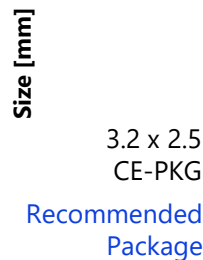


RX8900CE/RX8901CE Comparison

MD Sales Department
Seiko Epson Corporation

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EPSON



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【Specifications】 RX8900CE/RX8901CE Comparison **EPSON**

	RX8900CE	RX8901CE	
Interface	I ² C	I ² C	
Operating temperature	-40 ~ +85 °C	-40 ~ +105 °C	
Clock supply voltage	1.6 ~ 5.5 V	V _{VLF} ~ 5.5 V	V _{VLF} : 1.1 V (Max.)
Temperature compensated voltage	2.0 ~ 5.5 V	1.6 ~ 5.5 V	
Interface voltage	1.6 ~ 5.5 V	1.6 ~ 5.5 V	
	2.5 ~ 5.5 V	1.6 ~ 5.5 V	battery backup switch-over function
Stability	±3.4 ppm	±3.0 ppm	XS type: -40 ~ +85 °C
	-	±5.0 ppm	XS type: -40 ~ +105 °C
Current consumption	0.7 μA	0.24 μA	Typ. Ta = 25 °C V _{BAT} = 3.0 V
	1.4 μA	1.15 μA	Max. Ta = 85 °C V _{DD} = 3.0 V (reference)
	-	1.7 μA	Max. Ta = 105 °C V _{DD} = 3.0 V

 : Different spec vs.RX8900CE

【Functions】 RX8900CE/RX8901CE Comparison

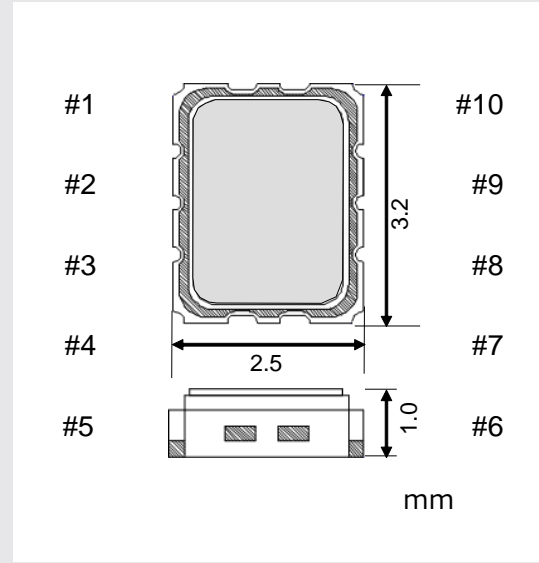
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	RX8900CE	RX8901CE	
Alarm	Day/date, hour, minute	Day/date, hour, minute, second	
Time stamp	-	3 channels×32 times max.	FIFO mode
FOUT	32 kHz/1024 Hz/1 Hz	32 kHz/1024 Hz/1 Hz	
Freq. temperature compensation	DTCXO	DTCXO	
Power switching	V _{DD}	V _{DD} or V _{BAT}	VDD-VOUT-VBAT
# of interruption pin	1	1	Timer interrupt can be assigned to FOUT pin
# of EVIN pin	-	3 pins max.	Time stamp external trigger
User memory	Resister RAM 13 bits	SRAM 256 bytes	Also used as the time stamp data recording area
Timer	to 4095 min.	to 31.9 years	Source clock 60 sec.
Resister map	00h ~ 1Fh	00h ~ 6Fh	Day/date counter is fully compatible

 : Different spec vs.RX8900CE

【Package/Pins】 RX8900CE/RX8901CE Comparison

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		RX8900CE	RX8901CE	
Package (mm)		CE Pkg (3.2 x 2.5 x 1.0t)	CE Pkg (3.2 x 2.5 x 1.0t)	
External dimension	Pin#	-	Option A	Option B
 <p>Diagram showing the package dimensions (3.2mm height, 2.5mm width, 1.0mm thickness) and pin locations (#1 to #10).</p>	1	FOE	V _{DD}	
	2	V _{DD}	V _{OUT}	
	3	V _{BAT}	V _{BAT}	
	4	FOUT	FOUT	EVIN3
	5	SCL	SCL	
	6	T1	EVIN1	
	7	SDA	SDA	
	8	T2	/INT	
	9	GND	GND	
	10	/INT	EVIN2	

: Different pin vs.RX8900CE

If you're interested in use cases by function or application-specific examples, we have prepared some materials for you.

Epson's RTC modules provide solutions for three major issues EPSON

Epson's RTC module helps to solve issues below.

Technical challenge	Provided function	Overview
Extra time and procedures are required to reset the time information when the system is rebooting.	Power Self-m	The FA equipment with a backup battery will
Event detection and recording are required even when the system is stopped.	Time s	
Incorrect time caused by heat generated from FA equipment.	Built-i Concerns Outflow	

Power switching function EPSON

What is Power switching function

RTC module detects a voltage drop in the main power supply and automatically switches to a backup power supply and continue to provide accurate time.

Technical challenges

Even during a long power or ne accurate time and ensure the c immediately upon restart. To utilize the smallest capacity efficient power supply switchin

Propose Epson's RTC module as solution

Epson's RTC modules, equippe an automatic power switching f accuracy, enabling the design

2-2. Temperature compensation Use case : Infortainment EPSON

Issues

Vehicle clocks gradually lose time.

Configuration example : MCU with a built-in RTC + 32 kHz xtal

Tuning Fork crystal frequency-temperature coefficient

The 32-kHz crystal unit has a quadratic frequency-temperature characteristic. Temperature fluctuations inside vehicles are large, resulting in frequency fluctuations and clock deviations.

Accuracy : Frequency deviation at room temperature + Frequency-temperature coefficient (Quadratic curve)

Ex.) Operated continuously for one month

Environment	Monthly rate
+40° C	Equivalent to 1 min. 50 sec. / month
+10° C	Equivalent to 1 min. 50 sec. / month
-40° C	Equivalent to 8 min. / month

You can download all of these materials by requesting them.

Document Request >

•Functions and Use Case examples

This document introduces applications that can leverage RTC functionality, along with use cases addressing related challenges and solutions.

•Solving Time Data Issue in FA Equipment

Regarding the time data in FA devices: (1) It is difficult to determine whether the time needs resetting upon device startup. (2) Error signal detection and logging are required even when the system is stopped. (3) The time may deviate due to device heat generation. This material explains how to use the RTC module to address these three issues.

•Solving Technical Issues in Security Cameras

For security cameras, accurate date and time data must be maintained even in the event of a long power outage or network outage, and the occurrence history of high-priority event signals must be maintained even when power is lost. This material explains how to use RTC modules to solve the following three problems: (1) when installed outdoors, (2) the temperature changes rapidly, and (3) time accuracy cannot be maintained.