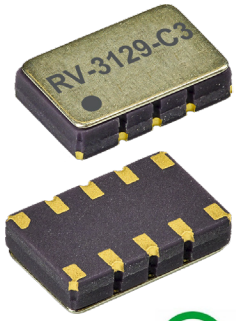
MICRO CRYSTAL SWITZERLAND

RV-3129-C3

Real-Time Clock Module with I²C-Bus

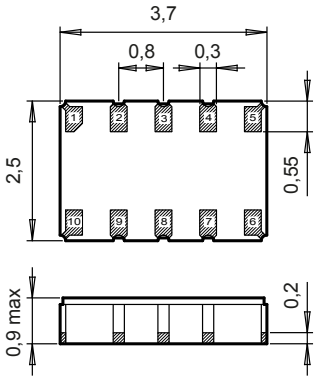


lead-free

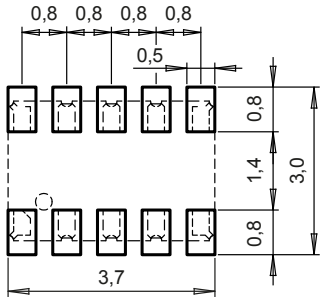
RoHS COMPLIANT

DIMENSIONS

Package:



Recommended Solder Pad:



Metal lid is connected to V_{SS} (pin #6)

All dimensions in mm typical

APPLICATIONS

IoT
Metering
Industrial
Portables
Automotive
Health Care

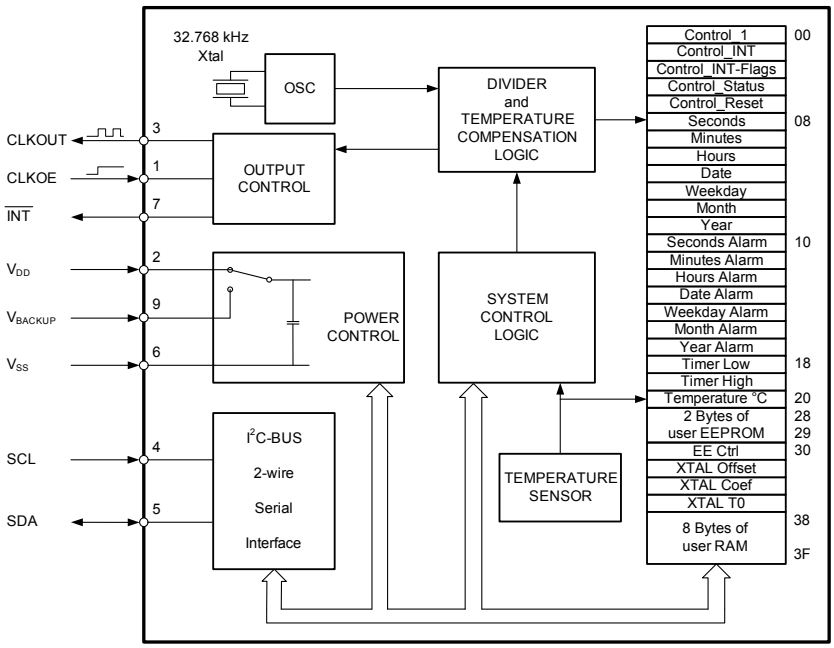
DESCRIPTION

The RV-3129-C3 is a SMT 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: 800 nA @ 3 V.
Wide operating voltage range: 1.3 V to 5.5 V.
Time accuracy, temp. compensated: Option A: -40 to +85°C, ±6 ppm,
Option B: -40 to +85°C, ±25 ppm.
Extended operating temperature range: -40 to +125°C.
Automatic Backup Switchover and Trickle Charger function.
Provides year, month, weekday, date, hours, minutes and seconds.
Timer and Alarm functions.
Clock output frequencies: 32.768 kHz, 1024 Hz, 32 Hz, 1 Hz.
2 bytes non-volatile user memory, 8 bytes user RAM.
I²C-bus interface: 400 kHz.
100% Pb-free, RoHS-compliant.
Automotive qualification according to AEC-Q200 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}	Time keeping	1.3		5.5	V
Supply voltage	V_{DD}	Thermom. active	2.1		5.5	V
Current consumption Time keeping mode	I_{DDO}	I^2C-bus inactive, V_{DD} = 3 V		800	1000	nA
Time acc. Opt. A / B	Δt/t	–40 to +85°C	±6 / ±25			ppm
Aging first year max.	ΔF/F	@ 25°C	±3			ppm

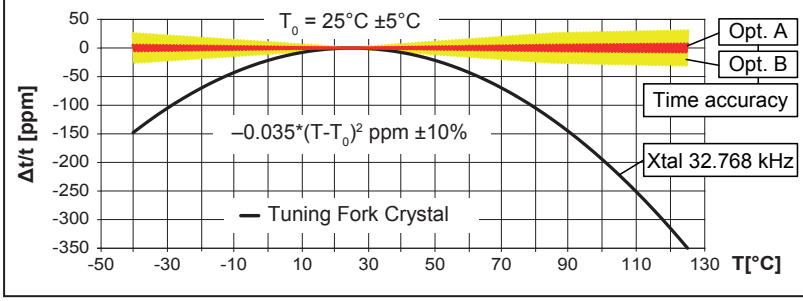
ENVIRONMENTAL CHARACTERISTICS

		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

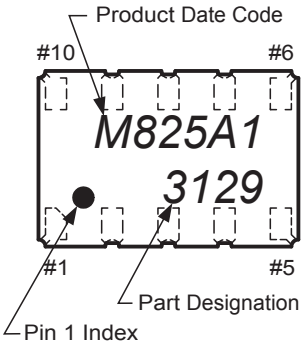
TERMINATIONS AND PROCESSING

Package	Termination	Processing
SON-10	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

FREQUENCY TEMPERATURE CHARACTERISTICS



PIN CONNECTIONS TOP VIEW



Pin	Connection	
1	CLKOE	Clock Output Enable
2	V_{DD}	Power Supply Voltage
3	CLKOUT	Clock Output
4	SCL	Serial Clock Input
5	SDA	Serial Data
6	V_{SS}	Ground
7	INT	Interrupt Output
8	NC	Not connected
9	V_{BACKUP}	Backup Supply Voltage
10	NC	Not connected

ORDERING INFORMATION

RV - 3129 - C3 Option A TA QC

RTC module

Product type

Package size
C3 = 3.7 x 2.5 x 0.9 mm

Time accuracy
Option A = ±6 ppm @ -40°C to +85°C
Option B = ±25 ppm @ -40°C to +85°C

Qualification
QC = Commercial Grade (Standard)
QA = Automotive Grade AEC-Q200

Temperature range
TA = -40 to +85°C (Standard)
TB = -40 to +125°C

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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