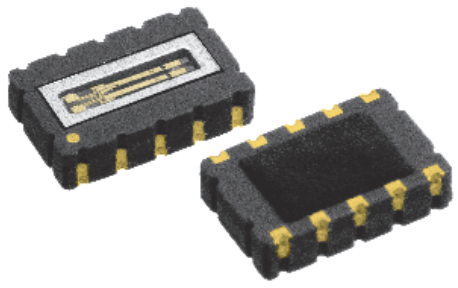
MICRO CRYSTAL SWITZERLAND

RV-8564-C2

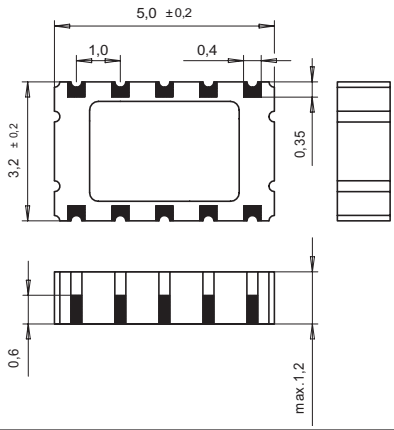
Real Time Clock Module with I²C Bus



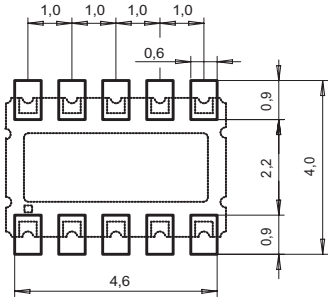
100% leadfree, RoHS - compliant

DIMENSIONS

Package:



Recommended Solder Pad:



All dimensions in mm typical

- Xtal integrated solution
- Miniature SMT ceramic package
- Ultra low power consumption
- Very tight frequency tolerance
- I²C Bus Interface (400 kHz) *
- Programmable Clock-output
- Low aging
- Time keeping mode down to 1.2 V
- Programmable alarm, timer and interrupt functions

DESCRIPTION:

This very small SMD ceramic package has been specially designed to combine the 32.768 kHz crystal unit with the CMOS-based oscillator and real-time-clock circuit.

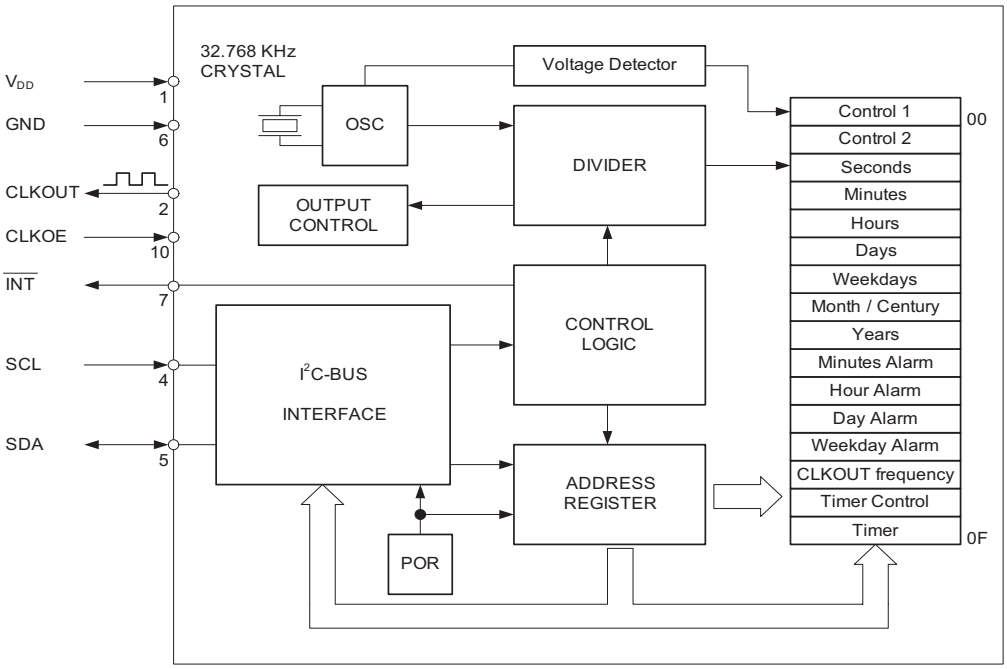
The calendar function tracks year, month, date, and day-of-the-week with built-in century and leap-year flags. The clock function tracks minute and second in 24-hour format. Programmable alarm setting and universal timer functions increase flexibility.

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

BLOCK DIAGRAM:



* The I²C Bus is a trademark of Philips Electronics N.V.

ELECTRICAL CHARACTERISTICS AT 25°C:

	Symbol	Condition	Min.	Typ.	Max	Unit
Supply voltage	V_{DD}	I^2C Bus Active	1.8		5.5	V
Supply voltage	V_{DD}	Time keeping	1.2		5.5	V
Power current during access	I_{DD}	fscl=400 kHz			800	µA
		fscl=100 kHz			200	µA
Current consumption Time keeping mode	I_{DDO}	fscl=0 Hz, V_{DD} 3 V		250	500	nA
		fscl=0 Hz, V_{DD} 2 V		225	450	nA
CLKOUT frequency		Programmable	32768/1024/32/1			Hz
Frequency tolerance	ΔF/F	@ 25°C	±10 / ±20 [1]			ppm
Aging first year max.	ΔF/F	@ 25°C	± 3			ppm
Frequency vs. temp.	$\Delta F/F_O$	$20 \le T_0 \le 30$	$-0.035\ ^{ppm}/_{°C^2}(T - T_0)^2 \pm 10\%$			ppm

1) Tighter and wider frequency tolerances on request.

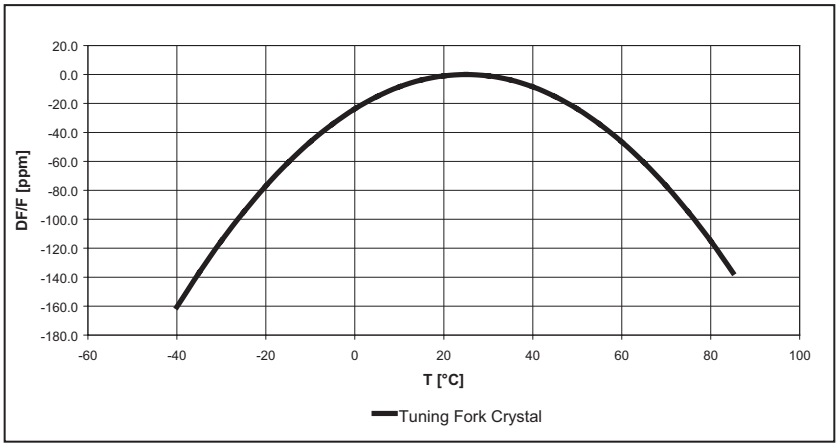
ENVIRONMENTAL CHARACTERISTICS:

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

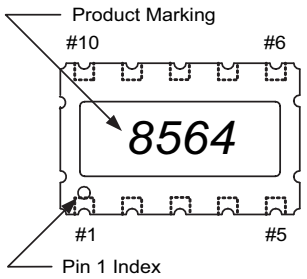
TERMINATIONS AND PROCESSING:

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:



Pin	Connection	
1	V_{DD}	Power Supply Voltage
2	CLKOUT	Frequency output
4	SCL	Serial clock input
5	SDA	Data
6	GND	Ground
7	$\overline{INT}$	Interrupt output
10	CLKOE	CLK output enable

Pins 3, 8, 9 are not connected.

All specifications subject to change without notice. 04.09

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