

RTC module Guaranteed to operate at high temperatures

Seiko Epson Corp.
MD Sales & Marketing Dept.

1. RTC module guaranteed to operate at high temperatures
2. Built-in DTCXO
3. High temperature (+105 °C/+125 °C) operation selection flow
4. High temperature (+85 °C) operation selection flow
5. RTC Module comparison table Package size 3.2 x 2.5 mm

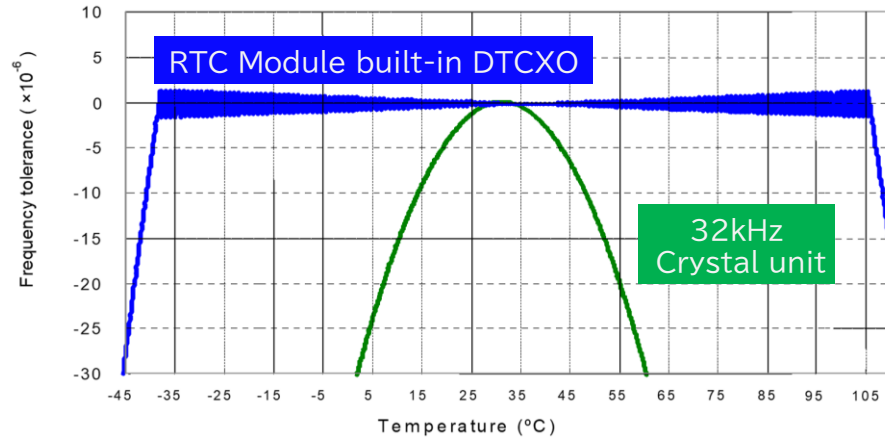
Epson offers a rich lineup of RTC modules with guaranteed characteristics in +105°C and +125°C environments.

The video with commentary



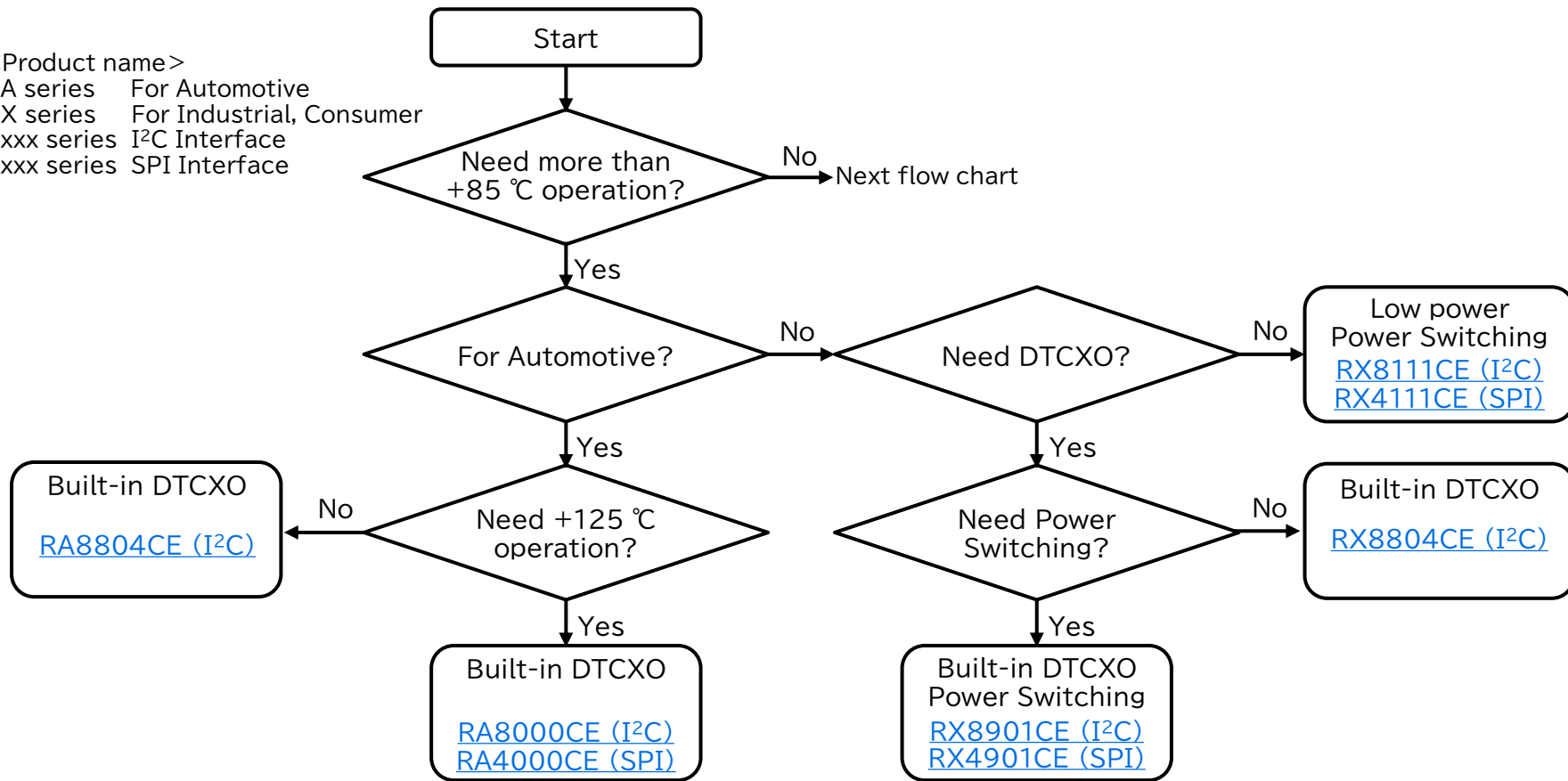
Features	RA8000CE	RA4000CE	RX8901CE	RX4901CE	RX8804CE RA8804CE	RX8111CE	RX4111CE	RX8900CE RA8900CE	RX8130CE
Operating Temperature Max.	+125 °C	+125 °C	+105 °C	+105 °C	+105 °C	+105 °C	+105 °C	+85 °C	+85 °C
Built-in DTCXO	✓	✓	✓	✓	✓	-	-	✓	-
Monthly rate +25 °C	13 sec.	13 sec.	8 sec. XS grade	8 Sec. XS grade	9 sec. XA grade	30 sec. A grade	30 sec. A grade	9 sec. UA grade	60 sec.
Monthly rate -40 to +85 °C						-	-		-
Monthly rate to Temperature Max.	130 sec.	130 sec.	13 sec. XS grade	13 sec. XS grade	21 sec, XA grade	-	-	-	-

DTCXO is a digital temperature compensated crystal oscillator. RTC module built-in DTCXO is an RTC module with a temperature compensation function that automatically corrects changes in oscillation frequency due to temperature fluctuations and can provide accurate time information over a wide temperature range. The frequency temperature characteristics are as shown by the blue line in the figure below.



<Product name>

RA series For Automotive
 RX series For Industrial, Consumer
 8xxx series I²C Interface
 4xxx series SPI Interface



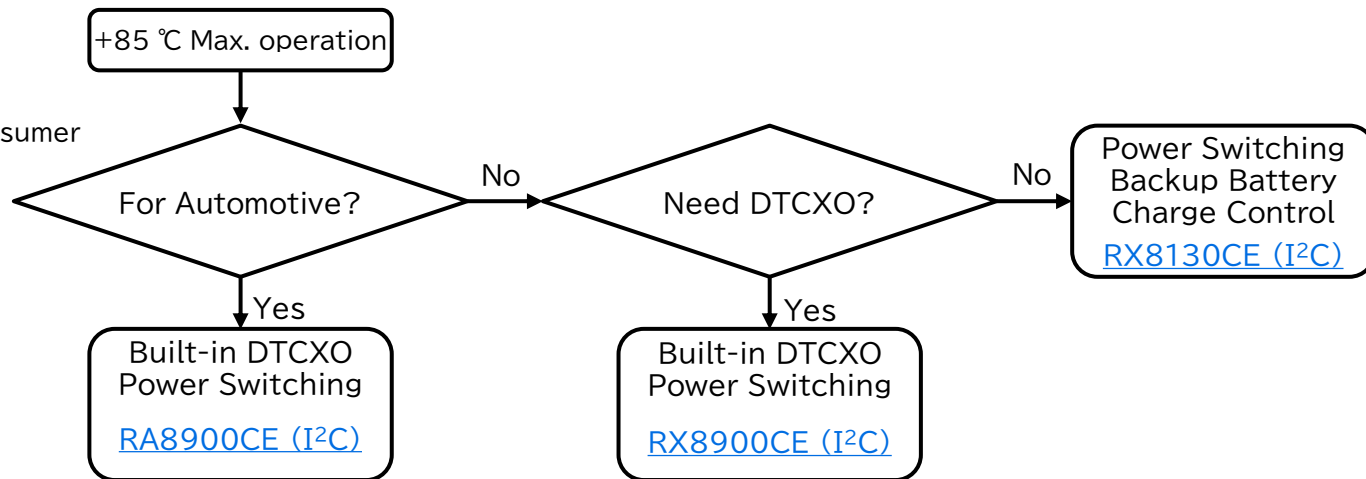
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RTC Module comparison table

Package size 3.2 x 2.5 mm

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Item	RX8901CE	RX4901CE	RA8000CE	RA4000CE	RX8804CE RA8804CE	RX8900CE RA8900CE	RX8111CE	RX4111CE	RX8130CE
DTCXO	✓	✓	✓	✓	✓	✓	-	-	-
Interface	I ² C	SPI	I ² C	SPI	I ² C	I ² C	I ² C	SPI	I ² C
Operating Temperature Max.	+105 °C	+105 °C	+125 °C	+125 °C	+105 °C	+85 °C	+105 °C	+105 °C	+85 °C
Backup current Typ. / 3 V	240 nA	240 nA	350 nA	350 nA	350 nA	700 nA	100 nA	100 nA	300 nA
Time stamp	32 times (Max.)	32 times (Max.)	2 times	2 times	1 time	-	8 times	8 times	-
EVIN pin	2 or 3 pin	0 or 1 or 2 pin	0 or 1 or 2 pin	0 or 1 or 2 pin	1 pin	-	1 pin	-	-
Power switching	✓	✓	-	-	-	✓ *Need external Diode for VBAT	✓	✓ *Need external Diode for VBAT	✓ Built-in backup battery charge control function
Reset output	-	-	✓ (optional)	✓ (optional)	-	-	-	-	✓
Automotive grade	-	-	Available	Available	Available RA8804CE	Available RA8900CE	-	-	-

Learn more about Epson's RTCs / Learn the basics of RTC modules, understand their main functions, and see application examples.

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