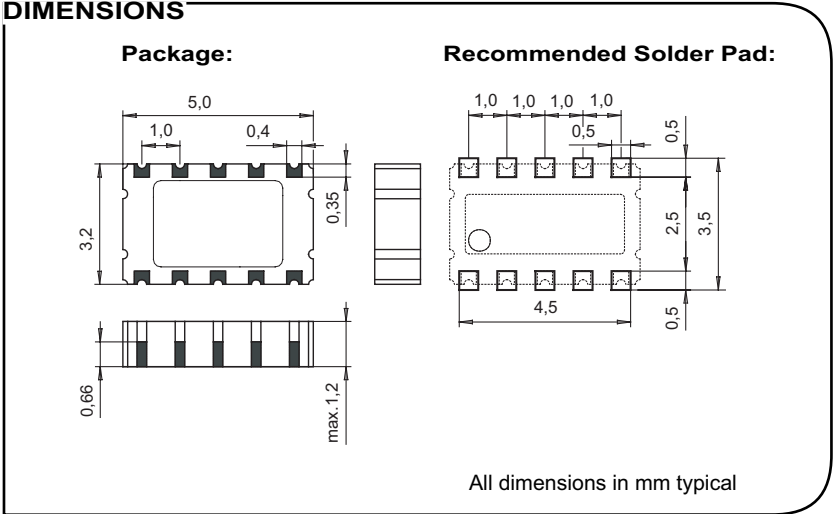
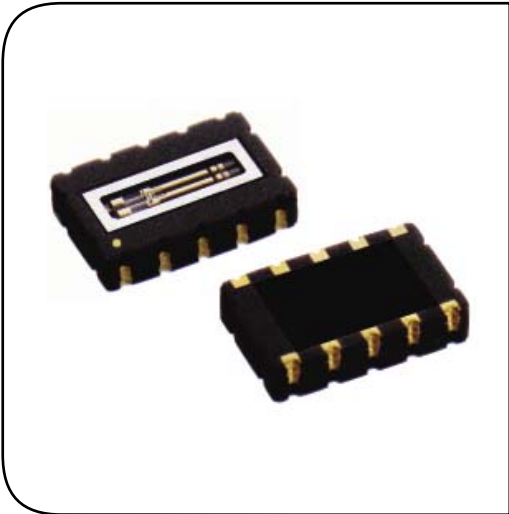


# RV-8564-C2

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



- All-in-one-package solution
- Miniature ceramic package
- Very low power consumption
- Very tight frequency tolerance
- I<sup>2</sup>C Bus Interface (400 kHz) \*
- Programmable clock-output
- Low aging
- Time keeping mode down to 1.2 V
- Programmable alarm, timer and interrupt functions

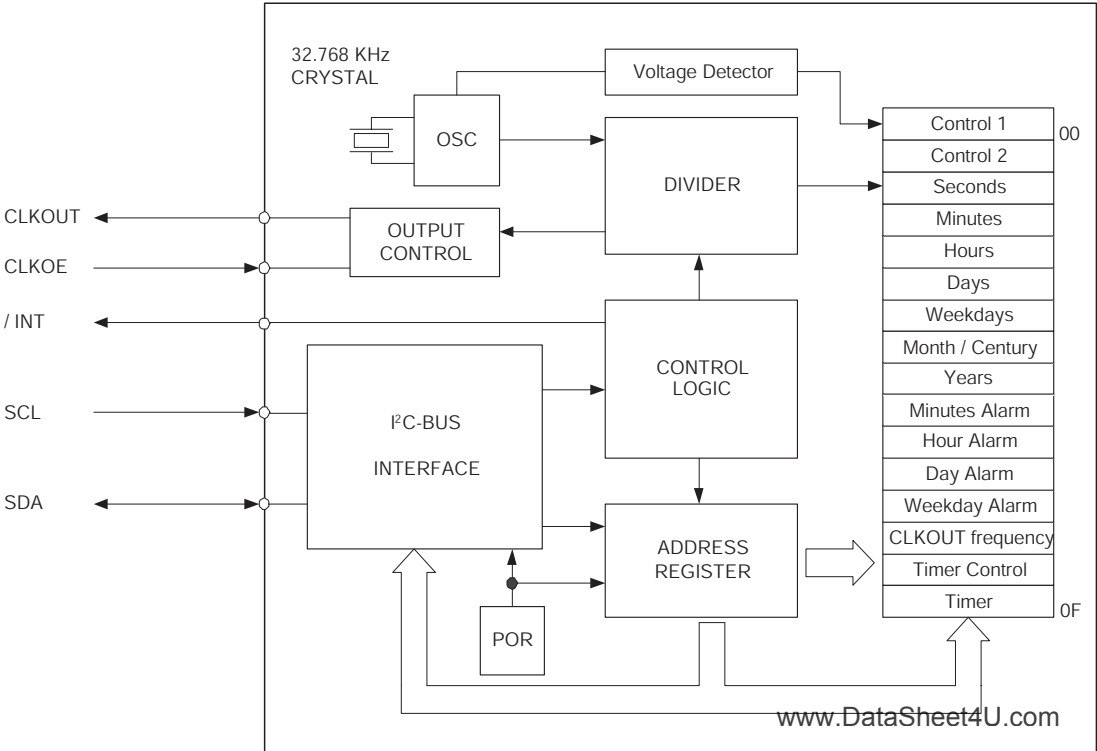
The RV-8564-C2 is a completely leadfree product.

### DESCRIPTION:

This very small SMD ceramic package has been specially designed to combine the 32.768 kHz crystal unit with the CMOS-based oscillator circuit. The calendar functions track year, month, date, and day with built-in century and leap-year flags. The clock functions tracks hour, minute, second, and hunderdth of second in 24- or 12-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 1'500 parts  
 10" (254 mm) reel with 3'500 parts

### BLOCKDIAGRAM:



**PIN DESCRIPTION:**

Terminal	Pin No.	Description
VDD	1	VDD
CLKOUT	2	Frequency output
SCL	4	Serial clock input
SDA	5	Data
GND	6	GND
/ INT	7	Interrupt output
CLKOE	10	FOUT output enable
	3, 8, 9	N.C.

**ELECTRICAL CHARACTERISTICS AT 25°C:**

Output frequency	<sup>1)</sup>		32768 / 1024 / 32 / 1	Hz
Frequency tolerance	<sup>2)</sup>	$\Delta F/F$	+/-15	ppm
Aging first year max.		$\Delta F/F$	+/-3	ppm
Turnover temperature		$T_0$	25 +/-5	°C
Frequency vs. temperature		$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2$ +/-10%	ppm

- 1) I<sup>2</sup>C Bus programmable
- 2) Tighter and wider frequency tolerances on request.

	Symbol	Condition	Min.	Typ.	Max	Unit
Supply voltage	V <sub>DD</sub>	I <sup>2</sup> C-Bus Active	1.8		5.5	V
Data holding voltage	V <sub>DD</sub>		1.2		5.5	V
Power current during access	I <sub>DD</sub>	f <sub>scl</sub> =400 kHz			800	µA
		f <sub>scl</sub> =100 kHz			200	µA
Current consumption backup mode	I <sub>DDO</sub>	f <sub>scl</sub> =0 Hz, V <sub>DD</sub> =3 V		275	700	nA
		f <sub>scl</sub> =0 Hz, V <sub>DD</sub> =2 V		250	650	nA

**ENVIRONMENTAL CHARACTERISTICS:**

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. 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

**PACKAGE, TERMINATIONS AND PROCESSING:**

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

All specifications subject to change without notice. 01.04



A COMPANY OF THE SWATCH GROUP

Headquarters:  
 Micro Crystal  
 Div. of ETA SA  
 Mühlestrasse 14  
 CH-2540 Grenchen  
 Switzerland  
 Tel. +41 32 655 82 82  
 Fax +41 32 655 82 83  
 sales@microcrystal.ch  
 www.microcrystal.ch

North American Sales Office:  
 Micro Crystal  
 A Div. of The Swatch Group (U.S.) Inc.  
 601 Campus Drive, Suite B4  
 Arlington Heights, IL 60004  
 USA  
 Tel. +1 847 818 9825  
 Fax +1 847 818 9915  
 sales@microcrystal.com  
 www.microcrystal.com