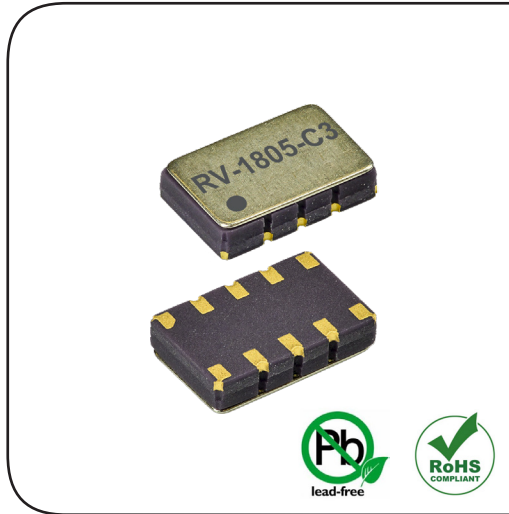
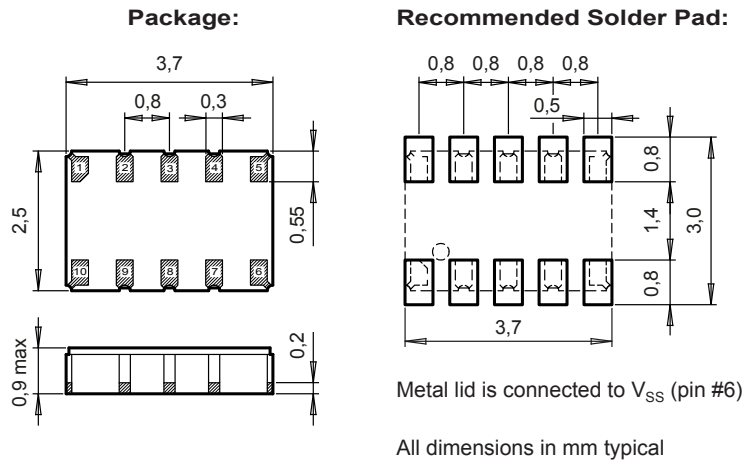


RV-1805-C3

Extreme Low Power RTC Module



DIMENSIONS



APPLICATIONS

IoT
 Metering
 Industrial
 Health Care
 Wearables, Portables

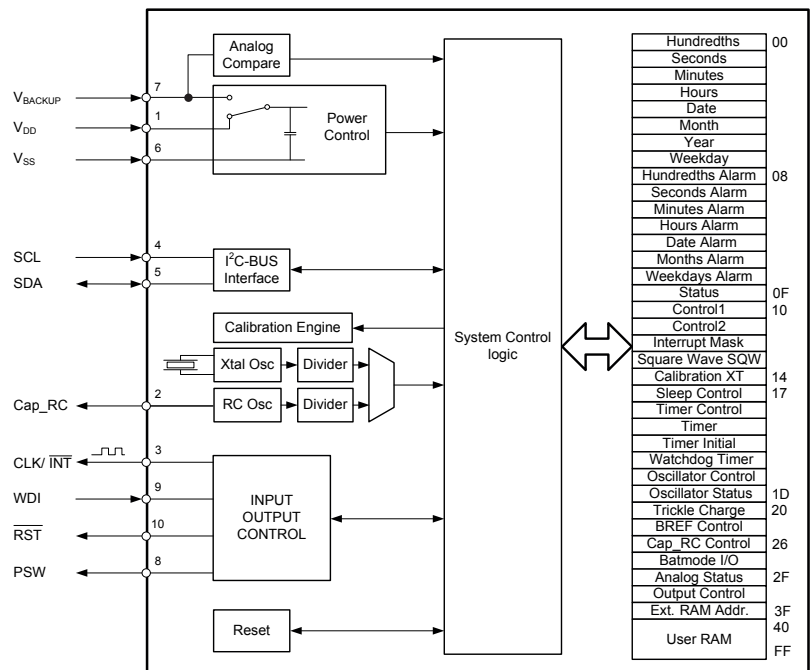
DESCRIPTION

The RV-1805-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

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



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 |

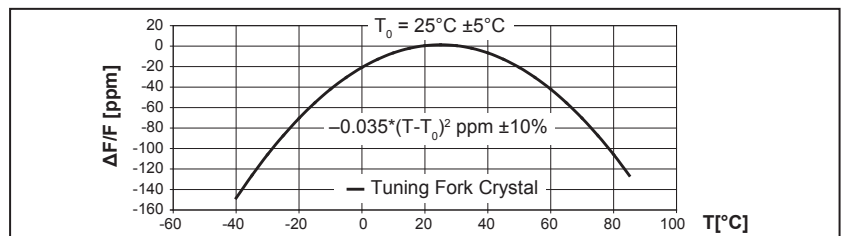
ENVIRONMENTAL CHARACTERISTICS

| | 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, 1/2 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/INT 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 | RST 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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