MICRO CRYSTAL SWITZERLAND

RV-8803-C7

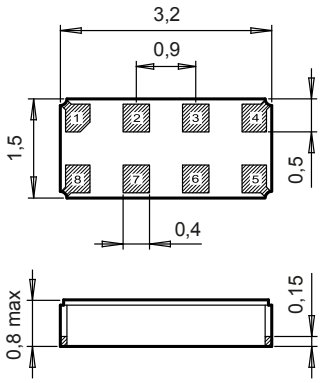
Real-Time Clock Module with I²C-Bus

lead-free

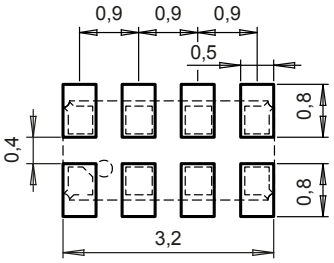
RoHS COMPLIANT

DIMENSIONS

Package:



Recommended Solder Pad:



Metal lid is connected to V_{SS} (pin #5)

All dimensions in mm typical

APPLICATIONS

IoT
Metering
Industrial
Automotive
Health Care
Wearables, Portables

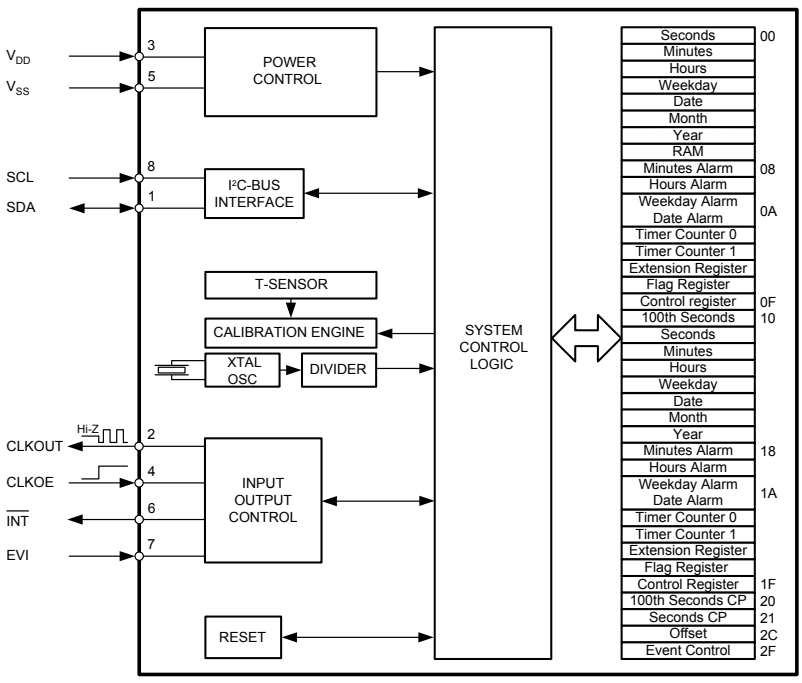
DESCRIPTION

The RV-8803-C7 is a SMD Real-Time Clock Module that incorporates an integrated CMOS circuit together with an XTAL. It operates under vacuum in a hermetically sealed ceramic package with metal lid.

FEATURES

Low power consumption: 240 nA @ 3 V.
Wide operating voltage range: 1.5 V to 5.5 V.
Time accuracy, temperature compensated: -40°C to +85°C, ±3 ppm.
+85°C to +105°C, ±7 ppm.
User programmable offset value.
Provides year, month, date, weekday, hours, minutes, seconds and 100th seconds.
Automatic leap year correction: 2000 to 2099.
Timer, Alarm and External Event Input with Time Stamp function.
Clock output frequencies: 32.768 kHz, 1024 Hz, 1 Hz.
I²C-bus interface: 400 kHz.
100% Pb-free, RoHS-compliant.
Automotive qualification according to AEC-Q104 available.

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS AT 25°C

More detailed information can be found in the Application Manual.

	Symbol	Condition	Min.	Typ.	Max	Unit
Supply voltage	V_{DD}	Temp. comp.	1.5		5.5	V
Current consumption Time keeping mode	I_{DDO}	I^2C-bus inactive, V_{DD} = 3 V		240	350	nA
Time accuracy	Δt/t	-40 to +85°C	±3			ppm
		+85 to +105°C	±7			
Aging first year max.	ΔF/F	@ 25°C	±3			ppm

ENVIRONMENTAL CHARACTERISTICS

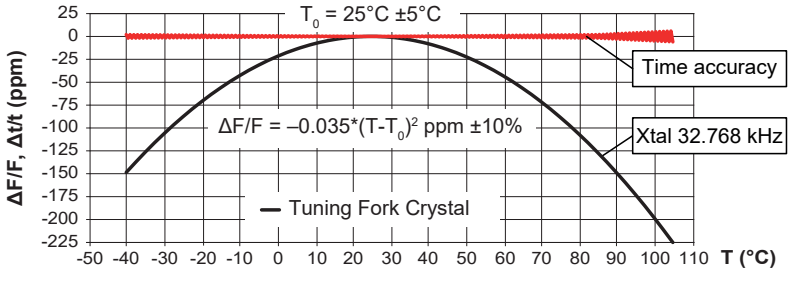
		Conditions	Max. Dev.
Storage temperature range		–55 to +125°C	
TA Operating temperature range		–40 to +85°C 1)	
Shock resistance	ΔF/F	5000 g, 0.3 ms, ½ sine	±5 ppm
Vibration resistance	ΔF/F	20 g / 10–2000 Hz	±5 ppm

1) Supports extended range from +85°C to +105°C with limitations.

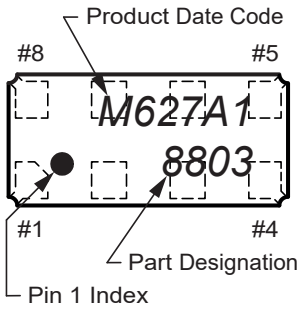
TERMINATIONS AND PROCESSING

Package	Termination	Processing
SON-8	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

FREQUENCY TEMPERATURE CHARACTERISTICS



PIN CONNECTIONS TOP VIEW



Pin	Connection	
1	SDA	Serial Data
2	CLKOUT	Clock Output
3	V_{DD}	Power Supply Voltage
4	CLKOE	Clock Output Enable
5	V_{SS}	Ground
6	$\overline{INT}$	Interrupt Output
7	EVI	Event Input
8	SCL	Serial Clock Input

ORDERING INFORMATION

RV - 8803 - C7 TA QC

RTC module

Product type

Package size
C7 = 3.2 x 1.5 x 0.8 mm

Temperature range
TA = -40 to +85°C (Standard)
(supports extended range from +85°C to +105°C with limitations)

Qualification
QC = Commercial Grade (Standard)
QA = Automotive Grade AEC-Q104

A unique part number will be generated for each product specification, i.e:	
20xxxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxxx-MG03	3'000 pcs (in 12 mm tape on 7" reel)

All specifications subject to change without notice.

MICRO CRYSTAL SWITZERLAND

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