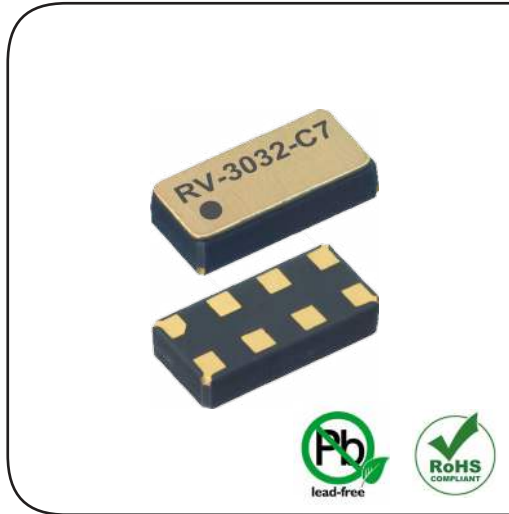
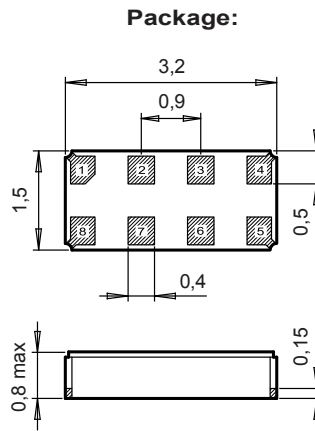


# RV-3032-C7

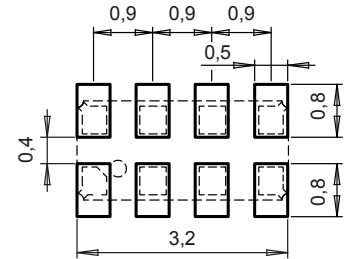
Real-Time Clock Module with I<sup>2</sup>C-Bus



## DIMENSIONS



## Recommended Solder Pad:



Metal lid is connected to V<sub>SS</sub> (pin #5)

All dimensions in mm typical

## APPLICATIONS

IoT  
Metering  
Industrial  
Automotive  
Health Care  
Wearables, Portables

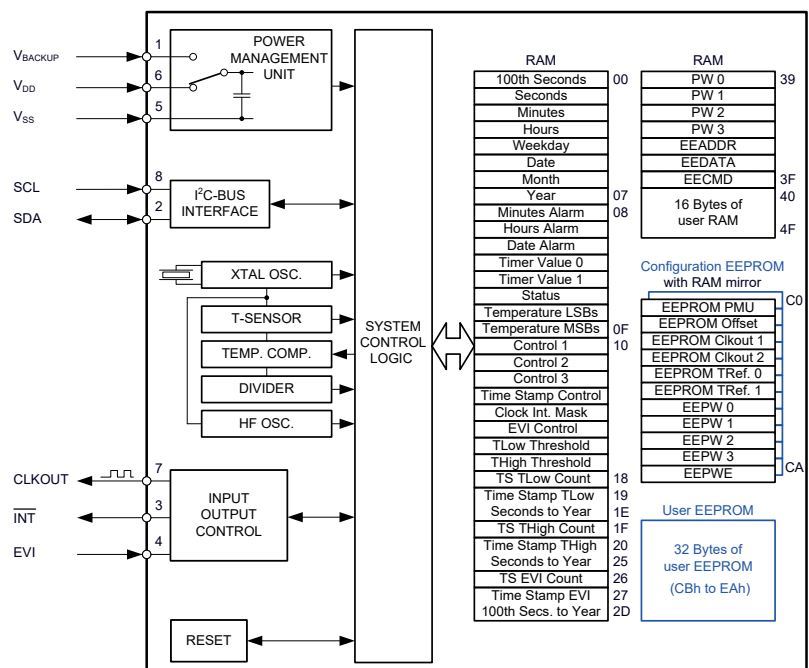
## DESCRIPTION

The RV-3032-C7 is a SMD 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

- Ultra low power consumption: 160 nA @ 3 V
- Wide operating voltage range: 1.3 V to 5.5 V
- Time accuracy: -40°C to +85°C, ±2.5 ppm  
+85°C to +105°C, ±20.0 ppm
- Readable 12-bit Temperature Sensor with interrupt function
- User programmable Password for write protection
- Automatic Backup Switchover
- Trickle Charger with Charge Pump
- Timer, Alarm and External Event functions
- Clock output frequencies: 1 Hz to 52 MHz
- 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	$V_{DD}$	Temp. comp.	1.3		5.5	V
Current consumption Time keeping mode	$I_{DDO}$	I <sup>2</sup> C-bus inactive, $V_{DD} = 3\text{ V}$		160	210	nA
Time accuracy	$\Delta F/F$	-40 to +85°C	±2.5			ppm
		+85 to +105°C	±20.0			
Aging first year max.	$\Delta F/F$	@ 25°C	±3			ppm

## ENVIRONMENTAL CHARACTERISTICS

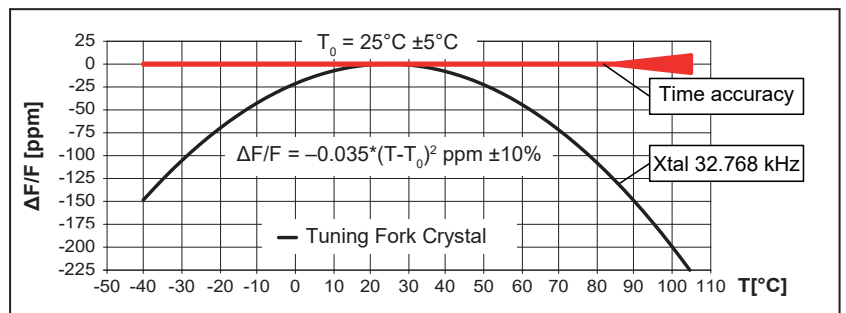
		Conditions	Max. Dev.
Storage temperature range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C <sup>1)</sup>	
Shock resistance	$\Delta F/F$	5000 g, 0.3 ms, ½ sine	±5 ppm
Vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	±5 ppm

1) Supports extended range from +85°C to +105°C with limitations.

## 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

Pin	Connection
1	$V_{BACKUP}$ Backup Supply Voltage
2	SDA Serial Data
3	$\overline{INT}$ Interrupt Output
4	EVI Event Input
5	$V_{SS}$ Ground
6	$V_{DD}$ Power Supply Voltage
7	CLKOUT Clock Output
8	SCL Serial Clock Input

## ORDERING INFORMATION

RV - 3032 - C7 TA QC	
RTC module	Qualification
Product type	QC = Commercial Grade (Standard)
Package size	QA = Automotive Grade AEC-Q200
C7 = 3.2 x 1.5 x 0.8 mm	Temperature range
	TA = -40 to +85°C (Standard)
	(supports extended range from +85°C to +105°C with limitations)

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  
sales@microcrystal.com  
www.microcrystal.com