MICRO CRYSTAL SWITZERLAND

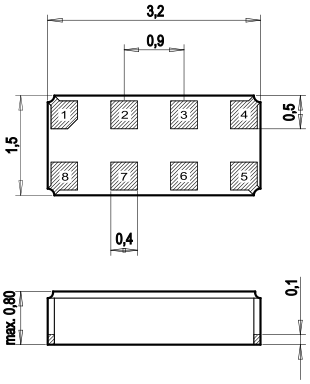
RV-4162-C7

Real Time Clock Module with I2C Bus

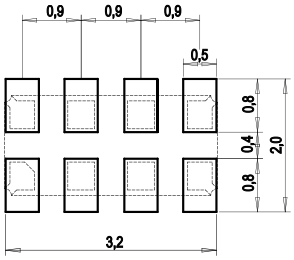
100% leadfree, RoHS - compliant

DIMENSIONS

Package:



Recommended Solder Pad:



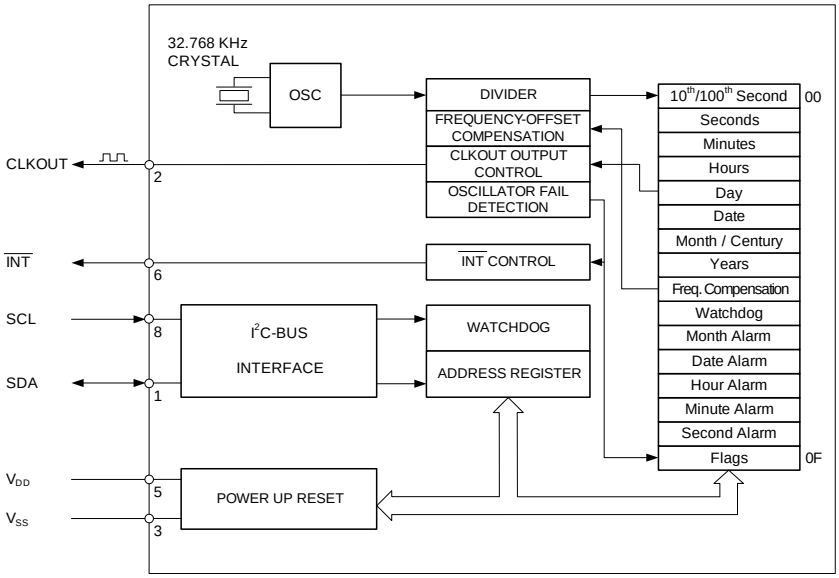
All dimensions in mm typical

Ultra small SMT ceramic package with integrated 32.768kHz Crystal
Automotive qualified, according to AEC-Q200 Rev. C
I²C Interface Address: D0h
Frequency-Offset Trimming Register
Programmable Alarm and Interrupt
Oscillator Fail Detection
Watchdog Timer
Programmable Clock-Output
Time keeping mode down to 1.0 V

DESCRIPTION:

This ultra small RTC Module has been specially designed for miniature and cost sensitive high volume applications.
The very small SMT ceramic package combines the 32.768 kHz crystal unit with the CMOS-based oscillator and real-time-clock circuitry. The clock function provides tenths/hundredths of seconds, seconds, minutes and hours. The calendar function tracks date, month, year and century with automatic leap year compensation. Programmable CLKOUT frequencies, alarm settings and watchdog function increase flexibility using this device.
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:



ELECTRICAL CHARACTERISTICS AT 25°C:

	Symbol	Condition	Min.	Typ.	Max	Unit
Supply voltage	V_{DD}	I^2C Bus Active	1.3		4.4	V
Supply voltage	V_{DD}	Time keeping	1.0		4.4	V
Current consumption during access	I_{DD}	fscl=400 kHz V_{DD} 3 V		35		µA
		fscl=400 kHz V_{DD} 2 V		20		µA
Current consumption Time keeping mode	I_{DDO}	fscl=0 Hz, V_{DD} 3 V		350	500	nA
		fscl=0 Hz, V_{DD} 1 V		270	400	nA
CLKOUT frequency		Programmable	32768...to...1			Hz
Frequency tolerance	ΔF/F	@ 25°C	±20 [1)]			ppm
Aging first year max.	ΔF/F	@ 25°C	± 3			ppm
Frequency vs. temp.	$\Delta F/F_O$	$20 \le T_0 \le 30$	$-0.035\ ^{ppm}/_{°C^2}(T - T_0)^2$ ±10%			ppm

1) Tighter and wider frequency tolerances on request.

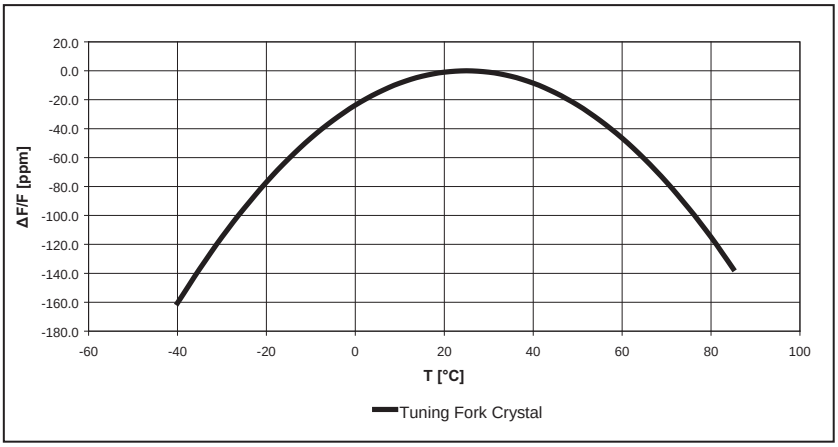
ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		–55 to +125°C	
TA Operating temperature range		–40 to +85°C	
Shock resistance	ΔF/F	5000 g, 0.3 ms, ½ sine	+/-5 ppm
Vibration resistance	ΔF/F	20 g / 10–2000 Hz	+/-5 ppm

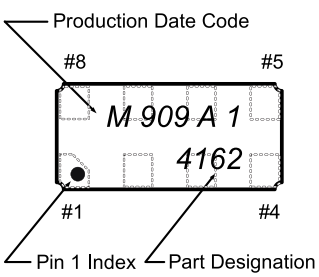
TERMINATIONS AND PROCESSING:

Package-Type	Termination	Processing
Ceramic 8-pin Metal Lid	For SMD mounting Au plated pads	Reflow soldering 260°C / 20 s max.

FREQUENCY TEMPERATURE CHARACTERISTICS:



PIN CONNECTIONS TOP VIEW:



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

All specifications subject to change without notice.

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