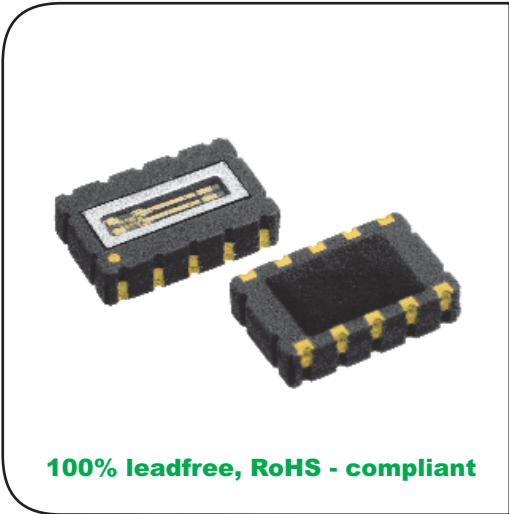
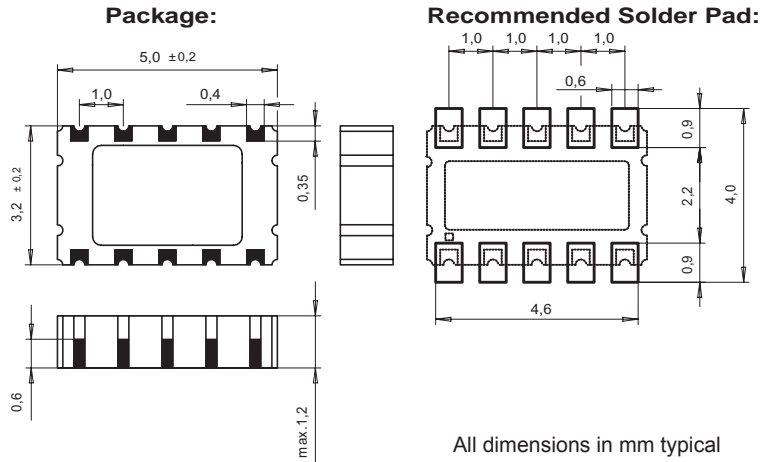


RV-3049-C2

Real Time Clock Module with SPI-Bus



DIMENSIONS



**Extremely Accurate RTC Module with embedded Xtal.
SPI Interface
Temperature Compensation**

Option A: Calibrated
Accuracy ± 3ppm / @ +25°C
Accuracy ± 4ppm / 0°C to +50°C
Accuracy ± 6ppm / -40°C to +85°C
Accuracy ± 8ppm / -40°C to +125°C

Option B: Default
Accuracy ± 3ppm / @ +25°C
Accuracy ± 5ppm / 0°C to +50°C
Accuracy ± 10ppm / -10°C to +60°C
Accuracy ± 25ppm / -40°C to +85°C
Accuracy ± 30ppm / -40°C to +125°C

Option C: not compensated

DESCRIPTION:

The RV-3049-C2 is a Real-Time-Clock Module with embedded Crystal. This RTC has 4-wire serial Interface (SPI-Bus) 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.

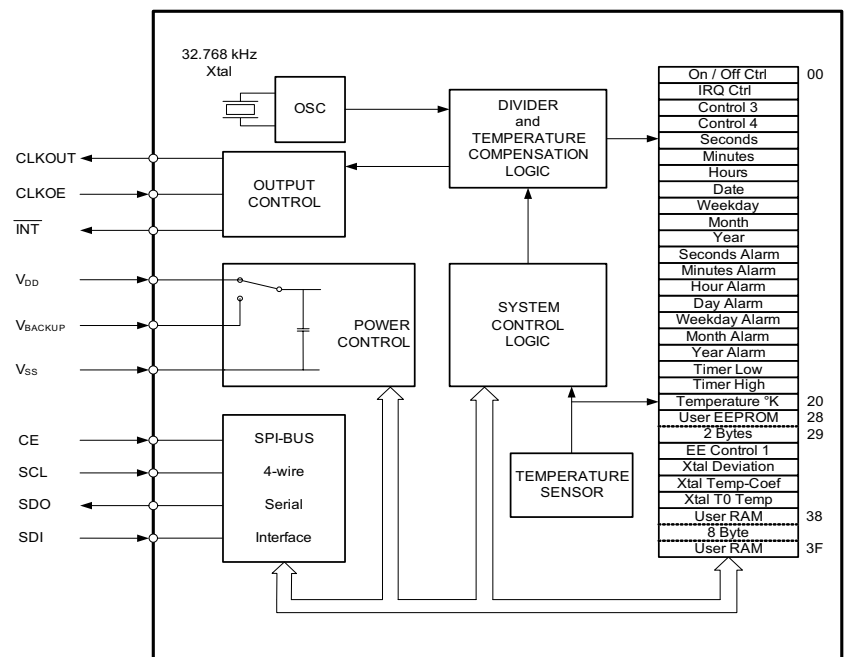
The calendar function tracks year and leap-year flags. The clock tracks second, minute and hour in 24-hour format. Programmable alarm setting and universal timer functions increase flexibility.

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		850	1000	nA
CLKOUT frequency		Progr.	32.768/1024/32/1			Hz
Frequency Tolerance	ΔF/F	@ 25°C		±10	±20	ppm
Aging first year	ΔF/F	@ 25°C			± 3	ppm
Freq.vs.Temp. Opt. C	ΔF/F _{OPR}	20 ≤ T ₀ ≤ 30	-0.035 ppm/°C · (T - T ₀) ² ±10%			ppm
Time accuracy Opt. A	Δt/t	-40 to +85°C			± 6	ppm
Time accuracy Opt. B	Δt/t	-40 to +85°C			± 25	ppm

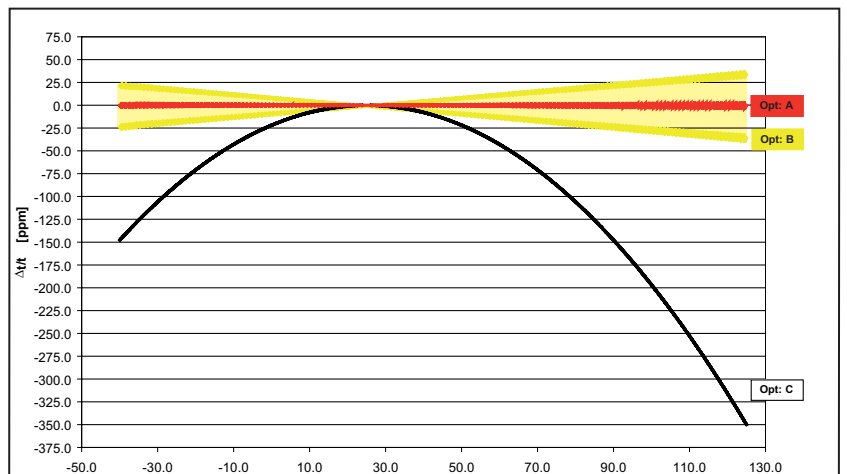
ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. range		-40 to +85°C	
Extended operating temp. range		-40 to +125°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

PACKAGE, TERMINATIONS AND PROCESSING:

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

FREQUENCY TEMPERATURE CHARACTERISTICS:



PIN CONNECTIONS TOP VIEW:

Product Marking #10 #6

#1 #5

Pin 1 Index

Pin	Connection
1	V _{DD} Power Supply Voltage
2	CLKOUT Frequency Output
3	CS Chip select
4	SCL Serial Clock Input
5	SDO Serial Data Output
6	V _{SS} Ground
7	INT Interrupt Output
8	V _{BACKUP} Backup Supply Voltage
9	SDI Serial Data Input
10	CLKOE CLK Output Enable

All specifications subject to change without notice. 04.09



Micro Crystal AG
Mühlestrasse 14
CH-2540 Grenchen
Switzerland

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