

ISSUE 8; October 2015

Description

- Surface mount temperature compensated voltage controlled crystal oscillator (TCVFXO) providing a high degree of frequency stability over a wide temperature range in a hermetically sealed ceramic package and is particularly suited to applications where space is at a premium.

Frequency Parameters

- Frequency: 10.0MHz to 30.0MHz
- Frequency Tolerance: $\pm 0.50\text{ppm}$
- Frequency Stability: $\pm 1.50\text{ppm}$ to $\pm 5.00\text{ppm}$
- Ageing: $\pm 1\text{ppm}$ typ in 1st year @ 25°C

Electrical Parameters

- Supply Voltage: $3.0\text{V} \pm 0.15\text{V}$
- Supply Voltage Variation: $\pm 0.2\text{ppm}$ (5% change)
- Load Variation: $\pm 0.2\text{ppm}$ max (10% change)

Frequency Adjustment

- Pulling: $\pm 3\text{ppm}$ min to $\pm 7\text{ppm}$ max
- Control Voltage: $1.5\text{V} \pm 1.0\text{V}$
- Input Impedance (Pad1): $1.0\text{M}\Omega$ min

Operating Temperature Ranges

- 0 to 50°C
- 10 to 60°C
- 20 to 70°C
- 40 to 85°C
- 30 to 85°C

Output Details

- Output Compatibility: Clipped Sine
- Drive Capability: $10\text{k}\Omega // 10\text{pF} \pm 10\%$
- Output: $0.8\text{V}_{\text{pk-pk}}$ min

Noise Parameters

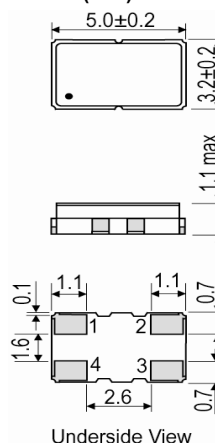
- Phase Noise (typical @ 13MHz)
 - 80dBc/Hz @ 10Hz
 - 105dBc/Hz @ 100Hz
 - 130dBc/Hz @ 1kHz
 - 140dBc/Hz @ 10kHz

Environmental Parameters

- Shock: MIL-STD-883D, Method 2002.3, Test Condition B: 1500G, 0.5ms, 1/2 sine wave, 3 shocks in each of 3 mutually perpendicular planes
- Vibration: MIL-STD-883D, Method 2005.2, Test Condition B: 20G (20Hz-2000Hz), 1.5mm amplitude, in 3 mutually perpendicular planes, 4hrs in each plane
- Storage Temperature Range: -55 to 125°C



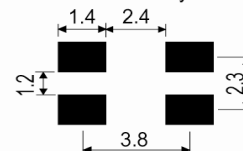
Outline (mm)



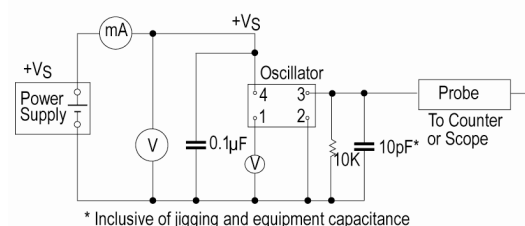
Pad Connections

1. Voltage Control
2. GND
3. Output
4. +VS

Solder Pad Layout



Test Circuit



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Ordering Information

- Frequency*
Model*
Output
Frequency Stability (over operating temperature range)*
Operating Temperature Range*
Supply Voltage
- Example
13.0MHz CFPT-141
Clipped Sine $\pm 2.5\text{ppm}$ -30 to 85C 3V

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: 100
- Pack Style: Cutt In tape, cut from a reel
Pack Size: 1
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000

Electrical Specification - maximum limiting values 3.0V $\pm 0.15\text{V}$

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
10.0MHz	30.0MHz	0 to 50	± 1.5	2	-	-
		-10 to 60	± 1.5	2	-	-
		-20 to 70	± 2.0	2	-	-
		-30 to 85	± 2.5	2	-	-
		-40 to 85	± 2.5	2	-	-

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