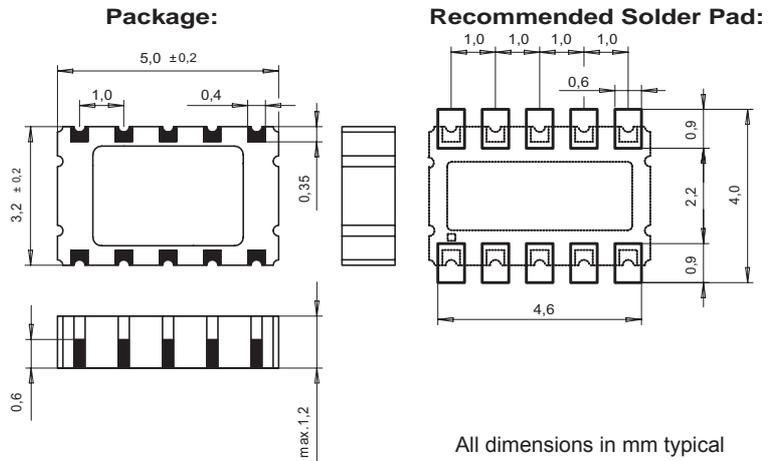


RV-3029-C2

Real Time Clock Module with I²C-Bus



DIMENSIONS



**Extremely Accurate RTC Module with embedded Xtal.
I²C 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-3029-C2 is a Real-Time-Clock Module with embedded Crystal. This RTC has an I²C Bus (2-wire Serial-Interface) 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.

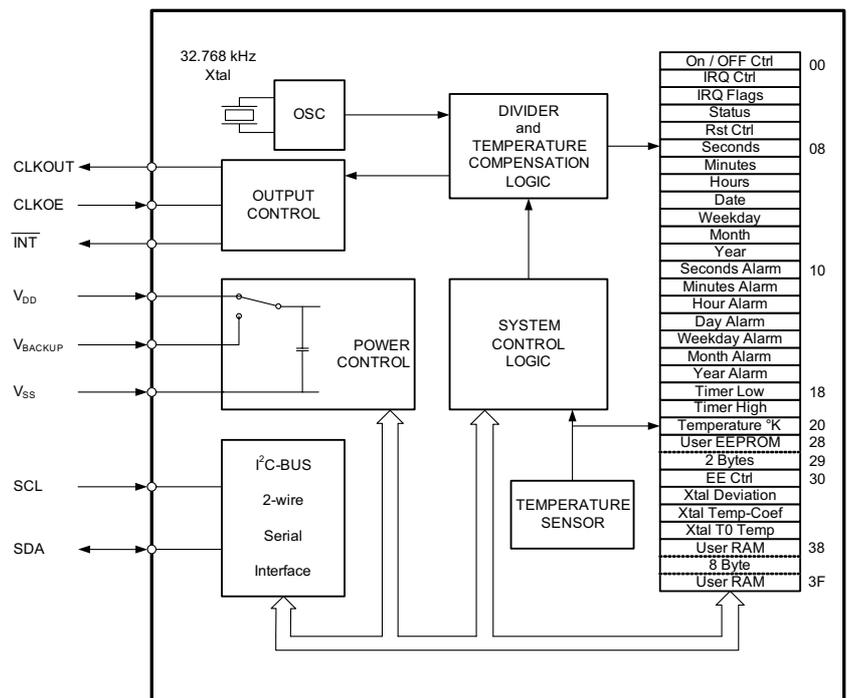
Beside standard RTC functions, it includes a Backup-Battery Input with internal switchover function, a programmable Trickle-charge circuitry, an integrated Temperature Sensor with digital-output and offers 8 Bytes RAM and 2 Bytes EEPROM for customer's application.

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
- 10" (254 mm) reel with 2'500 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

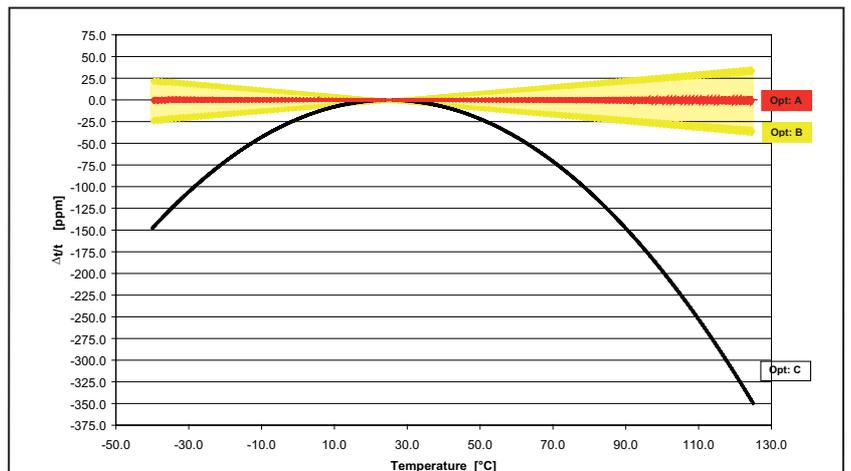
ENVIRONMENTAL CHARACTERISTICS:

		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	Pin	Connection
#10	1	V _{DD} Power Supply Voltage
#6	2	CLKOUT Frequency Output
	3	N.C. not connected
	4	SCL Serial Clock Input
	5	SDA Serial Data
	6	V _{SS} Ground
	7	INT Interrupt Output
	8	V _{BACKUP} Backup Supply Voltage
	9	N.C. not connected
	10	CLKOE CLK Output Enable

All specifications subject to change without notice. 10.08



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