

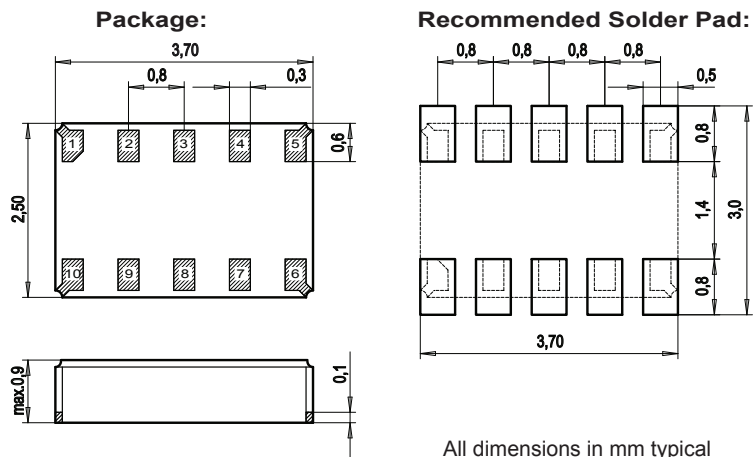
RV-8564-C3

Real Time Clock Module with I²C Bus



100% leadfree, RoHS - compliant

DIMENSIONS



Automotive qualified, according to AEC-Q200 Rev. C
 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 miniature 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.

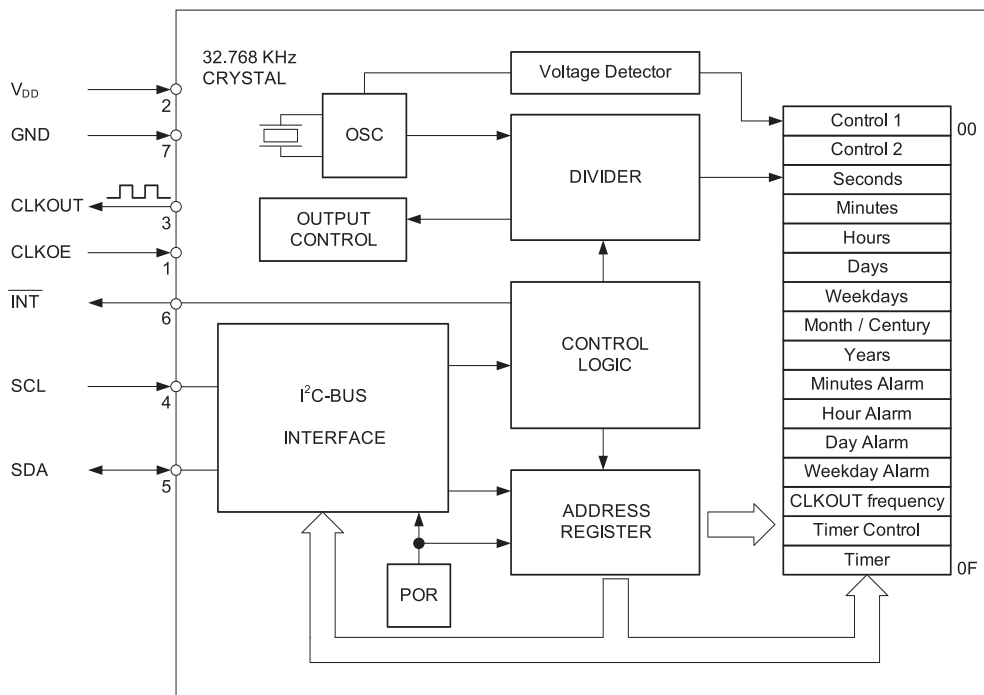
The calendar function tracks year, month, date, and day-of-the-week with built-in century and leap-year flags. The clock function tracks minute and second in 24-hour format. Programmable alarm setting and universal timer functions increase flexibility.

For pick-and-place equipment, the parts are available in 12 mm tape:

7" (178 mm) reel with 1'000 parts

7" (178 mm) reel with 3'000 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 ² C 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	$\Delta F/F$	@ 25°C	$\pm 10 / \pm 20$ ¹⁾			ppm
Aging first year max.	$\Delta F/F$	@ 25°C	± 3			ppm
Frequency vs. temp.	$\Delta F/F_0$	$20 \leq T_0 \leq 30$	$-0.035 \text{ ppm}/^\circ\text{C} \times (T - T_0)^2 \pm 10\%$			ppm

1) Tighter and wider frequency tolerances on request.

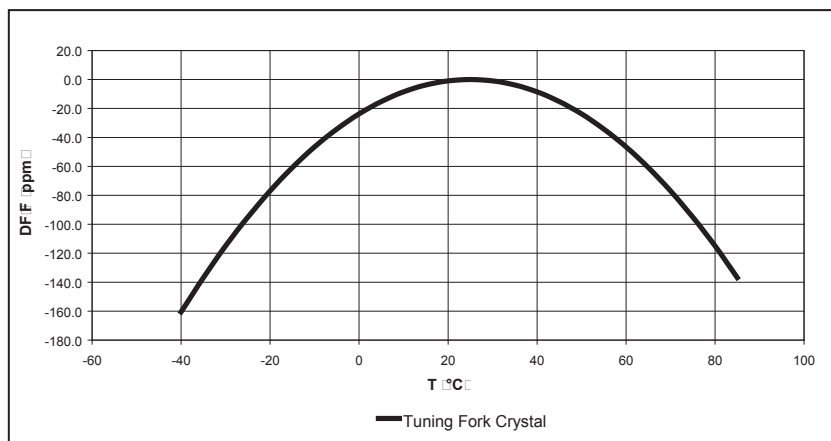
ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
TA Operating temperature 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

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	CLKOE CLK Output Enable
2	V_{DD} Supply Voltage
3	CLKOUT Clock Output
4	SCL Serial Clock Input
5	SDA Serial Data
6	$\overline{\text{INT}}$ Interrupt output
7	GND Ground
Pins 8, 9, 10 are not connected.	

All specifications subject to change without notice.



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