



REAL TIME CLOCK MODULE (I<sup>2</sup>C-Bus)
For Automotive
Built-in 32.768 kHz-DTCXO, High Stability



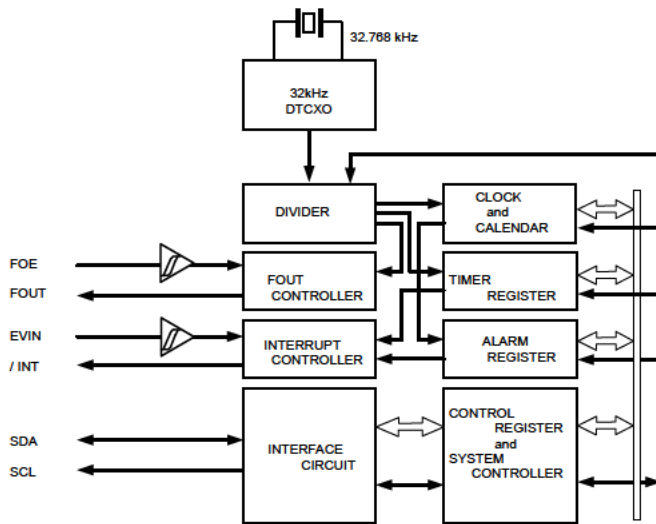
Product Number
RA8803SA UA: X1B000262A00100
RA8803SA UB: X1B000262A00200
RA8803SA UC: X1B000262A00300
RA8803SA AA: X1B000262A00600

RA8803SA

- Built in frequency adjusted 32.768 kHz crystal unit and DTCXO.
1/100s resolution Time register
Interface Type : I<sup>2</sup>C-Bus interface (400kHz)
Interface voltage range : 1.6 V to 5.5 V
Temp. compensated voltage range : 2.2 V to 5.5 V
Timekeeping voltage range : 1.6 V to 5.5 V
Selectable clock output (32.768 kHz, 1024 Hz, 1 Hz)
The various functions include full calendar, alarm, timer, EVIN input.
Applications : Car audio, Car navigation system, Clock
Conforms to AEC-Q200
The I<sup>2</sup>C-BUS is a trademark of NXP Semiconductors.



Block diagram



Overview

- High Stability
UA ±3.4 x 10<sup>-6</sup> / -40 °C to +85 °C
UB ±5.0 x 10<sup>-6</sup> / -40 °C to +85 °C
UC ±5.0 x 10<sup>-6</sup> / -30 °C to +70 °C
AA (+5 ±5.0) x 10<sup>-6</sup> / +25 °C
High Resolution: 1/100s Time register with capture buffer
32.768 kHz frequency output function
FOUT pin output (C-MOS output), CL=30 pF
Output selectable: 32.768 kHz, 1024 Hz, 1 Hz
The various interrupt
Timer Function can be set between 1/ 4096 second and 4095 minutes.
Alarm Function can be set to day of week, day, hour, or minute.
EVIN input.
Time synchronize function with 1PPS signal input
Register compatibility: upper compatible with RX-8801.

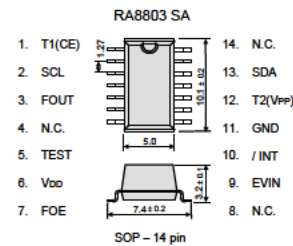
\*It is possible to use it by the terminal connection as 32.768 kHz-DTCXO.

Pin Function

Table with 3 columns: Signal Name, I/O, Function. Rows include T1(CE), SCL, FOUT, TEST, VDD, FOE, EVIN, /INT, GND, T2(VPP), SDA.

Terminal connection / External dimensions

(Unit mm)



The metal case inside of the molding compound may be exposed on the top or bottom of this product. This purely cosmetic and does not have any effect on quality, reliability or electrical specs.

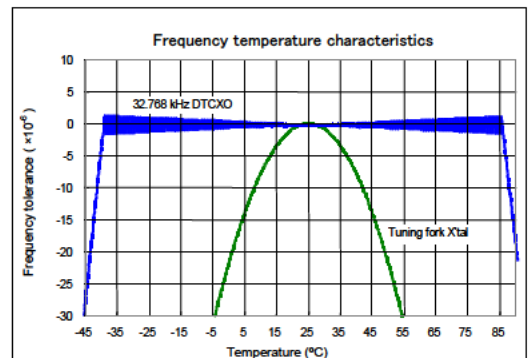
Specifications (characteristics)

\* Refer to application manual for details.

Electrical Characteristics

Table with 7 columns: Item, Symbol, Conditions, Min., Typ., Max., Unit. Rows include Operating voltage, Temp. compensated Voltage, Clock supply voltage, Operating temperature, Stability, Current consumption (1), Current consumption (2).

32.768 kHz-DTCXO Frequency temperature characteristics (Example)



\*1) Equivalent to ±9 seconds of month deviation. \*2) Equivalent to ±13 seconds of month deviation. \*3) Equivalent to ±13 seconds of month deviation. (excluding offset)