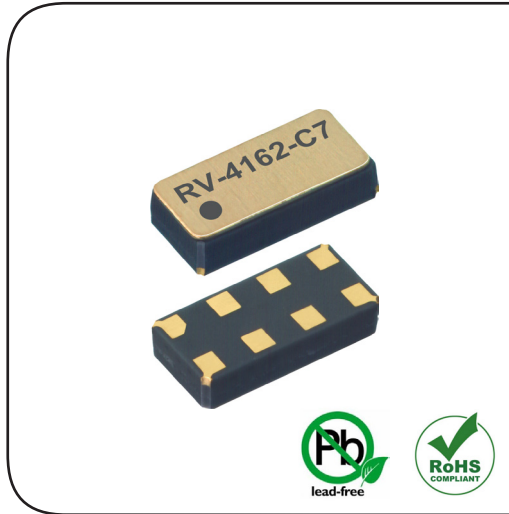
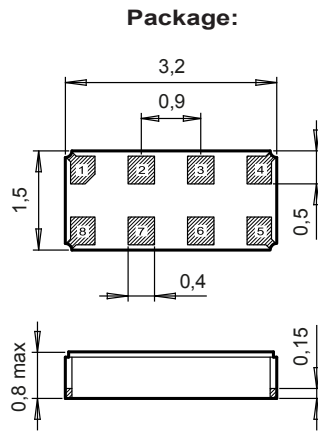


# RV-4162-C7

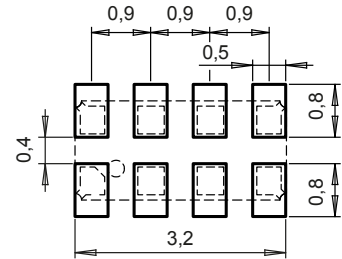
Real Time Clock Module with I<sup>2</sup>C-Bus



## DIMENSIONS



## Recommended Solder Pad:



Metal lid is not connected

All dimensions in mm typical

## APPLICATIONS

IoT  
Metering  
Industrial  
Automotive  
Health Care  
Wearables, Portables

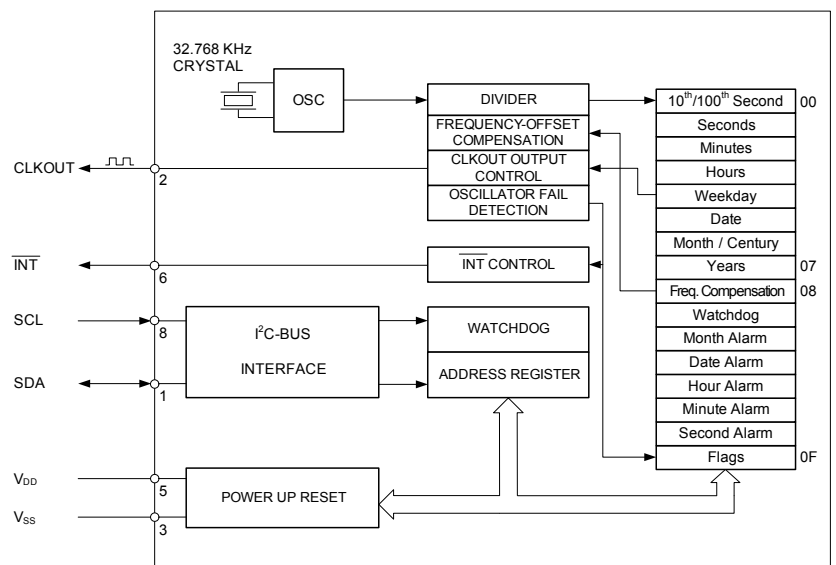
## DESCRIPTION

The RV-4162-C7 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: 350 nA @ 3 V.
- Operating voltage range: 1.0 V to 4.4 V.
- Time accuracy: ±20 ppm @ 25°C.
- Operating temperature range: -40 to +85°C.
- User programmable offset value.
- Oscillator stop detection.
- Provides year, month, date, weekday, hours, minutes, seconds, 100th.
- Automatic leap year calculation and century bits.
- Alarm and Watchdog functions.
- Clock output frequencies: 32.768 kHz to 1 Hz.
- 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.

	Symbol	Condition	Min.	Typ.	Max	Unit
Supply voltage	$V_{DD}$	I <sup>2</sup> C-bus active	1.3		4.4	V
Supply voltage	$V_{DD}$	Time keeping	1.0		4.4	V
Current consumption Time keeping mode	$I_{DDO}$	I <sup>2</sup> C-bus inactive, $V_{DD} = 3\text{ V}$		350	500	nA
CLKOUT frequency	$F_{CLKOUT}$	Programmable	32768 to 1			Hz
Frequency tolerance	$\Delta F/F$	@ 25°C	±20 <sup>1)</sup>			ppm
Aging first year max.	$\Delta F/F$	@ 25°C	±3			ppm

1) Tighter frequency tolerances on request.

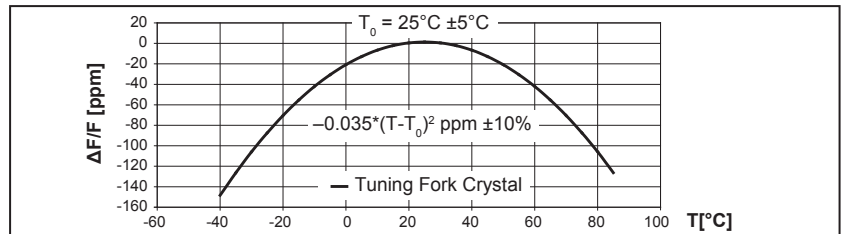
## ENVIRONMENTAL CHARACTERISTICS

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

## TERMINATIONS AND PROCESSING

Package	Termination	Processing
SON-8	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

## FREQUENCY TEMPERATURE CHARACTERISTICS



## PIN CONNECTIONS TOP VIEW

Product Date Code

#8 #5

M035A1

4162

#1 #4

Part Designation

Pin 1 Index

Pin	Connection
1	SDA Serial Data
2	CLKOUT Clock Output
3	$V_{SS}$ Ground
4	NC Not connected
5	$V_{DD}$ Power Supply Voltage
6	INT Interrupt Output
7	NC Not connected
8	SCL Serial Clock Input

## ORDERING INFORMATION

**RV - 4162 - C7 TA QC**

**RTC module**

**Product type**

**Package size**  
C7 = 3.2 x 1.5 x 0.8 mm

**Qualification**  
QC = Commercial Grade (Standard)  
QA = Automotive Grade AEC-Q200

**Temperature range**  
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