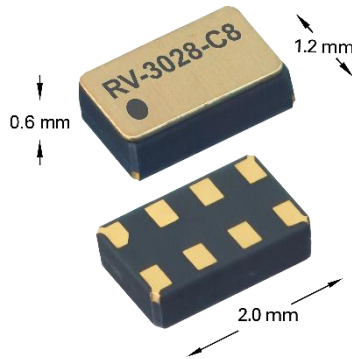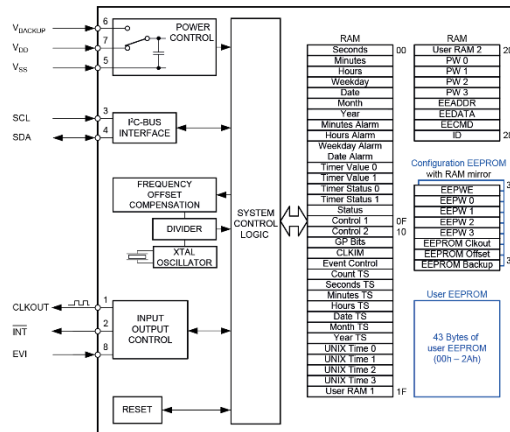# PRODUCT INTRODUCTION

Micro Crystal RV-3028-C8

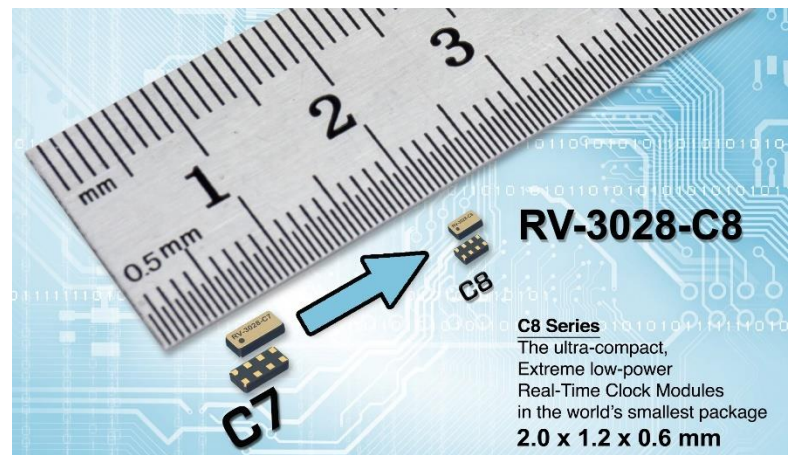*Top and Bottom View*

Block Diagram

Opened View

Ultra-Miniaturized Real-Time Clock Module with built-in crystal, automatic backup switch and event detection

Surface-mount ultra- small RTC with 2.0 x 1.2 mm with calendar, external event detection, clock out and automatic switchover features.

Composed of advanced ultra-low power CMOS dedicated RTC circuit paired with a "tuning-fork" crystal.

Each part is individually trimmed during production to ensure ± 1 ppm time accuracy at 25°C. Featuring a dependable hermetically vacuum-sealed metal lid, this latest addition to the C8 lineup provides a low-profile of only 0.6 mm.

RV-3028-C8

C7

C8 Series
The ultra-compact,
Extreme low-power
Real-Time Clock Modules
in the world's smallest package
2.0 x 1.2 x 0.6 mm

Features

The time accuracy of ± 1 ppm at 25°C, the ultra-low power consumption (typ. 70 nA at 3.0V) with wide operating voltage range of 1.1 to 5.5 V, large temperature range of -40° to 85°C combined to ultra-small footprint and the high reliability are the key features of this device.

- Current Consumption: Typ. 70 nA @ 3.0V in timekeeping mode
- ± 1 ppm @ 25°C Frequency Stability
- I2C-bus: fast mode up to 400 kHz
- Operating Supply Voltage Range: 1.1 to 5.5V
- ,

- Operating Temperature Range: -40°C to +85°C
- Ultra-Small Industry Standard Package: 2.0 x 1.2 x 0.6 mm
- High Shock and Vibration Resistant
- RoHS/Lead-Free Compliant
- Automotive AEC-Q200 Qualified

Applications

The RV-3028-C8 is tailored for high-volume and cost-sensitive applications with exceptionally tight space limitations, necessitating superior reliability, accuracy, stability, and prolonged operational life.

This component finds utility in a range of applications such as wearables, where an ultra-low power timekeeping function is crucial.

- Wearable Health Trackers: Monitoring and recording vital signs, physical activity, and sleep patterns with high precision.
- Smartwatches: Providing accurate timekeeping while maximizing battery life for extended usage.
- IoT Devices: Enabling energy-efficient timekeeping in Internet of Things devices for seamless data synchronization.
- Medical Devices: Facilitating precise timekeeping in medical equipment to ensure accurate data recording and synchronization.
- Automotive Electronics: Supporting time-sensitive applications in automotive systems such as vehicle data logging and event timestamping.

The RV-3028-C8's ultra-low power consumption and reliability make it a suitable choice for applications where space constraints and long-term performance are critical considerations.

It is ideal for all clock timing and sleep mode in battery-operated devices and perfectly suitable for many other applications:

- Communication: IoT / Wearables / Wireless Sensors and Tags / Handsets

- Automotive: M2M / Navigation & Tracking Systems / Dashboard / Tachometers / Engine Controller/ Car Audio & Entertainment Systems

- Metering: E-Meter / Heating Counter / Smart Meters / PV Converter / Utility metering

- Outdoor: ATM & POS systems / Surveillance & Safety systems / Ticketing Systems

- Medical: Glucose Meter / Health Monitoring Systems

- Safety: Security & Camera Systems / Door Lock & Access Control

- Consumer: Gambling Machines / TV & Set Top Boxes / White Goods

- Automation: PLC / Data Logger / Home & Factory Automation / Industrial and Consumer Electronics

PRODUCT INTRODUCTION

Micro Crystal offers a broad range of Quartz resonators, XOs, VCXOs and RTC modules to meet customers' unique timing requirements. More information about these products is available at www.microcrystal.com/en/products/