Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Rubidium Specification

Part No. + Packaging: ***LFRBXO059244Bulk***

Description

- The IQRB-1 rubidium oscillator is a sub-miniature atomic clock exhibiting normal rubidium oscillator performance in a 65cc OCXO style package.
  This rubidium oscillator has 100 times less drift than OCXOs and with short term stability of 0.008ppb/s at 100s, this rubidium oscillator provides significant improvements in performance over OCXOs.
- Model IQRB-1
- Model Issue number 3

Frequency Parameters

- Frequency 10.0MHz
- Frequency Tolerance ±0.05ppb
- Tolerance Condition @ 25°C
- Frequency Stability ±1.50ppb
- Operating Temperature Range -30.00 to 65.00°C
- Short Term Stability (AVAR):
  1s 0.08ppb
  10s 0.03ppb
  100s 0.008ppb
- Ageing:
  Day 0.005ppb
  Month 0.05ppb
- Magnetic Field Sensitivity, DC (±2 Gauss): ±0.04ppb/Gauss max
- Temperature Coefficient (ambient): $5x10^{-10}$ (0 to 50°C)
- Retrace: ±0.02ppb max

Electrical Parameters

- Supply Voltage 12.0V
- Note: The device will operate over the Supply Voltage Range 12V to 18V.
- Input Power (@ 25°C): 6W @ 12V, 1.2A max.
- Start-Up Current (at room temperature): 1.5A for 10s max
- Warm Up Time: 5mins to lock @ 25°C.
- Lock Monitor: Pin 2 is high (5V) when out of lock and low (0V) when locked.

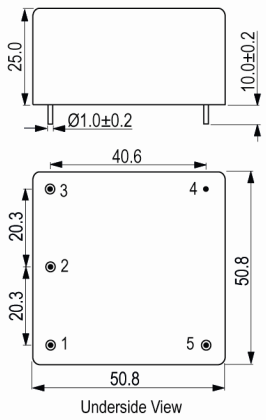
Frequency Adjustment

- Pulling ±5ppb min
- Control Voltage 2.5V ±2.5V
- Input Impedance 10kΩ min
- Control Voltage Input Current (Pin 1 swept from 0V to 5V): 40uA typ
- Control Voltage Input Capacitance (Pin 1): 5pF typ
- Note: The oscillator will detect if no control voltage is applied to Pin 1 and will automatically set the control voltage internally to 2.5V. Further when the oscillator is locked Pin 1 (frequency control) is set to internal default voltage 2.5V. However if a voltage is applied (even GND) to Pin 1 then the oscillator will switch to accept an external control voltage input.

Output Details

- Output Compatibility Sine
- Drive Capability 50Ω
- Output Levels: 7dBm min, 9.5dBm typ, 13dBm max

Outline (mm)



Pin Connections
1. Frequency Control
2. Lock Monitor
3. Output
4. GND
5. $+V_S$

Sales Office Contact Details:

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Noise Parameters

- Phase Noise (typ):
  -67dBc/Hz @ 1Hz
  -95dBc/Hz @ 10Hz
  -127dBc/Hz @ 100Hz
  -140dBc/Hz @ 1kHz
- Harmonics: -40dBc max

Environmental Parameters

- Storage Temperature Range: -55 to 85°C
- Base Plate Temperature: -30 to 85°C
- Case Temperature (after 1hr, ambient temp 25°C, no ventilation): 45°C max
- Mechanical Shock: IEC 60068-2-27, Test Ea: Acceleration of 50G peak amplitude for 11ms duration.
- Vibration: IEC 60068-2-06, Test Fc: 10Hz-55Hz 1.5mm displacement, 55Hz-500Hz 10G acceleration.
- Atmospheric Pressure: -60m to 4000m: $1x10^{-13}$mbar max
- EMI: Compliant to FCC Part 15, Class B.

Manufacturing Details

- MTBF (Stationary): Approx 100000hrs
- Note: In regard to PCB layout; the oscillator base plate runs hot and it is not a good idea to place components on the opposite side of the PCB to the rubidium module as the base plate can be 85°C depending upon environmental conditions. We recommend leaving about a 5mm minimum gap around the rubidium module wherever possible.

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACh Status Non-Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Bulk Bulk pack
  Pack Size: 1
- *Alternative packing option available*

Technical Notes

- *RoHS Compliance: 5/6*

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