Description

- Sub 1ppm performance TCXO manufactured for us by Rakon utilising their Pluto™ ASIC technology, a single chip oscillator and analogue compensation circuit operating over an extended temperature range. Its ability to function down to a supply voltage of 2.4V and low power consumption make it particularly suitable for mobile applications.
- Model CFPT-9006-1A
- Model Issue number 13

Frequency Parameters

- Frequency 10.0MHz
- Frequency Tolerance @ 25°C INCLUSIVE
- Frequency Stability ±1.00ppm
- Operating Temperature Range -40.00 to 85.00°C
- Ageing:
  ±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), frequency >20MHz
- Supply Voltage Variation (±10% change): ±0.2ppm typ
- Load Variation (±5pF change): ±0.2ppm typ
- After Reflow (measured at least 60mins after reflow): ±1ppm max

Electrical Parameters

- Supply Voltage 3.3V
- Supply Voltage Tolerance ±10%
- Supply Current:
  1+Frequency(MHz)*Supply(V)*{Load(pF)+15}*10–3 mA
  e.g. 20MHz, 3.3V, 15pF ≈ 2mA
- Optional reference voltage output on pad 1, suitable for potentiometer supply or DAC reference:
  1. No output (standard option)
  2. 2.2V for min Vs>2.4V
  3. 2.7V for min Vs>3.0V
  Maximum load current (mA) = Vref/10
- For manual frequency adjustment connect an external 50kΩ potentiometer between pad 1 (Reference Voltage) and pad 4 (GND) with wiper connected to pad 10 (Voltage Control). Please specify reference voltage as part of the ordering code.

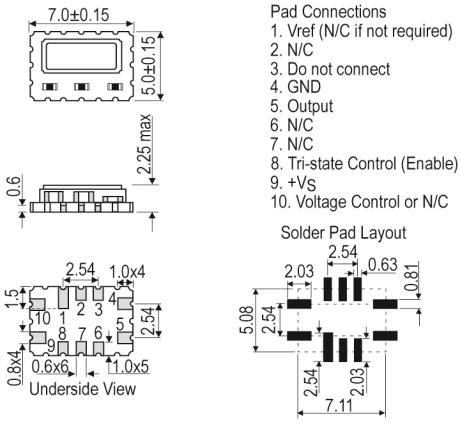
Frequency Adjustment

- Input Impedance: 100kΩ min
- Modulation Bandwidth: 2kHz min
- Standard Voltage Control Ranges:
  Without Reference Voltage Vs=3.3V 1.65V±1.0V
  With Reference Voltage Vs=0V to Vref
- Linearity: 1% max
- B. No frequency adjustment initial calibration @ 25°C ≤ ±1.0ppm
- C. High Pulling ±10ppm to ±50ppm can be available depending on frequency and stability options (please contact an IQD Sales Office)
- Slope: Positive

Output Details

- Output Compatability HCMOS
- Output Load 15pF
- Rise and Fall time (10% - 90%) 8ns max
- Duty Cycle 45/55% max

Outline (mm)



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Output Levels

- VoL: <10% Vs
- VoH: >90% Vs

Output Control

- Tri-state Operation:
  Logic '1' (>60% Vs) or no connection to pad 8 enables output
  Logic '0' (<20% Vs) to pad 8 disables output
  When at logic '0' the output stage is disabled for all output options, but the oscillator and compensation circuit are still active (current consumption <1mA)

Noise Parameters

- Phase Noise (typical for 13.0MHz @ 25°C):
  -65dBc/Hz @ 1Hz
  -95dBc/Hz @ 10Hz
  -120dBc/Hz @ 100Hz
  -135dBc/Hz @ 1kHz
  -140dBc/Hz @ 10kHz
  -145dBc/Hz @ 100kHz

Environmental Parameters

- Shock: IEC 60068-2-27, Test Ea: 1500G acceleration for 0.5ms, half sine pulse, 3 shocks in each of 3 mutually perpendicular planes
- Vibration: IEC 60068-2-6, Test Fc: 10Hz-60Hz, 1.5mm displacement, 60-2000Hz at 10G, 30mins in 3 mutually perpendicular planes at 1oct/min
- Storage Temperature Range: –55 to 125°C
- Solderability: MIL-STD-202, Method 208, Category 3

Manufacturing Details

- Pb-free Reflow Soldering: 260°C max for 30sec max

Compliance

RoHS Status	Compliant
REACh Status	Compliant

Packaging

Pack Type: Bulk	Loose in bulk pack
Pack Size	10

- Alternative packing option available

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

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