

ISSUE 8; October 2015

### Description

- Surface mount temperature compensated voltage controlled crystal oscillator (TCVCXO) 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: 3.0V  $\pm 0.15\text{V}$
- 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: 1.5V  $\pm 1.0\text{V}$
- Input Impedance (Pad1): 1.0M $\Omega$  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

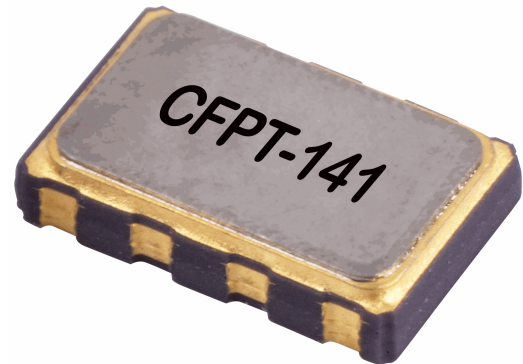
- Output Compatibility: Clipped Sine
- Drive Capability: 10k $\Omega$  // 10pF  $\pm 10\%$
- Output: 0.8Vpk-pk min

### Noise Parameters

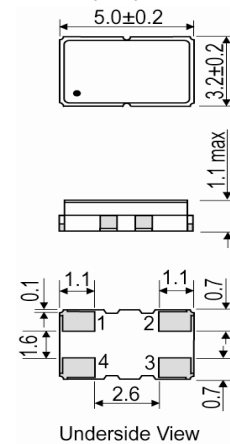
- Phase Noise (typical @ 13MHz)
  - 80dBc/Hz @ 10Hz
  - 105dBc/Hz @ 100Hz
  - 130dBc/Hz @ 1kHz
  - 140dBc/Hz @ 10kHz

### 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



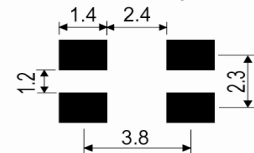
### Outline (mm)



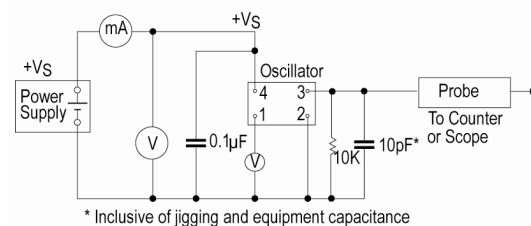
### Pad Connections

- Voltage Control
- GND
- Output
- +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	$\pm 1.5$	2	-	-
		-10 to 60	$\pm 1.5$	2	-	-
		-20 to 70	$\pm 2.0$	2	-	-
		-30 to 85	$\pm 2.5$	2	-	-
		-40 to 85	$\pm 2.5$	2	-	-

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