

SERIAL-INTERFACE REAL TIME CLOCK MODULE

RTC - 4574 SA / JE / NB

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface Type : Serial interface in 3 lines form.
- 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 μ A / 3 V (Typ.)
- 32.768 kHz frequency output function : C-MOS output With Control Pin
- The various functions include full calendar, alarm, timer.
- Lead(Pb)-free : Contains high melting temperature type solder (Pb85 %) exempted by RoHS directive.



Actual size

RTC-4574SA



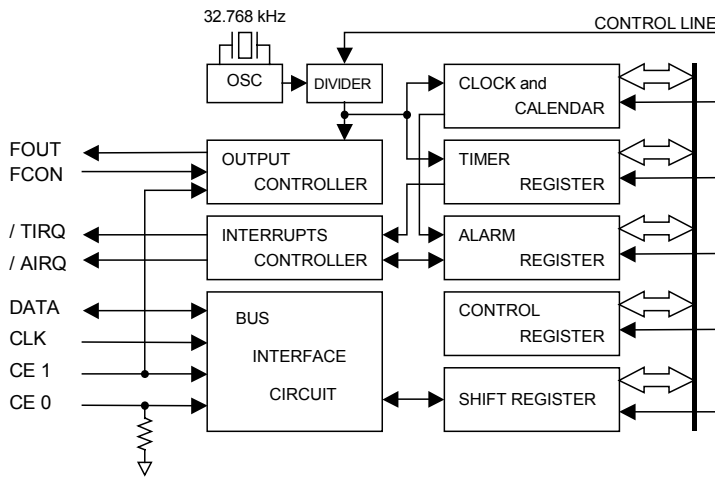
RTC-4574JE



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 automatic to TF-bit at the time of event occurrence, and 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 automatic to AF-bit at the time of event occurrence, and 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		RTC - 4574 JE		RTC - 4574 NB	
1. GND	14. FCON	1. VDD	20. N.C.	1. GND	22. N.C.
2. FOUT	13. CE1	2. FOUT	19. N.C.	2. FCON	21. N.C.
3. N.C.	12. DATA	3. CE0	18. N.C.	3. N.C.	20. N.C.
4. N.C.	11. CLK	4. /AIRQ	17. N.C.	4. CE1	19. N.C.
5. N.C.	10. /TIRQ	5. /TIRQ	16. N.C.	5. DATA	18. N.C.
6. N.C.	9. /AIRQ	6. CLK	15. N.C.	6. CLK	17. N.C.
7. VDD	8. CE0	7. DATA	14. N.C.	7. /TIRQ	16. N.C.
		8. CE1	13. N.C.	8. /AIRQ	15. N.C.
		9. FCON	12. N.C.	9. CE0	14. N.C.
		10. GND	11. N.C.	10. FOUT	13. -
				11. VDD	12. -

Metal may be exposed on the top or bottom of this product. This will not affect any quality, reliability or electrical spec.

Specifications (characteristics)

* Refer to application manual for details.

Recommended Operating Conditions

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power voltage	VDD	—	1.6	3.0	5.5	V
Clock voltage	VCLK	—	1.6	3.0	5.5	V
Operating temperature	TOPR	—	-40	+25	+85	°C

Frequency characteristics

Item	Symbol	Condition	Rating	Unit
Frequency tolerance	$\Delta f/f$	Ta = +25 °C VDD = 3.0 V	5 ± 23 *	× 10 ⁻⁶
Oscillation start-up time	tSTA	Ta = +25 °C VDD = 1.6 V	3 Max.	s

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

DC characteristics

Ta = -40 °C to +85 °C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Current Consumption	I _{BK}	CE0, CE1 = GND FOUT ; output OFF (Hi - z)	VDD = 5 V	1.0	2.0	μ A
			VDD = 3 V	0.5	1.0	
Current Consumption	I _{32k}	CE0 = GND CE1 = VDD FOUT ; 32.768 kHz output ON CL = 30 pF	VDD = 5 V	8.0	20.0	μ A
			VDD = 3 V	5.0	12.0	