



ISSUE 7; April 2013 - RoHS 2011/65/EU



Description

- Surface mount temperature compensated voltage controlled crystal oscillators for medium to high volume applications where small size and high performance are prerequisites. Manufactured for us by Rakon utilising their Pluto™ ASIC technology and capable of sub 0.3ppm performance over an extended temperature range. Its ability to function down to a supply voltage of 2.4V and low power consumption makes it particularly suitable for mobile applications.
- Option A (standard):
Ageing adjustment by means of external Control Voltage applied to pad 1
Range (frequency ≤ 20MHz) ≥ ±5ppm
Range (frequency > 20MHz) ≥ ±7ppm
Linearity ≤ 2%
Slope Positive
Input resistance ≥ 100kΩ
Modulation bandwidth ≥ 2kHz
Standard control voltage range 1.5V±1V
- Option B:
No frequency adjustment
Initial Calibration ≤ ±1.0ppm

Frequency Range

- Frequency 52.00MHz

Supply Voltage

- Voltage 3.3V ±10%

Ageing

- Ageing ±1ppm max in 1st year (see Note 1)

Output Compatibility & Load

- Output Compatibility HCMOS
- Drive Capability 15pF max

Frequency Stabilities

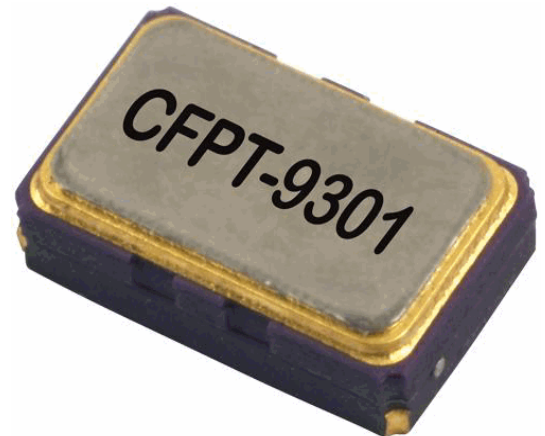
- Frequency Stability ±0.20ppm

Operating Temperature Ranges

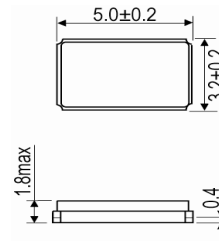
- -20 to 70°C
- -40 to 85°C

Frequency Parameters

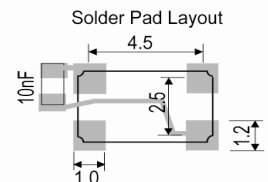
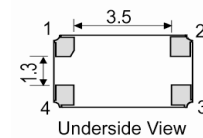
- Load Variation (@ ±5pF change):
Frequency <20MHz: ±0.2ppm typ
Frequency 20MHz to <35MHz: ±0.3ppm typ
Frequency 35MHz to 52MHz: ±0.5ppm typ
- Note 1 Ageing:
Frequency ≤20MHz: ±1ppm max in 1st year
Frequency ≤20MHz: ±3ppm max for 10 years (including the 1st year)
Frequency >20MHz: ±2ppm max in 1st year
Frequency >20MHz: ±5ppm max for 10 years (including the 1st year)
- Supply Voltage Variation (@ ±5% change):
Frequency <20MHz: ±0.1ppm typ
Frequency 20MHz to <35MHz: ±0.3ppm typ
Frequency 35MHz to 52MHz: ±0.5ppm typ



Outline (mm)

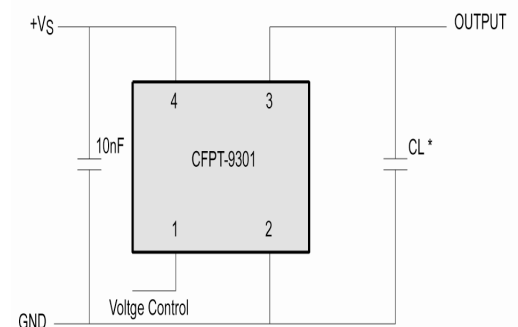


- Pad Connections
1. Voltage Control / NC
 2. GND
 3. Output
 4. +Vs



Low profile option: 1.4mm max height

Test Circuit



* Load 15pF (HCMOS), inclusive of probe and jig capacitance

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Web: www.iqdfrequencyproducts.com



Electrical Parameters

- Frequency Adjustment - option A (standard):
Ageing adjustment by means of external Control Voltage applied to pad 1
Range (frequency ≤ 20MHz): ≥±5ppm
Range (frequency > 20MHz): ≥±7ppm
Linearity: ≤2%
Slope: Positive
Input resistance: ≥100kΩ
Modulation bandwidth: ≥2kHz
Standard control voltage range: 1.5V ±1V
- Frequency Adjustment - option B
No frequency adjustment
Initial calibration: ≤ ±1.0ppm
- Supply Current (typical):
HCMOS: 1+Frequency(MHz)*Supply(V)*{Load(pF)+15}*10-3mA
e.g. 20MHz, 3.3V, 15pF ≈ 3mA
- Supply Voltage Tolerance: Parts will operate correctly with ±10% supply voltage variation but supply coefficient is measured with ±5% variation

Output Details

- Output Level:
VoH ≥ 90% VS
VoL ≤ 10% VS

Environmental Parameters

- Shock: IEC 60068-2-27, Test Ea: 1500G acceleration for 0.5ms, 3 shocks in each of 3 mutually perpendicular planes
- Storage Temperature Range: -55 to 125°C
- Vibration: IEC 60068-2-6, Test Fc: 10-60Hz 1.5mm displacement, 60-2000Hz at 20G, 4 hours in each of three mutually perpendicular axes at 1oct/min

Ordering Information (*minimum required)

- Example
20.0MHz CFPT-9301-A
HCMOS ±1ppm -20 to 70C 3.3V
- Frequency*
- Model*
- Frequency Adjustment Option*
- Output
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Supply Voltage (*minimum required)
- Low profile option (1.4mm max height) is available, please contact our sales offices
- Non standard requirements may be available upon request, please contact our sales offices
- Stability/Temperature Range combinations may not be available for all frequencies, please contact our sales offices
- Supply Voltages in the range 2.4V to 6.0V are available to order, please contact our sales offices

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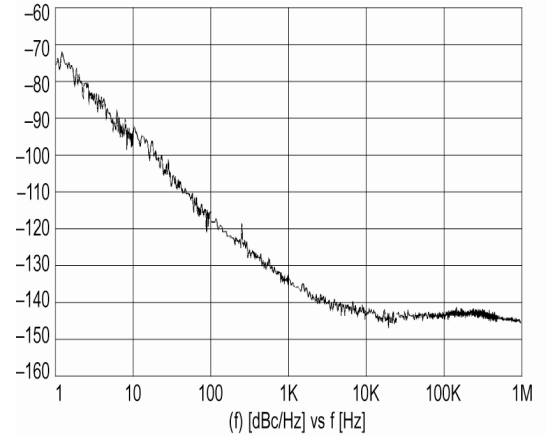
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Packing Details

- Pack Style: **Bulk** Loose in bulk pack
Pack Size 10
- Pack Style: **Reel** Tape and reel in accordance with EIA-481-D
Pack Size 1,000
- Alternative packing options available

Typical Phase Noise at 14.4MHz



Electrical Specification - maximum limiting values 3.3V ±10%

Frequency Range	Operating Temp Range	Frequency Stability	Frequency Adjustment From 0V to +Vs	Duty Cycle %
52.00MHz	-20 to 70°C -40 to 85°C	±0.20ppm ±0.20ppm	Optional	45/55%

This document was correct at the time of printing; please contact your local sales office for the latest version

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