

ISSUE 1; January 2018

Description

- A low noise and low power OCVCSO (Oven Controlled, Voltage controlled, SAW Oscillator). The 800MHz signal is generated from a 400MHz fundamental frequency, followed by a low noise frequency doubler. It is designed for lab environment (test equipment, shelter, ground based military equipment, etc.). Manufactured for us by Rakon.



Frequency Parameters

- Frequency: 800.0MHz
- Frequency Tolerance Max: ± 0.50 ppm
- Tolerance Condition: @25°C
- Frequency Stability: ± 3.00 ppm to ± 4.00 ppm
- Ageing: ± 1 ppm max in 1st year, ± 6 ppm max in 10yrs
- Frequency Stability: Across maximum operating temperature range (-25 to 60°C): $< \pm 4$ ppm
Across reduced temperature range (0 to 50°C): $< \pm 3$ ppm
- Frequency Tolerance: ± 0.2 ppm typical
- G-Sensitivity (On each axis): 1ppb/g typ, 2ppb/g max

Electrical Parameters

- Supply Voltage: 5.0V ± 0.25 V
- Absolute Maximum Rating, Supply Voltage: +6V
- Warm Up Time (± 1 ppm of freq after 1hr at 25°C): < 3 minutes
- Power Consumption: Warm Up: < 2.5 W
Steady State (@25°C): < 1.5 W

Frequency Adjustment

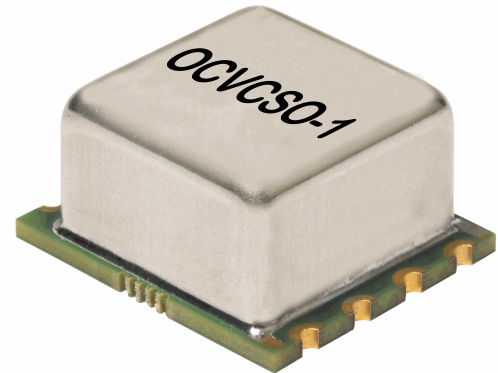
- Pulling: ± 6 min to ± 10 ppm max
- Control Voltage: 2.5V ± 2.0 V
- Input Impedance: > 10 kohms
- Slope: Positive

Operating Temperature Ranges

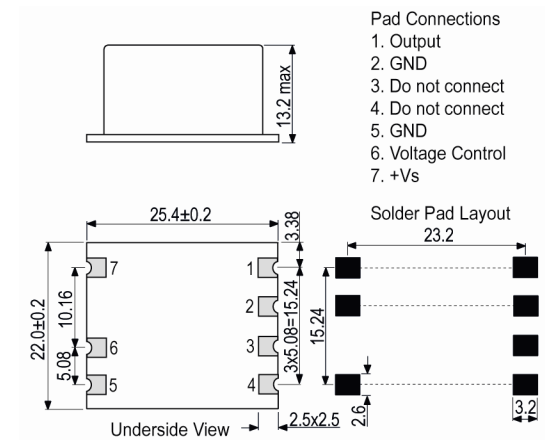
- 0 to 50°C
- 25 to 60°C

Output Details

- Output Compatibility: Sinewave
- Drive Capability: 50ohms
- Output level: 8dBm ± 2 dBm
- Impedance at the RF output: $< 2.0:1$ VSWR
- Load impedance necessary to achieve specified performance (50ohms all phases): $< 1.3:1$ VSWR



Outline (mm)



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Noise Parameters

- Phase Noise dBc/Hz
 - Offset Typ Max
 - @1kHz -137 -130
 - @10kHz -160 -155
 - @1MHz -167 -165
- Phase Jitter
 - 10Hz to 100MHz: 100fs typ, 200fs max
 - 10kHz to 100MHz: 10fs max
- Harmonic Distortion (all subharmonics, 2nd and 3rd harmonics): -40dBc typ, -30dBc max
- Spurious (Non Harmonic):-80dBc max

Environmental Parameters

- Operational Temperature Range (with reduced performance): -40 to 60°C
- Storage Temperature Range: -40 to 85°C
- Shock: As per MIL-PRF-28800F, Class 3, test equipment
- Random Vibration: As per MIL-PRF-28800F, Class 3, test equipment

Manufacturing Details

- Reliability Ref MIL-HDBK-217F, Ground fixed, at 25°C
 - MTBF: 19 years
 - FIT:6018 fails/billion hours
- RoHS Reflow 245°C max for 30secs max

Compliance

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

Packaging Details

- Pack Style: Bulk Loose in bulk pack
- Pack Size: 1

Electrical Specification - maximum limiting values 5.00V ±0.25V

Frequency Min	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
800.0MHz	-25 to 60	±4.00	-	-	-
	0 to 50	±3.00	-	-	-

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