

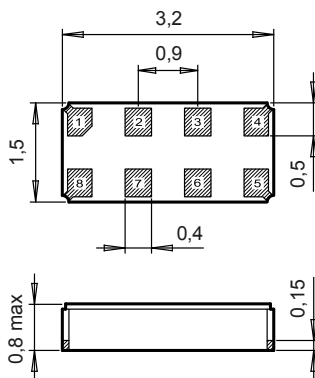
RV-3028-C7

Extreme Low Power RTC Module

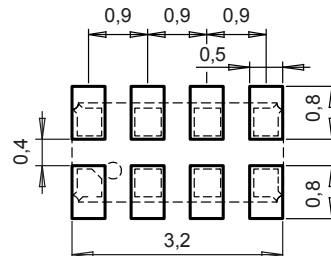


DIMENSIONS

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

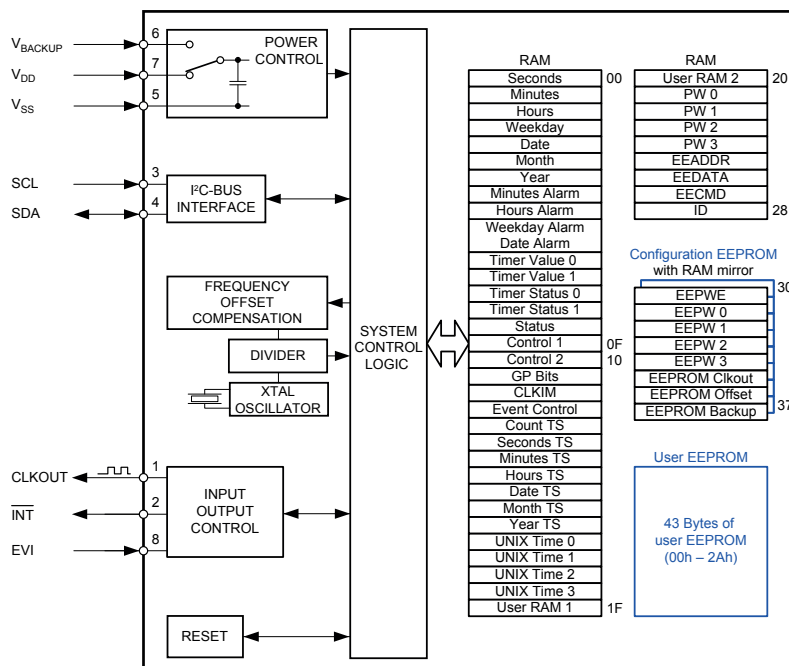
DESCRIPTION

The RV-3028-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

Extreme low power consumption: 45 nA @ 3 V.
Wide operating voltage range: 1.1 V to 5.5 V.
Time accuracy: Factory calibrated to ± 1 ppm @ 25°C
User progr. password for write protection of time and configuration.
Non-volatile configuration settings with user programmable offset value.
Automatic Backup Switchover and Trickle Charger function.
Provides year, month, date, weekday, hours, minutes, seconds, UNIX.
Timer, Alarm and External event input with Time Stamp function.
Clock output: 32.768 kHz, 8192 Hz, 1024 Hz, 64 Hz, 32 Hz, 1 Hz.
43 bytes non-volatile user memory, 2 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	1.1		5.5	V
Supply voltage	V_{DD}	I ² C-bus active	1.2		5.5	V
Current consumption Time keeping mode	I_{DDO}	I ² C-bus inactive, $V_{DD} = 3\text{ V}$		45	60	nA
CLKOUT frequency	F_{CLKOUT}	Programmable	32768...to...1			Hz
Time accuracy	$\Delta t/t$	@ 25°C	± 1			ppm
Aging first year max.	$\Delta F/F$	@ 25°C	± 3			ppm

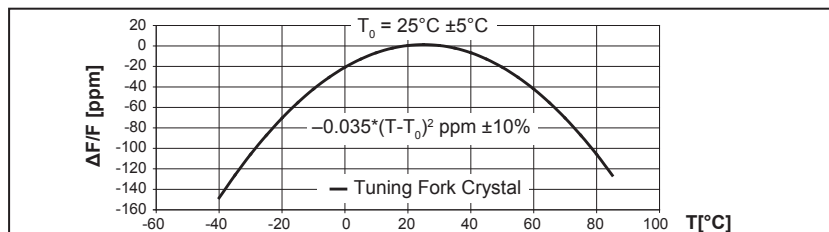
ENVIRONMENTAL CHARACTERISTICS

		Conditions	Max. Dev.
Storage temperature range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C	
Shock resistance	$\Delta F/F$	5000 g, 0.3 ms, 1/2 sine	± 5 ppm
Vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	± 5 ppm

TERMINATIONS AND PROCESSING

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

FREQUENCY TEMPERATURE CHARACTERISTICS



PIN CONNECTIONS TOP VIEW

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

ORDERING INFORMATION

RV - 3028 - C7 TA QC	
RTC module	Qualification
Product type	QC = Commercial Grade (Standard)
	QA = Automotive Grade AEC-Q200
Package size	Temperature range
C7 = 3.2 x 1.5 x 0.8 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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