

Simple Function

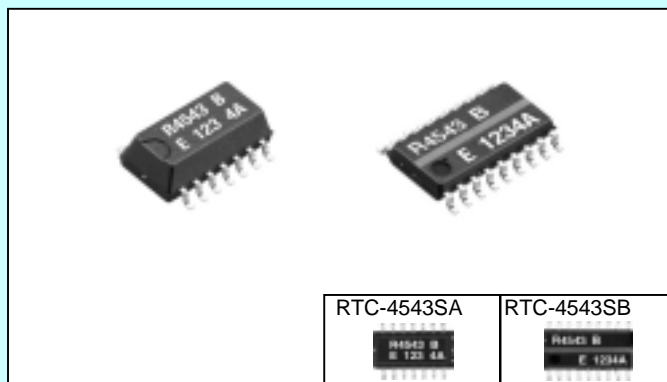
SERIAL-INTERFACE REAL TIME CLOCK MODULE

RTC - 4543 SA/SB

Product Number (please contact us)

- RTC - 4543 SA : Q41454351000200
- RTC - 4543 SB : Q41454361000200

- Built in frequency adjusted 32.768 kHz crystal unit.
- Interface type : Serial-interface
- Operating voltage range : 2.5 V to 5.5 V
- Wide Timekeeper voltage range : 1.4 V to 5.5 V
- 32.768kHz frequency output function : C-MOS output With Control Pin
- The various functions of full calendar, timer, and low voltage detection.
- Comply with EU RoHS directive

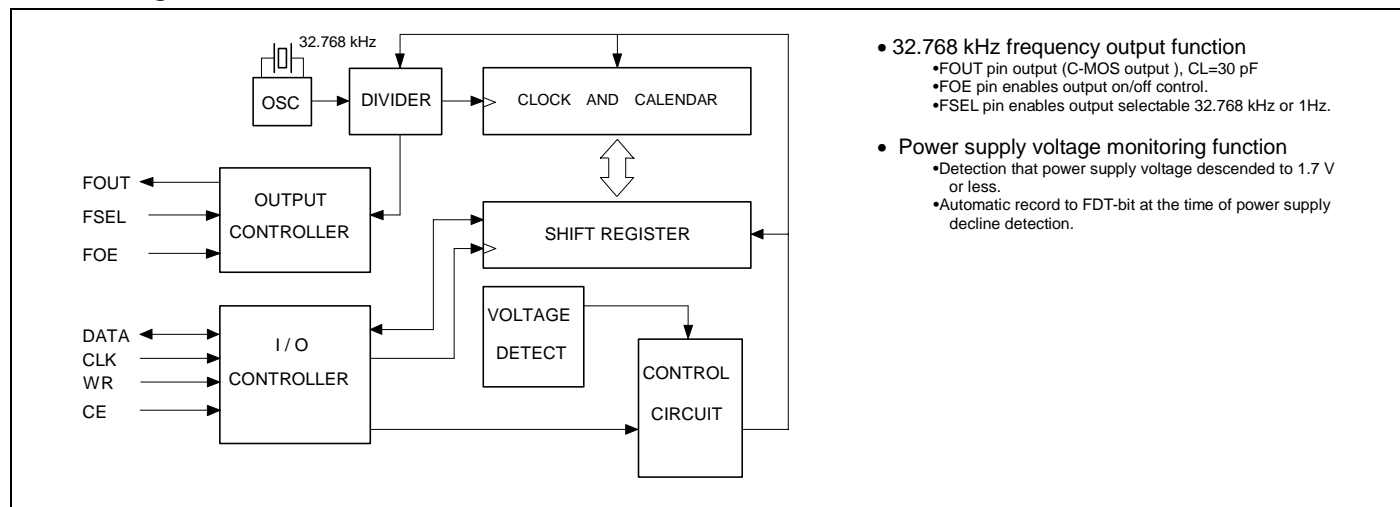


Actual size

\* The details are mentioned in the application manual.

<http://www.epsondevice.com>

Block diagram



Overview

- 32.768 kHz frequency output function
  - FOUT pin output (C-MOS output), CL=30 pF
  - FOE pin enables output on/off control.
  - FSEL pin enables output selectable 32.768 kHz or 1Hz.
- Power supply voltage monitoring function
  - Detection that power supply voltage descended to 1.7 V or less.
  - Automatic record to FDT-bit at the time of power supply decline detection.

Pin Function

Terminal connection / External dimensions

(Unit:mm)

Signal Name	Input / Output	Function
CE	Input	The chip enabled input pin. At the HIGH level, access becomes possible.
CLK	Input	The shift clock input pin for serial data transfer.
WR	Input	DATA pin input / output switching pin.
DATA	Bi-directional	The data input / output pin for serial data transfer.
FOUT	Output	32.768 kHz or 1Hz clock output pin (C-MOS output). High impedance at output off.
FOE	Input	The input pin for the FOUT output control.
FSEL	Input	Select the frequency that is output from the FOUT pin.
VDD	—	Connected to a positive power supply.
GND	—	Connected to a ground.

RTC - 4543 SA

SOP - 14 pin

RTC - 4543 SB

SOP - 18 pin

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

Specifications (characteristics)

**Recommended Operating Conditions**

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power voltage	VDD	—	2.5	5.0	5.5	V
Clock voltage	VCLK	—	1.4	5.0	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 = 5.0 V	5 ± 23*	× 10 <sup>-6</sup>
Oscillation start-up time	tSTA	Ta = +25 °C VDD = 2.5 V	3 Max.	s

\* Please ask tighter tolerance.(Equivalent to 1 minutes of monthly deviation )

**DC characteristics** Ta = -40 °C to +85 °C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Current Consumption	IBK	CE = GND FOE = GND FOUT ;output OFF (Hi-z)	VDD = 5 V	1.5	3.0	μA
			VDD = 3 V	1.0	2.0	
			VDD = 2 V	0.5	1.0	

**Supply Voltage Detection Characteristic** Ta = -40 °C to +85 °C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power supply detection voltage	VDT	VDD pin	1.4	1.7	2.0	V