – 4574 JE

1.	VDD	20.	N.C.
2.	FOUT	19.	N.C.
3.	CE0	18.	N.C.
4.	/ AIRQ	17.	N.C.
5.	/ TIRQ	16.	N.C.
6.	CLK	15.	N.C.
7.	DATA	14.	N.C.
8.	CE1	13.	N.C.
9.	FCON	12.	N.C.
10.	GND	11.	N.C.

VSOJ – 20 pin

RTC – 4574 NB

1.	GND	22.	N.C.
2.	FCON	21.	N.C.
3.	N.C.	20.	N.C.
4.	CE1	19.	N.C.
5.	DATA	18.	N.C.
6.	CLK	17.	N.C.
7.	/ TIRQ	16.	N.C.
8.	/ AIRQ	15.	N.C.
9.	CE0	14.	N.C.
10.	FOUT	13.	–
11.	VDD	12.	–

SON – 22 pin

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_DD	—	1.6	3.0	5.5	V
Clock voltage	V_CLK	—	1.6	3.0	5.5	V
Operating temperature	T_OPR	—	-40	+25	+85	℃

Frequency characteristics

Item	Symbol	Conditions	Rating	Unit
Frequency tolerance	Δf/f	Ta = +25 ℃ V_DD = 3.0 V	B: 5 ± 23 ∗	× 10^{-6}
Oscillation start-up time	t_STA	Ta = +25 ℃ V_DD = 1.6 V	3 Max.	s

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

Current consumption characteristics

Ta = -40 ℃ to +85 ℃

Item	Symbol	Conditions		Min.	Typ.	Max.	Unit
Current Consumption	I_BK	CE0, CE1 = GND FOUT ;output OFF (Hi - z)	V_DD = 5 V	-	1.0	2.0	µA
			V_DD = 3 V	-	0.5	1.0	
	I_32k	CE0 = GND CE1 = V_DD FOUT ; 32.768 kHzoutput ON CL = 30 pF	V_DD = 5 V	-	8.0	20.0	µA
			V_DD = 3 V	-	5.0	12.0	

PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

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.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

> ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

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

Pb Free	► Pb free.

RoHS Compliant	► 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.)

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

Notice