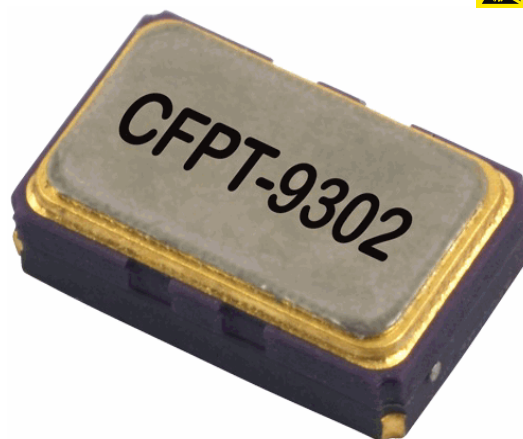




ISSUE 7; September 2014 - RoHS 2011/65/EU

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.
- -A Freq Adj option
- Option A (standard):
Ageing adjustment by means of external Control Voltage applied to pad 1
Range (frequency $\leq$ 20MHz) $\geq \pm 5$ ppm
Range (frequency $>$ 20MHz) $\geq \pm 7$ ppm
Linearity $\leq 2\%$
Slope Positive
Input resistance $\geq 100k\Omega$
Modulation bandwidth $\geq 2kHz$
Standard control voltage range 1.5V $\pm$ 1V
- -B No Freq Adj
- Option B: No frequency adjustment
Initial Calibration $\leq \pm 1.0$ ppm



Frequency Parameters

- Frequency 12.0MHz to 52.0MHz
- Frequency Tolerance ± 0.00 ppm to ± 1.00 ppm
- Frequency Stability ± 0.20 ppm to ± 2.00 ppm
- Ageing ± 2 ppm max in 1st year (see Note 1)
- Supply Voltage Variation (@ $\pm 5\%$ change): ± 0.05 ppm typ
- Load Variation (@ $\pm 10\%$ change): ± 0.05 ppm typ
- Note 1 Ageing:
Frequency ≤ 20 MHz: ± 1 ppm max in 1st year
Frequency ≤ 20 MHz: ± 3 ppm max for 10 years (including the 1st year)
Frequency > 20 MHz: ± 2 ppm max in 1st year
Frequency > 20 MHz: ± 5 ppm max for 10 years (including the 1st year)

Electrical Parameters

- Supply Voltage 3.0V $\pm 10\%$
- Supply Current (typical):
Clipped Sinewave: $1 + \text{Frequency(MHz)} \times 1.2 \times \{\text{Load(pF)} + 30\} \times 10^{-3}$ mA
e.g. 20MHz, 10pF ≈ 2 mA
- Supply Voltage Tolerance: Parts will operate correctly with $\pm 10\%$ supply voltage variation but supply coefficient is measured with $\pm 5\%$ variation

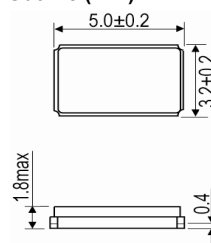
Frequency Adjustment

- Pulling ± 5 ppm min (see Note 1)

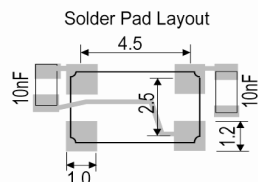
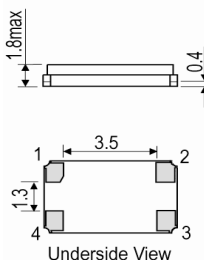
Operating Temperature Ranges

- -20 to 70°C
- -40 to 85°C

Outline (mm)



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



Low profile option: 1.4mm max height

Sales Office Contact Details:

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Germany: +49 (0) 30 408 192 300

France: +33 (0)5 34 50 91 18
USA: +1 408.273.4530

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com



Output Details

- Output Compatibility Clipped Sinewave
- Drive Capability 10k Ω //10pF, DC coupled
- Output Level: 0.8Vpk-pk min

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: IEC 60068-2-27, Test Ea: 1500G acceleration for 0.5ms, 3 shocks in each of 3 mutually perpendicular planes
- 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 1 oct/min

Ordering Information

- Frequency*
- Model*
- Frequency Adjustment Option*
- Output
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Supply Voltage
- (*minimum required)
- Example
20.0MHz CFPT-9302-A
Clipped Sine ± 1 ppm-20 to 70C 3.0V
- 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
- 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

Compliance

- RoHS Status Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Bulk Loose in bulk pack
Pack Size: 10
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 100

Sales Office Contact Details:

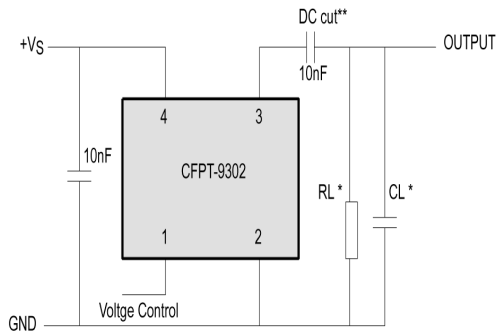
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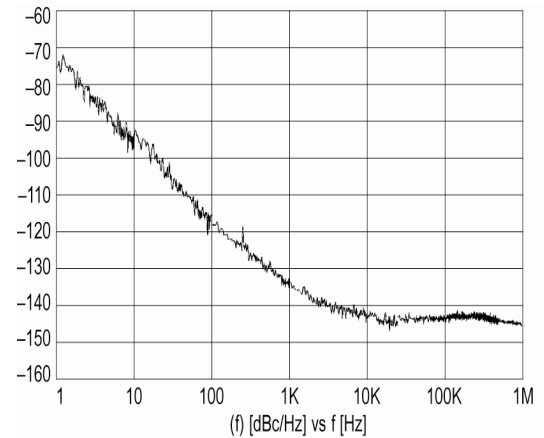
Test Circuit



* Load 10k Ω // 10pF (clipped sinewave), inclusive of probe and jig capacitance

** DC cut capacitor required for AC coupled clipped sinewave

Typical Phase Noise at 14.4MHz



Electrical Specification - maximum limiting values 3.0V $\pm$ 10%

Frequency Min	Frequency Max	Temperature Range	Stability (min)	Current Draw	Rise and Fall Time	Duty Cycle
		$^{\circ}\text{C}$	ppm	mA	ns	%
12.0MHz	52.0MHz	-20 to 70	± 0.2	-	-	-
		-40 to 85	± 0.3	-	-	-

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

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