

EPSON RTC

Easy Selection Guide



Rev1.4

Which feature is the most important?



High accuracy for over temperature?



Ultra low power consumption?







Battery switching function?



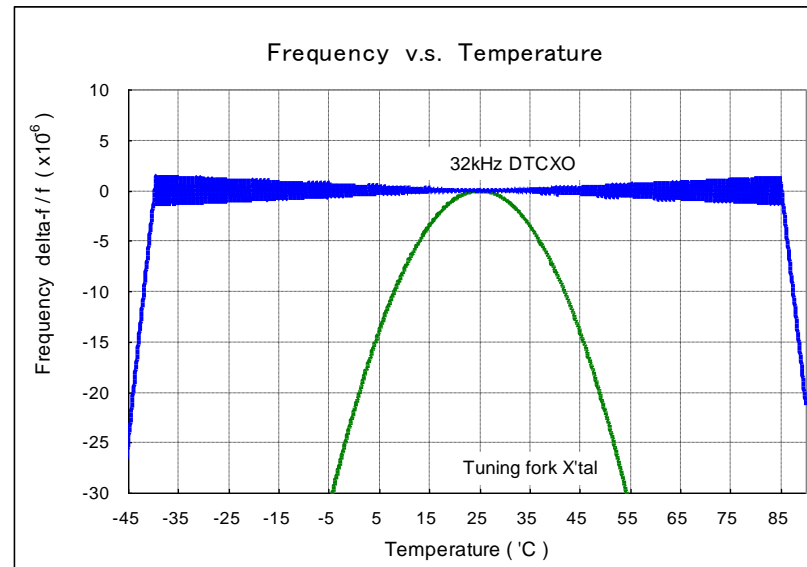
Tiny size?

RTC Easy Selection Guide

	RX6110SA	RX8010SJ	RX8130CE	RX-8035SA/LC RX-4035SA/LC	RX8900CE/SA	RX-8803SA/LC RX-4803SA/LC
Availability	MP	MP	MP	MP	MP SA...Mar/2015	MP
 High Stability	✓	✓	✓	✓	✓✓✓ ※1	✓✓✓ ※1
 Low power	✓✓✓ ※2	✓✓✓	✓✓	✓✓	✓	✓
 Battery Switching ※3	✓✓	-	✓✓✓	✓✓✓	✓✓	-
 Tiny size		✓	✓✓✓ ※4	✓✓	✓✓✓ ※4	✓✓



※1 High stability = With DTCXO RTC



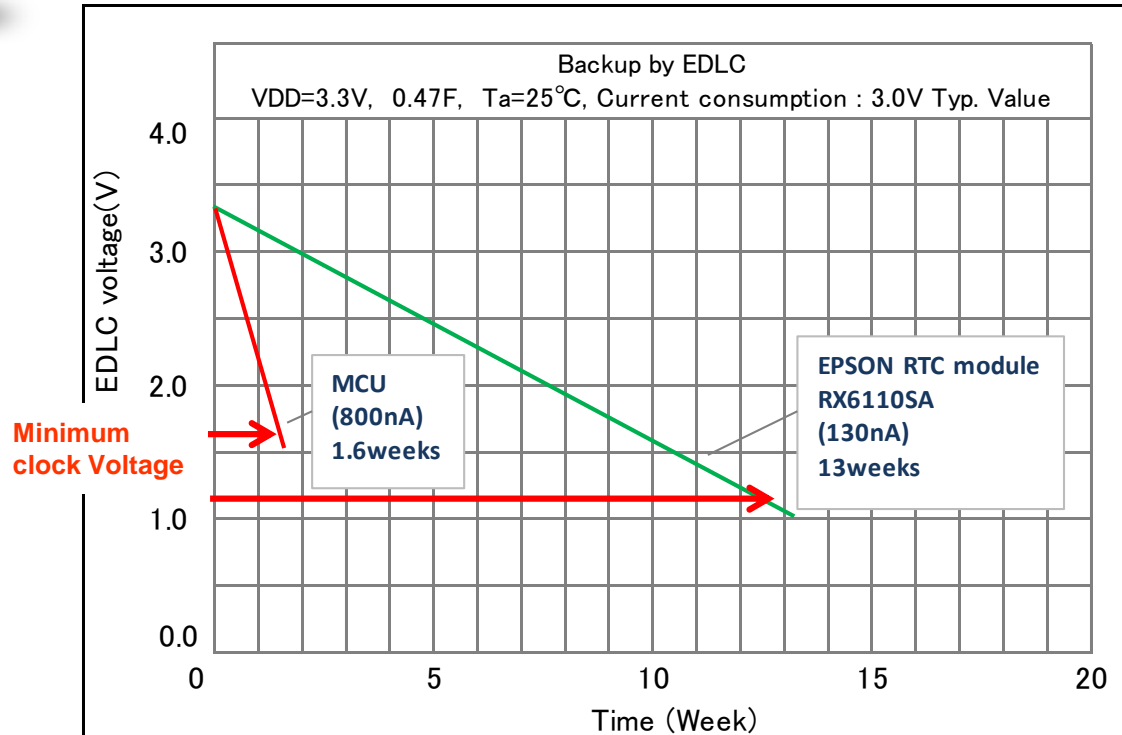
RX8900CE/SA
(UA ± 3.4 ppm/ $-40\sim 85^{\circ}\text{C}$)



RX-8803SA/LC
RX-4803SA/LC
(UA ± 3.4 ppm/ $-40\sim 85^{\circ}\text{C}$)



※2 Ultra Low power consumption



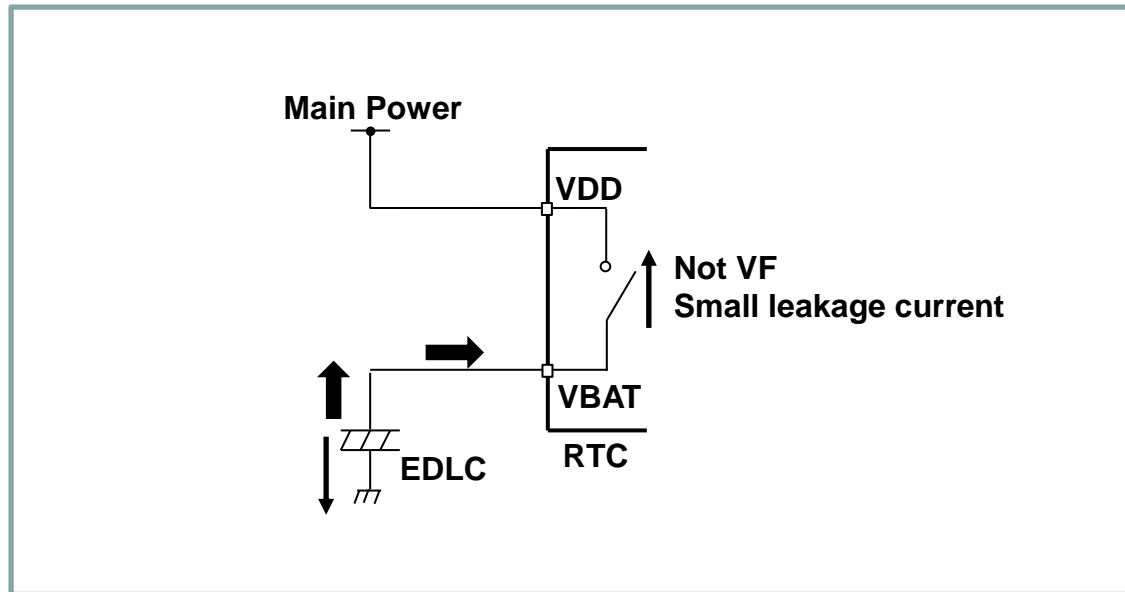
RX6110SA
(Typ.130nA)



RX8010SJ
(Typ.160nA)



※3 Battery Switching Function



RX6110SA



RX8900CE



RX8130CE

(Safe function
for Lithium secondary
battery)



RX-8035SA/LC
RX-4035SA/LC



※3 Battery Switching Function

	RX6110SA	RX8900SA/CE	RX8130CE	RX-8035SA/LC RX-4035SA/LC
Primary Supply	Powerline – constant supply voltage (on/off)	Powerline – constant supply voltage (on/off)	Any! As well discharging batteries	Any! As well discharging batteries
Backup Supply	Supercap or capacitors.	Supercap or capacitors.	Any! As well Lithium batteries since user programmable charge control is implemented!	Primary Battery

Other Power configurations are possible! Please read white paper or contact us!!



RX6110SA



RX8900CE



RX8130CE

(Safe function for Lithium secondary battery)



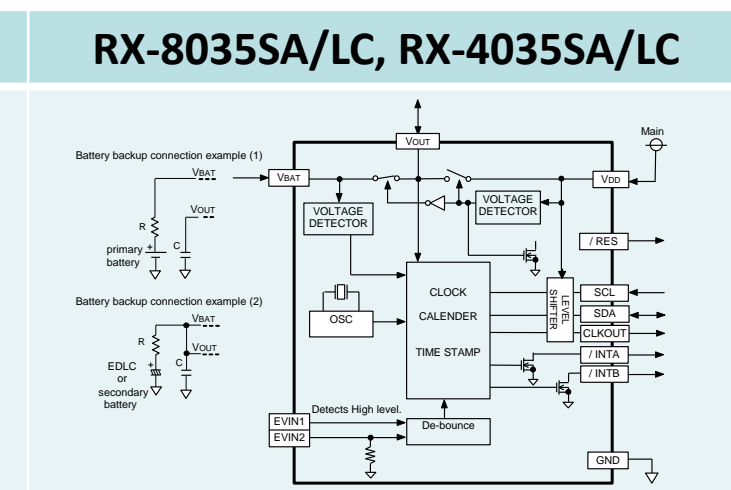
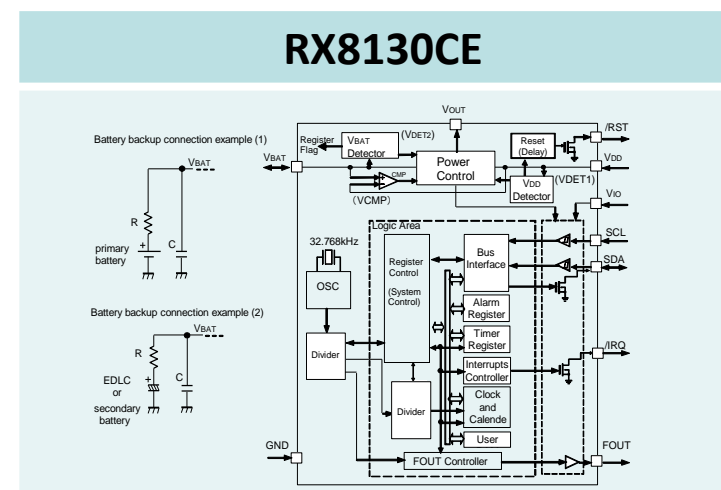
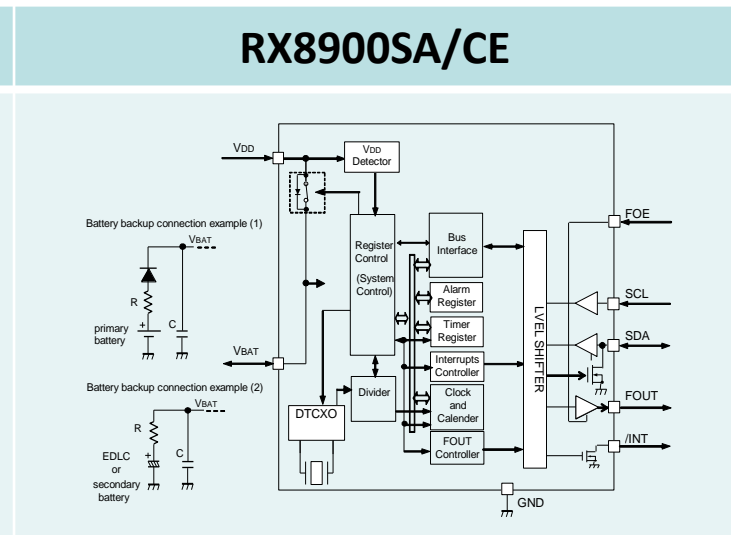
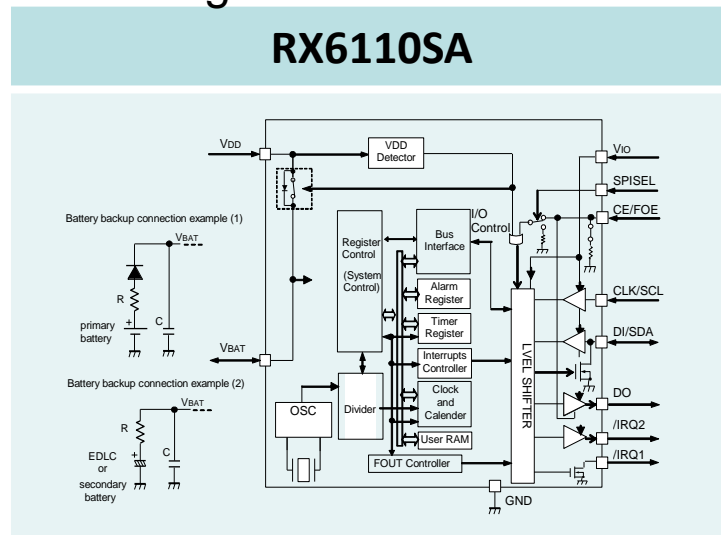
RX-8035SA/LC
RX-4035SA/LC

RTC with Power Switch – Backup Supply Connection Examples



※3 Battery Switching Function

■ Block diagram

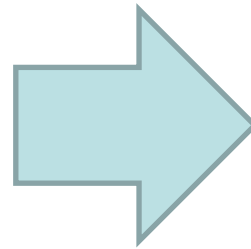




※4 Tiny size RTC module



SA package
10.1x7.4x3.3mm



CE package
3.2x2.5x1.0mm



RX8900CE

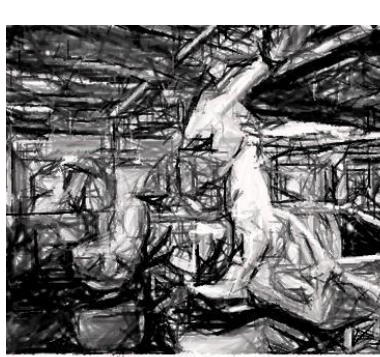


RX8130CE

RTC Easy Selection Guide

		EPSON	EPSON	EPSON	EPSON	EPSON	EPSON
		RX6110SA	RX8010SJ	RX8130CE	RX-8035SA/LC RX-4035SA/LC	RX8900SA/CE	RX-8803SA/LC RX-4803SA/LC
Size		10.1 × 7.4 × 3.3mm (SA)	7.0 × 6.0 × 2.4mm (SJ)	3.2x2.5x1.0mm(CE)	10.1 × 7.4 × 3.3mm (SA) 3.6x2.8x1.2mm(LC)	10.1 × 7.4 × 3.3mm (SA) 3.2x2.5x1.0mm(CE)	10.1 × 7.4 × 3.3mm (SA) 3.6x2.8x1.2mm(LC)
Crystal		Built-in	Built-in	Built-in	Built-in	Built-in	Built-in
Interface		I2C/SPI	I2C	I2C	I2C/SPI	I2C	I2C/SPI
Frequency tolerance		5 ± 23ppm / +25°C	5 ± 23ppm / +25°C	5 ± 23ppm / +25°C	5 ± 5ppm / +25°C 5 ± 23ppm / +25°C	UA: ± 3.4ppm / -40~85°C UB: ± 5ppm / -40~85°C	UA: ± 3.4ppm / -40~85°C UB: ± 5ppm / -40~85°C
Power voltage		1.6~5.5V	1.6~5.5V	1.6~5.5V	2.4~5.5V	1.6~5.5V	1.6~5.5V
Clock voltage		1.1~5.5V	1.1~5.5V	1.1~5.5V	1.0~5.5V	1.6~5.5V	1.6~5.5V
Current consumption	Typ.	130nA / 3V	160nA / 3V	300nA / 3V	350nA / 3V	700nA / 3V	750nA / 3V
	Max.	250nA / 3V	320nA / 3V	500nA / 3V	1200nA / 3V	1400nA / 3V	2100nA / 3V
Clock, calendar		■	■	■	■	■	■
Alarm		■	■	■	■	■	■
Timer		■	■	■	■	■	■
Frequency output		■	■	■	■	■	■
Clock calibration		■	-	-	■	-	-
DTCXO		-	-	-	-	■	■
Battery power switching		■	-	■	■	■	-
User RAM		SRAM 128bit	SRAM 128bit	SRAM 32bit	-	-	-
Remarks		-	-	Charge function for lithium secondary battery. Reset function with delay.	Event detection and Timestamp function	Temp sensor output function	1/100s time register.

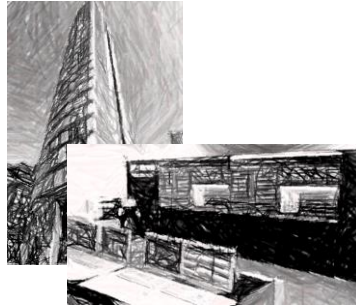
RTC Application example



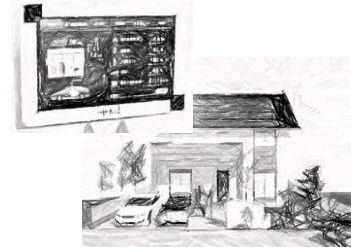
HMI



PLC



BEMS



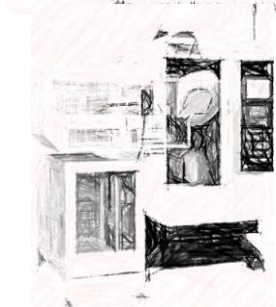
HEMS



Handy POS



Base station



CNC



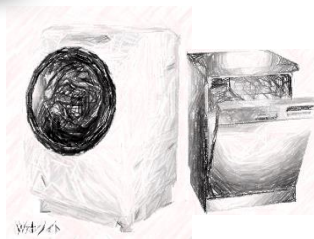
Ticket gate



Parking



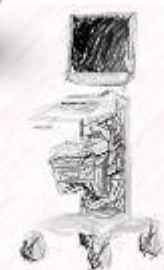
Automotive



White goods



Patient monitor



Endoscope



MFP

