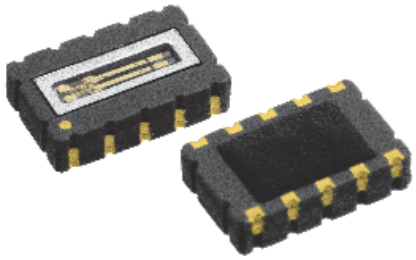
MICRO CRYSTAL SWITZERLAND

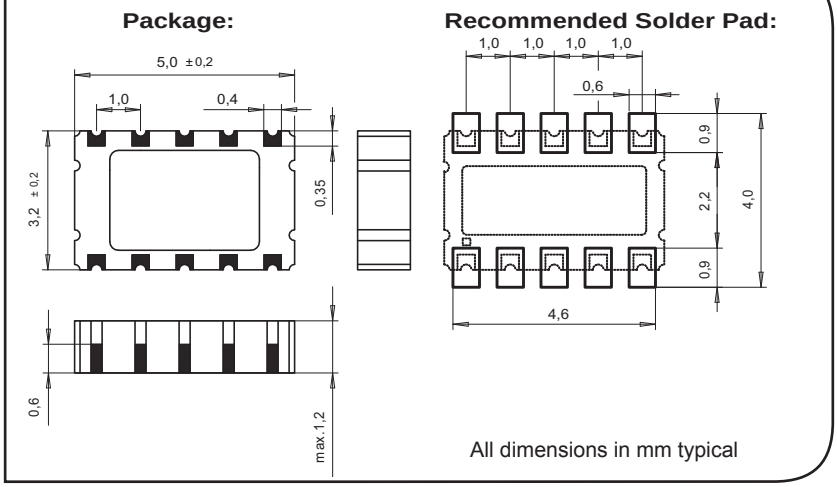
RV-3029-C2

Real Time Clock Module with I²C-Bus



100% leadfree, RoHS - compliant

DIMENSIONS



Extremely Accurate RTC Module with embedded Xtal.
I²C Interface
Temperature Compensation
Automotive qualified, according to AEC-Q200 Rev. C

Option A:	Calibrated	
Temperature	Time Deviation	
@ +25℃	± 0.26 s/day	± 3ppm
0℃ to +50℃	± 0.35 s/day	± 4ppm
-10℃ to +60℃	± 0.44 s/day	± 5ppm
-40℃ to +85℃	± 0.52 s/day	± 6ppm
-40℃ to +125℃	± 0.70 s/day	± 8ppm

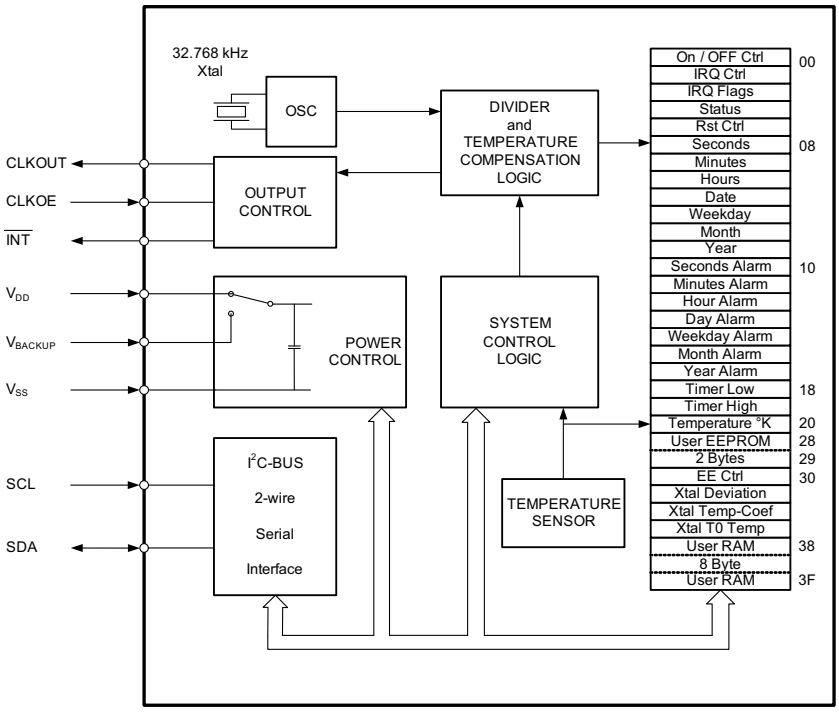
Option B:	Default	
Temperature	Time Deviation	
@ +25℃	± 0.26 s/day	± 3ppm
0℃ to +50℃	± 0.44 s/day	± 5ppm
-10℃ to +60℃	± 0.87 s/day	±10ppm
-40℃ to +85℃	± 2.17 s/day	±25ppm

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
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		800	1000	nA
CLKOUT frequency		Progr.	32.768/1024/32/1			Hz
Frequency Tolerance	ΔF/F	@ 25°C		±10	±20	ppm
Freq.vs.Temp.	$\Delta F/F_{TOPR}$	$20 \le T_0 \le 30$	$-0.035\ ^{ppm}/_{°C^2}\ (T - T_0)^2$ ±10%			ppm
Aging first year	ΔF/F	@ 25°C			± 3	ppm
Time accuracy Opt. A	Δt/t	@ 25°C			±0.26	s/day
		-40 to +85°C			±0.52	s/day
Time accuracy Opt. B	Δt/t	@ 25°C			±0.26	s/day
		-40 to +85°C			±2.17	s/day

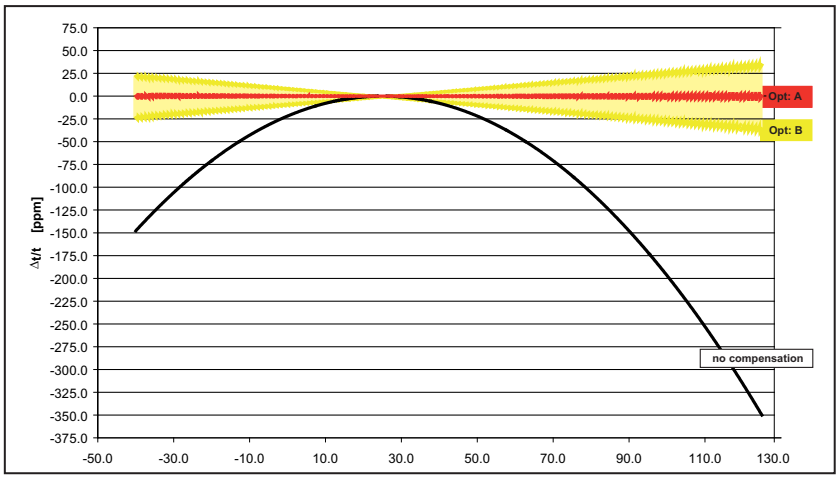
ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		–55 to +125°C	
TA Operating temperature range		–40 to +85°C	
TB Extended oper. 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

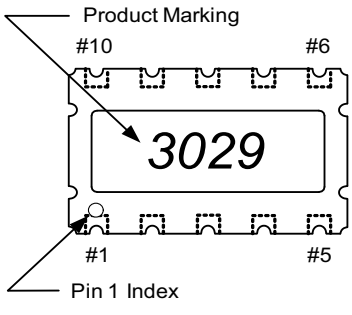
PACKAGE, TERMINATIONS AND PROCESSING:

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

FREQUENCY TEMPERATURE CHARACTERISTICS:



PIN CONNECTIONS TOP VIEW:



Pin	Connection	
1	V_{DD}	Power Supply Voltage
2	CLKOUT	Frequency Output
3	N.C.	not connected
4	SCL	Serial Clock Input
5	SDA	Serial Data
6	V_{SS}	Ground
7	$\overline{INT}$	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.

MICRO CRYSTAL SWITZERLAND

Micro Crystal AG
Mühlestrasse 14
CH-2540 Grenchen
Switzerland

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

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