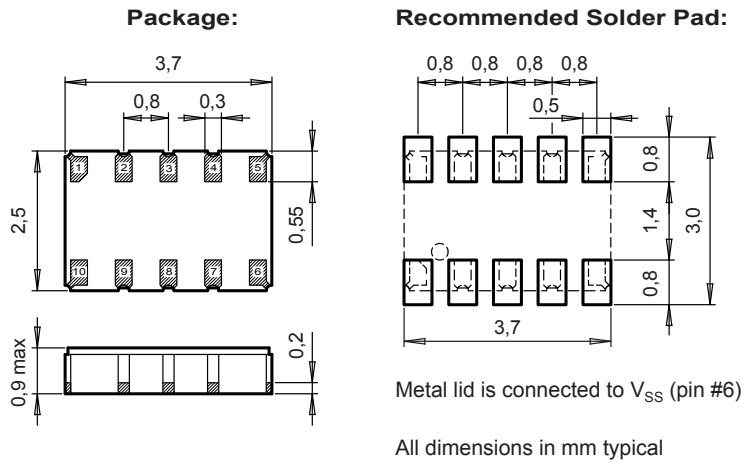


RV-1805-C3

Extreme Low Power RTC Module



DIMENSIONS



APPLICATIONS

IoT
 Metering
 Industrial
 Health Care
 Wearables, Portables

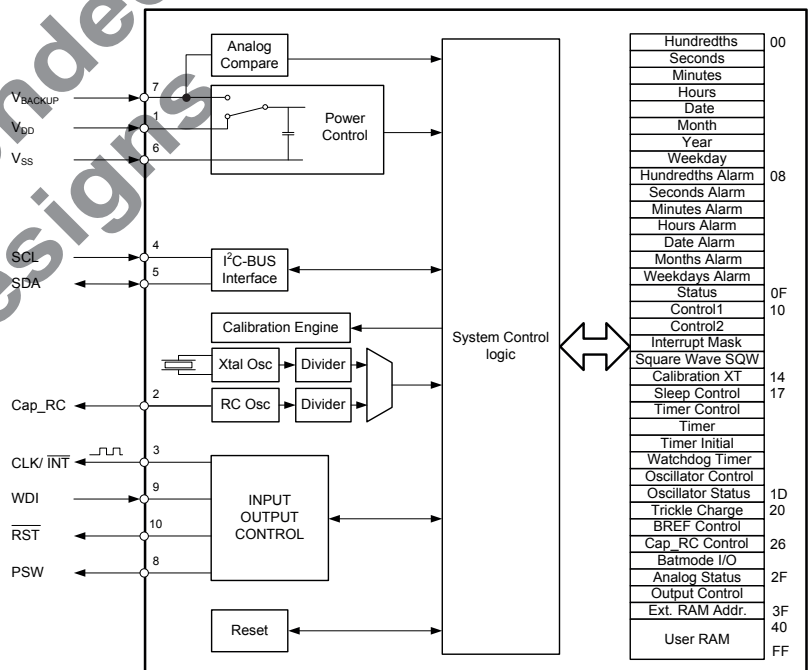
DESCRIPTION

The RV-1805-C3 is an 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: XTAL mode, 60 nA @ 3 V. RC mode, 17 nA @ 3 V. RC autocalibration mode, 22 nA @ 3 V.
- Operating voltage range: 1.5 V to 3.6 V.
- Time accuracy: Factory calibrated to ± 2 ppm @ 25°C.
- User programmable offset value.
- Automatic Backup Switchover and Trickle Charger function.
- Provides year, month, date, weekday, hours, minutes, seconds, 100th.
- Timer, Alarm, External event and Watchdog functions.
- Clock output frequencies: 32.768 kHz to 1/60 Hz.
- 256 bytes user RAM.
- I²C-bus interface: 400 kHz.
- 100% Pb-free, RoHS-compliant.
- Qualification according to AEC-Q200.

BLOCK DIAGRAM



Not Recommended for New Designs

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	1.5		3.6	V
Current consumption Time keeping mode	I_{DDO}	XTAL mode, V_{DD} 3 V		60	130	nA
		RC mode, V_{DD} 3 V		17	25	
		RC autocal., V_{DD} 3 V		22	32	
CLKOUT frequency	F_{CLKOUT}	Programmable	32'768 to 1/60			Hz
Time accuracy	$\Delta t/t$	@ 25°C	±2			ppm
Aging first year max.	$\Delta F/F$	@ 25°C	±3			ppm

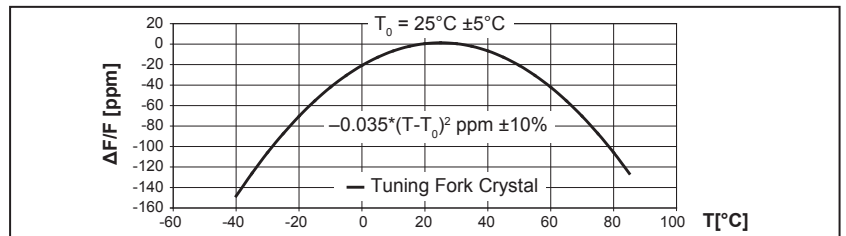
ENVIRONMENTAL CHARACTERISTICS

	Conditions	Max. Dev.
Storage temp. range	-55 to +125°C	
TA Operating temperature range	-40 to +85°C	
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	Cap_RC Capacitor RC Osci.
3	CLK/INT̄ Clock Output/Interrupt
4	SCL Serial Clock Input
5	SDA Serial Data
6	V_{SS} Ground
7	V_{BACKUP} Backup Supply Voltage
8	PSW Power Switch Output
9	WDI Watchdog Input
10	RST̄ Reset Output

ORDERING INFORMATION

RV - 1805 - C3 TA QC	Qualification
RTC module	QC = Commercial Grade (Standard)
Product type	Temperature range
Package size	TA = -40 to +85°C (Standard)
C3 = 3.7 x 2.5 x 0.9 mm	

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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