

Description

- Sub 1ppm performance TCXO/VCTCXO, 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.
- No ref voltage, no freq adj option
- Model CFPT-9007-1B
- Model Issue number 14

Frequency Parameters

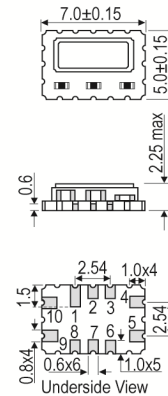
- Frequency 20.0MHz
- Frequency Tolerance $\pm 1.00\text{ppm}$
- Frequency Stability $\pm 0.30\text{ppm}$
- Operating Temperature Range -40.00 to 85.00°C
- Acceleration sensitivity (Gamma vector, 3-axes, 30-1500Hz): < 2 ppb/g typ
- Supply Voltage Variation ($\pm 10\%$ change reference to frequency at nominal supply voltage): $\pm 0.2\text{ppm}$ typ
- Load Variation ($\pm 5\text{pF}$ change reference to frequency at nominal load): $\pm 0.2\text{ppm}$ typ
- Ageing:
 - $\pm 1\text{ppm}$ maximum in 1st year, frequency $< 20\text{MHz}$
 - $\pm 3\text{ppm}$ maximum for 10 years (including the 1st year), frequency $< 20\text{MHz}$
 - $\pm 2\text{ppm}$ maximum in 1st year, frequency $\geq 20\text{MHz}$
 - $\pm 5\text{ppm}$ maximum for 10 years (including the 1st year), frequency $\geq 20\text{MHz}$
- After Reflow: $\pm 1\text{ppm}$ max

Electrical Parameters

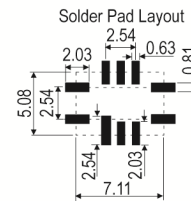
- Supply Voltage $3.3\text{V} \pm 10\%$
- Current Draw 8.000mA
- Supply voltages in the range 2.4V to 6.0V available to order, please contact our sales offices



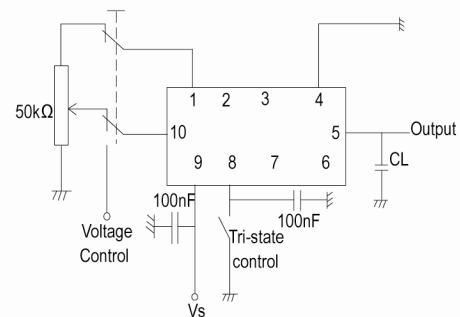
Outline (mm)



- Pad Connections
1. Vref (N/C if not required)
 2. N/C
 3. Do not connect
 4. GND
 5. Output
 6. N/C
 7. N/C
 8. Tri-state Control (Enable)
 9. +Vs
 10. Voltage Control or N/C



Test Circuit



Sales Office Contact Details:

UK: +44 (0)1460 270200
Germany: 0800 1808 443

France: 0800 901 383
USA: +1.760.318.2824

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

Frequency Adjustment

- 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>3.0VMaximum 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.
- Three options with external Voltage Control applied to pad 10:
 - A. Standard Pulling Adjustment:
±5ppm min, frequency ≤20MHz
±7ppm min, frequency >20MHz
 - B. No frequency adjustment initial calibration @ 25°C < ±1.0ppm
 - C. High Pulling ±10ppm to ±20ppm can be available depending on frequency and stability options (please contact our sales offices)
- Linearity: <1%
- Slope: Positive
- Input Resistance: >100kΩ
- Modulation Bandwidth: >2kHz
- Voltage Control Range:
Without reference voltage: 1.65V±1V
With reference voltage: Vc = 0V to Vref

Output Details

- Output Compatibility Sine
- Drive Capability 10kΩ//10pF
- AC-coupled
- ≤20MHz: 1.0V pk-pk min
 >20MHz: 0.5V pk-pk min

Output Control

- Tri-state Operation:
Logic '1' (>60% Vs) to pad 8 enables output
Logic '0' (<20% Vs) to pad 8 disables output
The tristate control (enable) pin has a internal 100kΩ pull up resistor which allows the pin to be left unconnected if not required. When in tristate mode, the output stage is disabled, but the oscillator and compensation circuit are still active (current consumption typ. ≤ 1.0mA).

Noise Parameters

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

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: IEC 60068-2-27, Test Ea: 1500g acceleration for 0.5ms, 1/2 sine pulse, 3 shocks in each of 3 mutually perpendicular axes.
- Vibration: IEC 60068-2-6, Test Fc, 10Hz-60Hz at 10g 30mins in 3 mutually perpendicular axes at 1 octave per minute.
- Solderability: MIL-STD-202, Method 208, Category 3

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Manufacturing Details

- RoHS Terminations NiCoAu
- RoHS Reflow Temp 260degC 30s

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 1

Packaging Details

- Pack Style: Bulk Bulk pack
Pack Size: 10
- *Alternative packing option available*

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