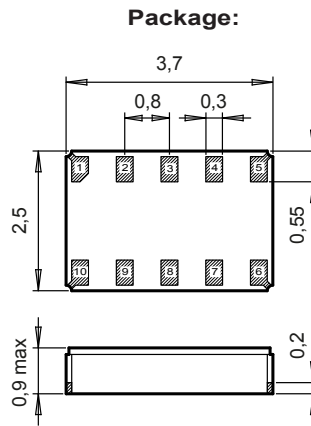


# RV-3029-C3

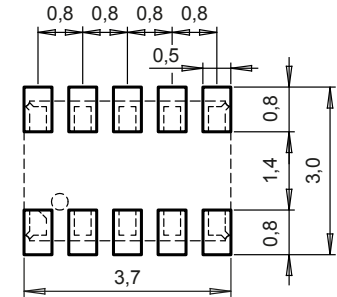
Real-Time Clock Module with I<sup>2</sup>C-Bus



## DIMENSIONS



## Recommended Solder Pad:



Metal lid is connected to V<sub>SS</sub> (pin #6)

All dimensions in mm typical

## APPLICATIONS

IoT  
Metering  
Industrial  
Portables  
Automotive  
Health Care

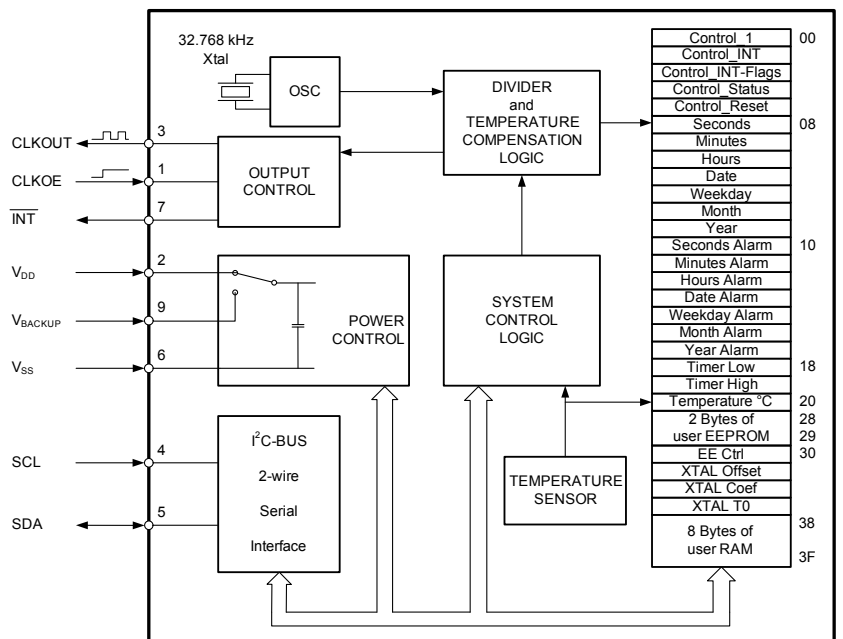
## DESCRIPTION

The RV-3029-C3 is a SMT Real-Time Clock Module that incorporates an integrated CMOS circuit together with an XTAL. It operates under vacuum in a hermetically sealed ceramic package with metal lid.

## FEATURES

- Low power consumption: 800 nA @ 3 V.
- Wide operating voltage range: 1.3 V to 5.5 V.
- Time accuracy, temp. compensated: Option A: -40 to +85°C, ±6 ppm, Option B: -40 to +85°C, ±25 ppm.
- Extended operating temperature range: -40 to +125°C.
- Automatic Backup Switchover and Trickle Charger function.
- Provides year, month, weekday, date, hours, minutes and seconds.
- Timer and Alarm functions.
- Clock output frequencies: 32.768 kHz, 1024 Hz, 32 Hz, 1 Hz.
- 2 bytes non-volatile user memory, 8 bytes user RAM.
- I<sup>2</sup>C-bus interface: 400 kHz.
- 100% Pb-free, RoHS-compliant.
- Automotive qualification according to AEC-Q200 available.

## BLOCK DIAGRAM



## ELECTRICAL CHARACTERISTICS AT 25°C

More detailed information can be found in the Application Manual.

## ENVIRONMENTAL CHARACTERISTICS

## TERMINATIONS AND PROCESSING

## FREQUENCY TEMPERATURE CHARACTERISTICS

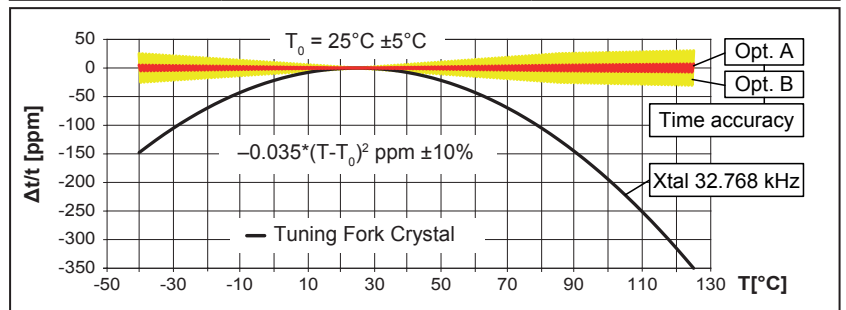
## PIN CONNECTIONS TOP VIEW

## ORDERING INFORMATION

|  | Symbol           | Condition   | Min.     | Typ. | Max  | Unit |
|--|------------------|---|----------|------|------|------|
| Supply voltage                           | V <sub>DD</sub>  | Time keeping  | 1.3      |      | 5.5  | V    |
| Supply voltage                           | V <sub>DD</sub>  | Thermom. active   | 2.1      |      | 5.5  | V    |
| Current consumption<br>Time keeping mode | I <sub>DDO</sub> | I <sup>2</sup> C-bus inactive,<br>V <sub>DD</sub> = 3 V |          | 800  | 1000 | nA   |
| Time acc. Opt. A / B                     | Δt/t             | -40 to +85°C  | ±6 / ±25 |      |      | ppm  |
| Aging first year max.                    | ΔF/F             | @ 25°C  | ±3       |      |      | ppm  |

|                                | Conditions                  | Max. Dev. |
|--------------------------------|-----------------------------|-----------|
| Storage temp. range            | -55 to +125°C               |           |
| TA Operating temperature range | -40 to +85°C                |           |
| TB Extended oper. temp. range  | -40 to +125°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 | Termination     | Processing                                |
|---------|-----------------|---|
| SON-10  | Au flashed pads | IPC/JEDEC J-STD-020C<br>260°C / 20 - 40 s |



| Pin | Connection                                |
|-----|---|
| 1   | CLKOE Clock Output Enable                 |
| 2   | V <sub>DD</sub> Power Supply Voltage      |
| 3   | CLKOUT Clock Output                       |
| 4   | SCL Serial Clock Input                    |
| 5   | SDA Serial Data                           |
| 6   | V <sub>SS</sub> Ground                    |
| 7   | INT Interrupt Output                      |
| 8   | NC Not connected                          |
| 9   | V <sub>BACKUP</sub> Backup Supply Voltage |
| 10  | NC Not connected                          |

| RV - 3029 - C3 Option A TA QC  |
|--|
| RTC module   |
| Product type   |
| Package size<br>C3 = 3.7 x 2.5 x 0.9 mm  |
| Time accuracy<br>Option A = ±6 ppm @ -40°C to +85°C<br>Option B = ±25 ppm @ -40°C to +85°C |
| Qualification<br>QC = Commercial Grade (Standard)<br>QA = Automotive Grade AEC-Q200        |
| Temperature range<br>TA = -40 to +85°C (Standard)<br>TB = -40 to +125°C                    |

|   |                                      |
|---|--------------------------------------|
| A unique part number will be generated for each product specification, i.e: |                                      |
| 20xxxx-MG01   | 1'000 pcs (in 12 mm tape on 7" reel) |
| 20xxxx-MG03   | 3'000 pcs (in 12 mm tape on 7" reel) |

All specifications subject to change without notice.



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