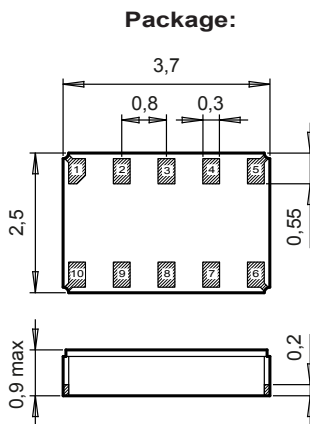


RV-8523-C3

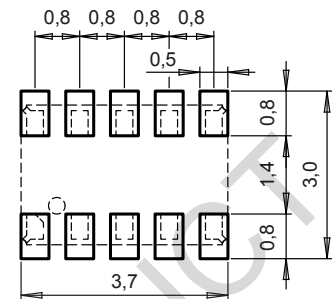
Real-Time Clock Module with I²C-Bus



DIMENSIONS



Recommended Solder Pad:



Metal lid is connected to V_{SS} (pin #7)

All dimensions in mm typical

APPLICATIONS

IoT
Metering
Industrial
Automotive
Health Care
Wearables, Portables

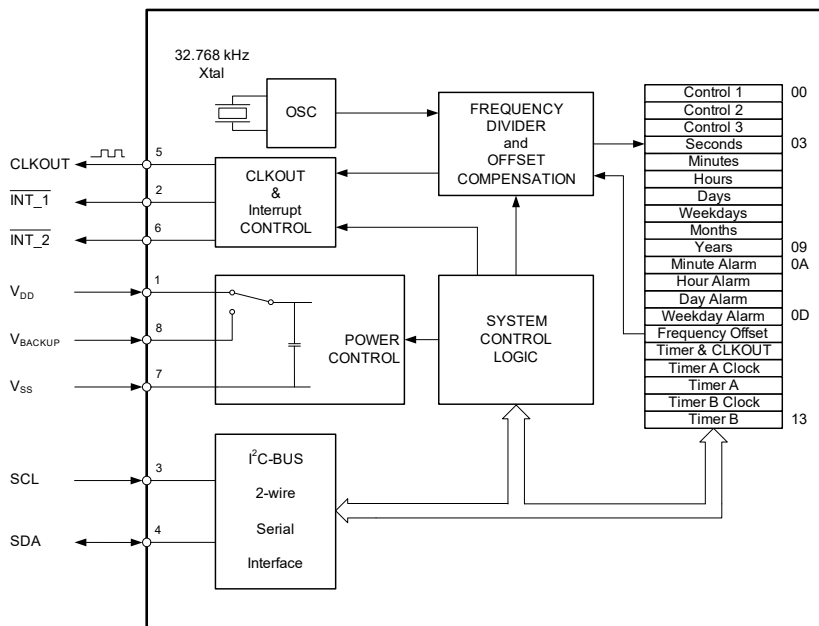
DESCRIPTION

The RV-8523-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: 130 nA @ 3 V.
- Wide operating voltage range: 1.2 V to 5.5 V.
- Time accuracy: ± 20 ppm @ 25°C.
- Operating temperature range: -40 to +85°C.
- User programmable offset value.
- Automatic Backup Switchover function.
- Provides year, month, date, weekday, hours, minutes and seconds.
- Automatic leap year calculation: 2000 to 2099.
- Timer, Alarm and Watchdog functions.
- Clock output frequencies: 32.768 kHz to 1 Hz.
- I²C-bus interface: 1 MHz Fast-mode Plus (Fm+).
- 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}	I ² C-bus active	1.6		5.5	V
Supply voltage	V_{DD}	Time keeping	1.2		5.5	V
Current consumption Time keeping mode	I_{DDO}	I ² C-bus inactive, $V_{DD} = 3\text{ V}$		130	180	nA
CLKOUT frequency	F_{CLKOUT}	Programmable	32768 to 1			Hz
Freq. tol. typ./max.	$\Delta F/F$	@ 25°C	$\pm 10 / \pm 20$ ¹⁾			ppm
Aging first year max.	$\Delta F/F$	@ 25°C	± 3			ppm

1) Tighter frequency tolerances on request.

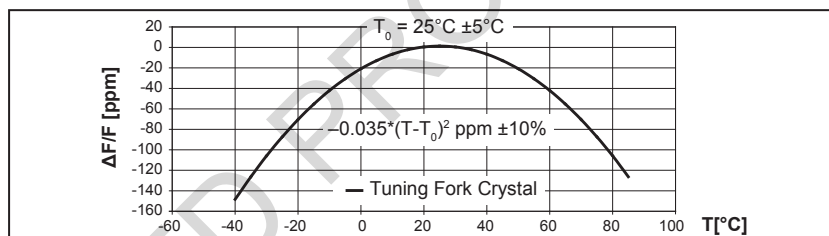
ENVIRONMENTAL CHARACTERISTICS

		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	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	V_{DD} Power Supply Voltage
2	$\overline{INT_1}$ Interrupt_1 Output
3	SCL Serial Clock Input
4	SDA Serial Data
5	CLKOUT Clock Output
6	$\overline{INT_2}$ Interrupt_2 Output
7	V_{SS} Ground
8	V_{BACKUP} Backup Supply Voltage
9	NC Not connected
10	NC Not connected

ORDERING INFORMATION

RV - 8523 - C3 TA QC	
RTC module	Qualification
Product type	QC = Commercial Grade (Standard)
	QA = Automotive Grade AEC-Q200
Package size	Temperature range
C3 = 3.7 x 2.5 x 0.9 mm	TA = -40 to +85°C (Standard)
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.



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