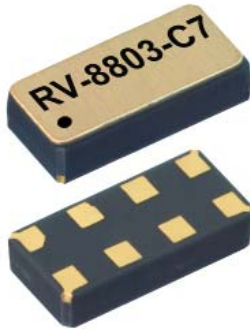


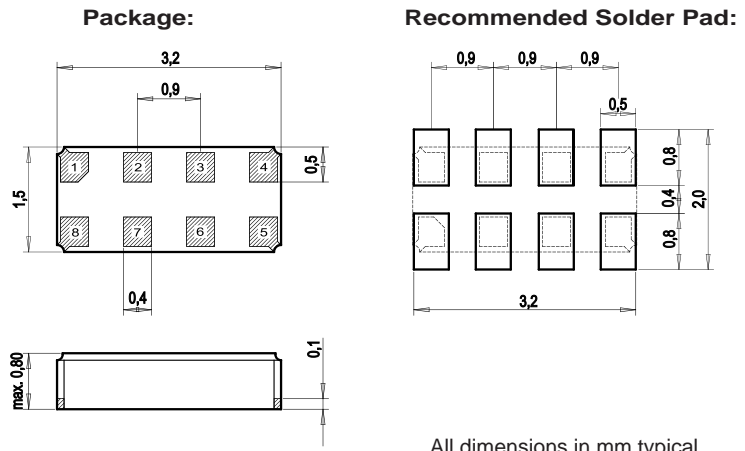
RV-8803-C7

Real Time Clock Module with I²C-Bus



100% leadfree, RoHS - compliant

DIMENSIONS



Extremely Accurate RTC Module with embedded Quartz Crystal. Ultra Low Power consumption I²C Interface Automotive qualified, according to AEC-Q200 Rev. C

Temperature Compensation:

| Temperature | Time Deviation |
|----------------|------------------------|
| 0°C to +50°C | ± 0.13 s/day ± 1.5 ppm |
| -40°C to +85°C | ± 0.26 s/day ± 3.0 ppm |

Lowest current consumption & smallest temperature compensated RTC Module!

DESCRIPTION:

The RV-8803-C7 is an high accuracy, ultra low power Real-Time-Clock Module with embedded 32.768 kHz Crystal.

High accuracy, high stability is achieved by factory calibrated, temperature compensated DTCXO and results to time-accuracy of ± 3.0 ppm across the temperature range from -40°C to +85°C.

Standard Clock & Calendar function tracks second, minute, hour in 24-hour format, year and leap-year flags. Beside standard RTC function like Timer & Alarm, it includes integrated Temperature Sensor, Time Stamp Event Input and User RAM and offers I2C-bus (2-wire Interface).

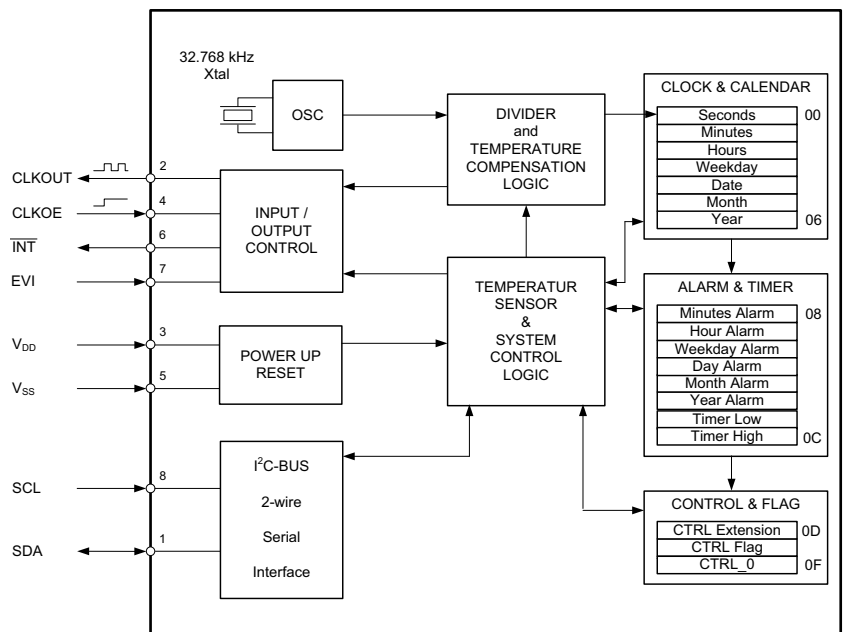
RV-8803-C7 is the smallest and offers the lowest current consumption among all temperature compensated RTC modules.

For pick-and-place equipment, the parts are available in 12 mm tape:

7" (178 mm) reel with 1'000 parts

7" (178 mm) reel with 3'000 parts

BLOCKDIAGRAM:



**ELECTRICAL CHARACTERISTICS
AT 25°C:**

| | Symbol | Condition | Min. | Typ. | Max | Unit |
|---|----------------------|----------------------|---|------|-------|-------|
| Supply voltage | V _{DD} | Time keeping | 1.5 | | 5.5 | V |
| Supply voltage | V _{DD} | Temp. comp. | 1.5 | | 5.5 | V |
| Current consumption | I _{DDO} | V _{DD} = 3V | | 250 | 400 | nA |
| CLKOUT frequency | F _{CLKOUT} | programmable | 32768 / 1024 / 1 | | | Hz |
| Freq. Tol: 1 Hz | ΔF/F | -40 to +85°C | | 0 | ± 3 | ppm |
| Freq. Tol: 32768 Hz | ΔF/F _{TOPR} | @ 25°C | | ± 10 | ± 20 | ppm |
| Freq.vs.Temp. | ΔF/F _{TOPR} | -40 to +85°C | -0.035 ppm/°C · (T - T ₀) ² ±10% | | | ppm |
| Aging first year | ΔF/F | @ 25°C | | | ± 3 | ppm |
| Time accuracy Temperature Compensated | Δt/t | 0 to +50°C | | | ±0.13 | s/day |
| | | | | | ±1.5 | ppm |
| | | -40 to +85°C | | | ±0.26 | s/day |
| | | | | | ±3.0 | ppm |

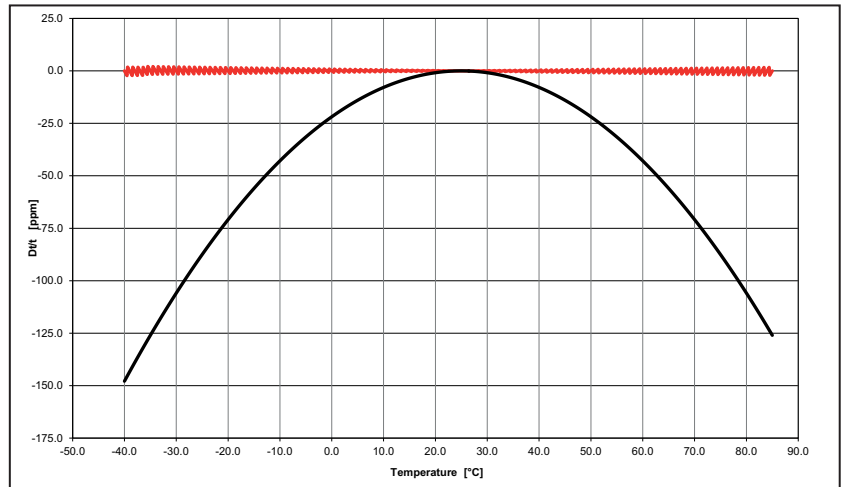
**ENVIRONMENTAL
CHARACTERISTICS:**

| | Conditions | Max. Dev. |
|-----------------------------|-----------------------------|-----------|
| Storage temp. range | -55 to +125°C | |
| Operating temperature range | -40 to +85°C | |
| Shock resistance | ΔF/F 5000 g, 0.3 ms, ½ sine | ± 5 ppm |
| Vibration resistance | ΔF/F 20 g / 10–2000 Hz | ± 5 ppm |

**PACKAGE, TERMINATIONS AND
PROCESSING:**

| Package-Type | Termination | Processing |
|--------------|------------------------------------|-------------------------------------|
| SON 8-pin | For SMD mounting Au plated pads | Reflow soldering 260°C/20 s max. |

**FREQUENCY TEMPERATURE
CHARACTERISTICS:**



**PIN CONNECTIONS
TOP VIEW:**

Production Date Code

#8 #5

M 303-A 1

8803

#1 #4

Pin 1 Index

Part Designation

| Pin | Connection |
|-----|--------------------------------|
| 1 | SDA Serial Data |
| 2 | CLKOUT Clock Output |
| 3 | V _{DD} Supply Voltage |
| 4 | CLKOE Clock Output Enable |
| 5 | V _{SS} Ground |
| 6 | INT Interrupt Output |
| 7 | EVI Event Input |
| 8 | SCL Serial Clock Input |

All specifications subject to change without notice.



Micro Crystal AG
Mühlestrasse 14
CH-2540 Grenchen
Switzerland

Tel. +41 32 655 82 82
Fax +41 32 655 82 83
sales@microcrystal.com
www.microcrystal.com