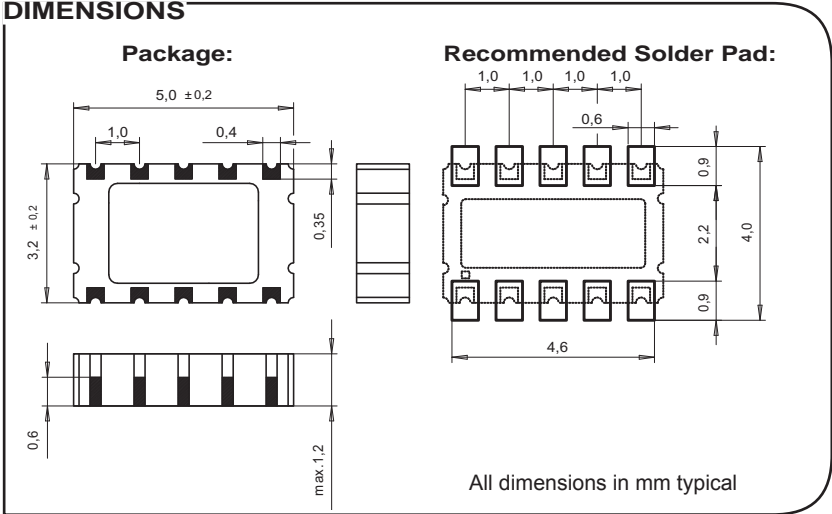
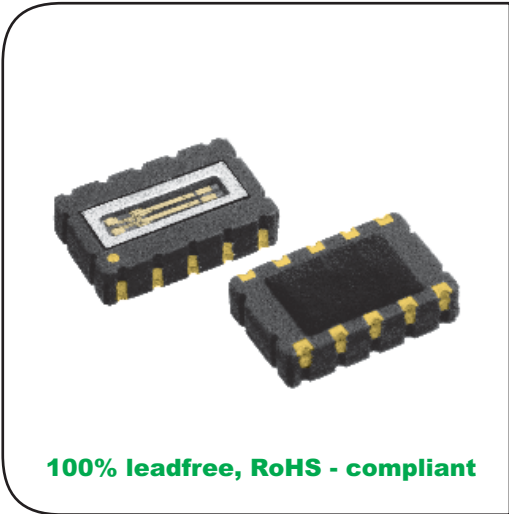


RV-3029-C2

Real Time Clock Module with I²C-Bus



Extremely Accurate RTC Module with embedded Xtal. I²C Interface Temperature Compensation Automotive qualified, according to AEC-Q200 Rev. C

| Option A: | Calibrated | |
|-----------------|----------------|--------|
| Temperature | Time Deviation | |
| @ +25°C | ± 0.26 s/day | ± 3ppm |
| 0°C to +50°C | ± 0.35 s/day | ± 4ppm |
| -10°C to +60°C | ± 0.44 s/day | ± 5ppm |
| -40°C to +85°C | ± 0.52 s/day | ± 6ppm |
| -40°C to +125°C | ± 0.70 s/day | ± 8ppm |

| Option B: | Default | |
|----------------|----------------|---------|
| Temperature | Time Deviation | |
| @ +25°C | ± 0.26 s/day | ± 3ppm |
| 0°C to +50°C | ± 0.44 s/day | ± 5ppm |
| -10°C to +60°C | ± 0.87 s/day | ± 10ppm |
| -40°C to +85°C | ± 2.17 s/day | ± 25ppm |

DESCRIPTION:

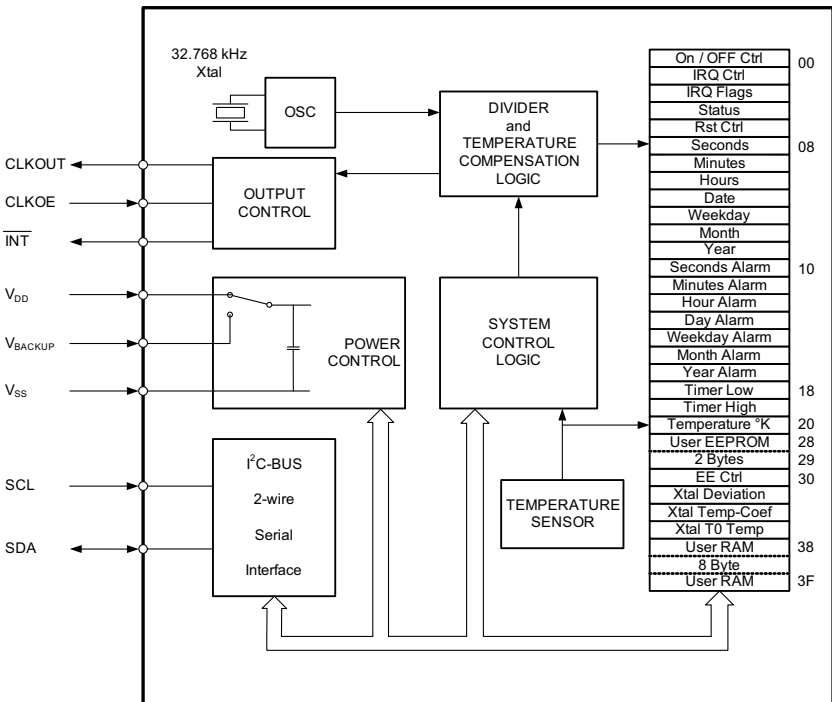
The RV-3029-C2 is a Real-Time-Clock Module with embedded Crystal. This RTC has an I²C Bus (2-wire Serial-Interface) and offers temperature compensated time. The STC-Smart Temperature Compensation is calibrated in the factory and leads to a very high time-accuracy of ± 6ppm from -40°C to +85°C and ± 8ppm from -40°C to +125°C.

Beside standard RTC functions, it includes a Backup-Battery Input with internal switchover function, a programmable Trickle-charge circuitry, an integrated Temperature Sensor with digital-output and offers 8 Bytes RAM and 2 Bytes EEPROM for customer's application.

The calendar function tracks year and leap-year flags. The clock tracks second, minute and hour in 24-hour format. Programmable alarm setting and universal timer functions increase flexibility.

For pick-and-place equipment, the parts are available in 12 mm tape:
 7" (178 mm) reel with 1'000 parts
 13" (330 mm) reel with 5'000 parts

BLOCKDIAGRAM:



ELECTRICAL CHARACTERISTICS AT 25°C:

| | Symbol | Condition | Min. | Typ. | Max | Unit |
|----------------------|----------------------|--------------------------|---|------|-------|-------|
| Supply voltage | V _{DD} | Time keeping | 1.3 | | 5.5 | V |
| Supply voltage | V _{DD} | Temp. comp. | 1.8 | | 5.5 | V |
| Current consumption | I _{DDO} | V _{DD} = 3V | | 800 | 1000 | nA |
| CLKOUT frequency | | Progr. | 32.768/1024/32/1 | | | Hz |
| Frequency Tolerance | ΔF/F | @ 25°C | | ±10 | ±20 | ppm |
| Freq.vs.Temp. | ΔF/F _{TOPR} | 20 ≤ T ₀ ≤ 30 | -0.035 ppm/°C · (T - T ₀) ² ±10% | | | ppm |
| Aging first year | ΔF/F | @ 25°C | | | ± 3 | ppm |
| Time accuracy Opt. A | Δt/t | @ 25°C | | | ±0.26 | s/day |
| | | -40 to +85°C | | | ±0.52 | s/day |
| Time accuracy Opt. B | Δt/t | @ 25°C | | | ±0.26 | s/day |
| | | -40 to +85°C | | | ±2.17 | s/day |

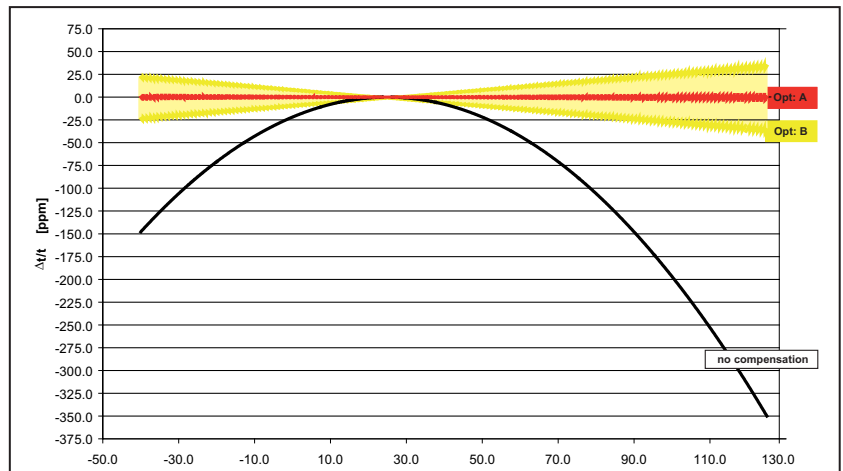
ENVIRONMENTAL CHARACTERISTICS:

| | | 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, 1/2 sine | ± 5 ppm |
| Vibration resistance | ΔF/F | 20 g / 10–2000 Hz | ± 5 ppm |

PACKAGE, TERMINATIONS AND PROCESSING:

| Package-Type | Termination | Processing |
|--------------|------------------------------------|-------------------------------------|
| SON 10-pin | For SMD mounting Au plated pads | Reflow soldering 260°C/20 s max. |

FREQUENCY TEMPERATURE CHARACTERISTICS:



PIN CONNECTIONS TOP VIEW:

| | | | |
|--|------------------------|-------------------------|---|
| | Product Marking | Pin | Connection |
| | #10 | 1 | V _{DD} Power Supply Voltage |
| | #6 | 2 | CLKOUT Frequency Output |
| | | 3 | N.C. not connected |
| | | 4 | SCL Serial Clock Input |
| | | 5 | SDA Serial Data |
| | | 6 | V _{SS} Ground |
| | | 7 | INT Interrupt Output |
| | | 8 | V _{BACKUP} Backup Supply Voltage |
| | | 9 | N.C. not connected |
| | 10 | CLKOE CLK Output Enable | |

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

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