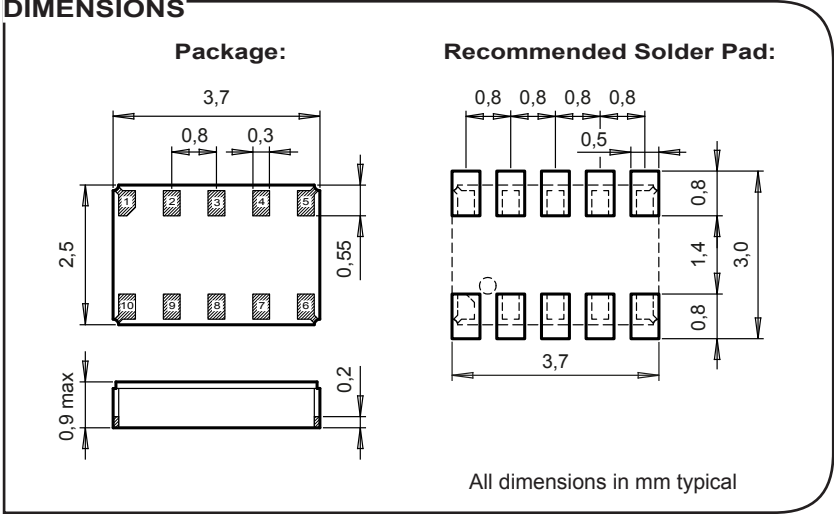


RV-8564-C3

Real-Time Clock Module with I²C-Bus



APPLICATIONS

- IoT
- Metering
- Industrial
- Automotive
- Health Care
- Wearables, Portables

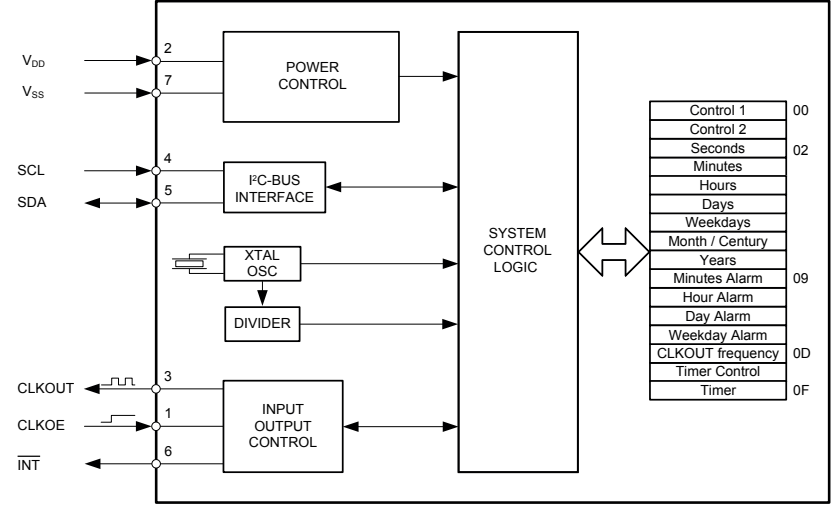
DESCRIPTION

The RV-8564-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: 250 nA @ 3 V.
- Wide operating voltage range: 1.2 V to 5.5 V.
- Time accuracy: ±20 ppm @ 25°C.
- Operating temperature: -40 to +85°C.
- Low voltage detection.
- Provides year, month, date, weekday, hours, minutes and seconds.
- Leap year calculation and Century bit.
- Alarm and timer functions.
- Clock output frequencies: 32.768 kHz, 1024 Hz, 32 Hz, 1 Hz.
- I²C-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.

| | Symbol | Condition | Min. | Typ. | Max | Unit |
|--|---------------------|---|-------------------------|------|-----|------|
| Supply voltage | V _{DD} | I ² C-bus active | 1.8 | | 5.5 | V |
| Supply voltage | V _{DD} | Time keeping | 1.0 | | 5.5 | V |
| Current consumption Time keeping mode | I _{DDO} | I ² C-bus inactive, V _{DD} = 3 V | | 250 | 350 | nA |
| CLKOUT frequency | F _{CLKOUT} | Programmable | 32768/1024/32/1 | | | Hz |
| Freq. tol. typ./max. | ΔF/F | @ 25°C | ±10 / ±20 ¹⁾ | | | ppm |
| Aging first year max. | ΔF/F | @ 25°C | ±3 | | | ppm |

1) Tighter frequency tolerances on request.

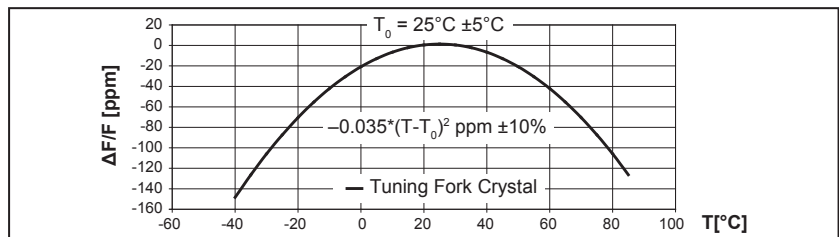
ENVIRONMENTAL CHARACTERISTICS

| | Conditions | Max. Dev. |
|--------------------------------|-----------------------------|-----------|
| Storage temp. range | -55 to +125°C | |
| TA 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 |

TERMINATIONS AND PROCESSING

| Package | Termination | Processing |
|---------|-----------------|---|
| SON-10 | Au flashed pads | IPC/JEDEC J-STD-020C 260°C / 20 - 40 s |

FREQUENCY TEMPERATURE CHARACTERISTICS



PIN CONNECTIONS TOP VIEW

| Pin | Connection |
|-----|--------------------------------------|
| 1 | CLKOE Clock Output Enable |
| 2 | V _{DD} Power Supply Voltage |
| 3 | CLKOUT Clock Output |
| 4 | SCL Serial Clock Input |
| 5 | SDA Serial Data |
| 6 | INT̄ Interrupt Output |
| 7 | V _{SS} Ground |
| 8 | NC Not connected |
| 9 | NC Not connected |
| 10 | NC Not connected |

Product Date Code: #10 #6
Part Designation: M723A1 8564
Pin 1 Index: #1 #5

ORDERING INFORMATION

| RV - 8564 - C3 TA QC | Qualification |
|-------------------------|--|
| RTC module | QC = Commercial Grade (Standard) QA = Automotive Grade AEC-Q200 |
| Product type | |
| Package size | Temperature range |
| C3 = 3.7 x 2.5 x 0.9 mm | TA = -40 to +85°C (Standard) |

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.



A COMPANY OF THE SWATCH GROUP

Micro Crystal AG
Muehlestrasse 14
CH-2540 Grenchen
Switzerland

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