

ISSUE 9; April 2016

**Description**

- Surface mount temperature compensated crystal oscillator (TCXO) providing a high degree of frequency stability over a wide temperature range in a hermetically sealed ceramic package



**Frequency Parameters**

- Frequency: 10.0MHz to 40.0MHz
- Frequency Tolerance:  $\pm 1.00\text{ppm}$
- Frequency Stability:  $\pm 0.90\text{ppm}$
- Ageing:  $\pm 1\text{ppm typ in 1st year @ } 25^\circ\text{C}$

**Electrical Parameters**

- Supply Voltage:  $3.3\text{V} \pm 0.3\text{V}$
- Supply Voltage Variation (@  $\pm 5\%$  change):  
 $< 30\text{MHz} \pm 0.3\text{ppm}$   
 $30\text{MHz to } < 40\text{MHz} \pm 0.4\text{ppm}$   
 $40\text{MHz} \pm 0.5\text{ppm}$
- Load Variation (@  $\pm 10\%$  change):  $\pm 0.2\text{ppm}$
- Variation After Reflow:  $\pm 1.0\text{ppm}$

**Operating Temperature Ranges**

- 20 to  $70^\circ\text{C}$

**Output Details**

- Output Compatibility: HCMOS
- Drive Capability:  $15\text{pF nom}$

**Environmental Parameters**

- Storage Temperature Range:  $-55$  to  $125^\circ\text{C}$
- Shock: IEC 60068-2-27, Test Ea:  $980\text{m/s}^2$  acceleration for 6ms, 3 shocks in each of 3 mutually perpendicular planes
- Vibration: IEC 60068-2-6, Test Fc, Procedure B4: 10Hz-60Hz, 1.5mm displacement, 60-2000Hz at  $98.1\text{m/s}^2$ , 30mins in 3 mutually perpendicular planes at 1oct/min
- Solderability: MIL-STD-202, Method 208, Category 3

**Manufacturing Details**

- Soldering: Suitable for Convection Reflow soldering, peak temperature  $260^\circ\text{C}$  for 10secs max
- Washing: Able to withstand aqueous washing

**Ordering Information**

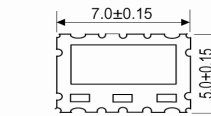
- Frequency\*  
Model\*  
Output  
Frequency Stability (over operating temperature range)  
Operating Temperature Range  
Supply Voltage  
(\*minimum required)
- Example  
 $40.0\text{MHz CFPT-37}$   
 $\text{HCMOS } \pm 0.9\text{ppm } -20$  to  $70\text{C } 3.3\text{V}$

**Compliance**

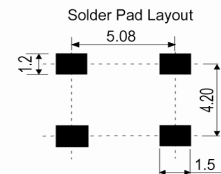
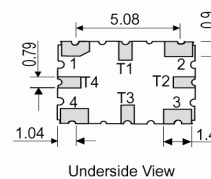
- RoHS Status (2011/65/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable



**Outline (mm)**



- Pad Connections
- 1.N/C
  - 2.GND
  - 3.Output
  - 4.+Vs
  - T1, T2, T3, T4 N/C



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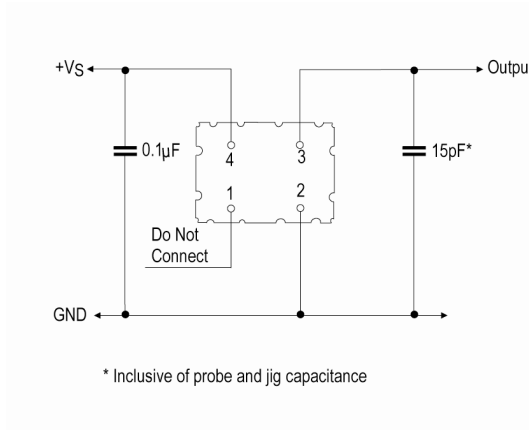
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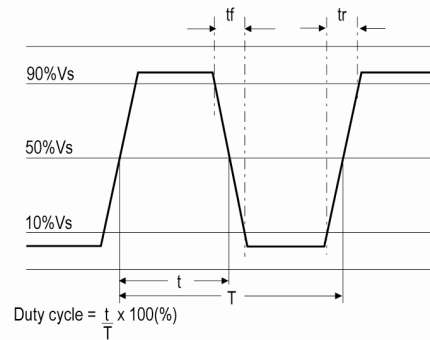
**Packaging Details**

- 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: 500

**Test Circuit**



**Wave Form**



**Electrical Specification - maximum limiting values 3.3V ±0.3V**

| Frequency Min | Frequency Max | Temperature Range | Stability (Min) | Current Draw (typ) | Rise and Fall Time | Duty Cycle |
|---------------|---------------|-------------------|-----------------|--------------------|--------------------|------------|
|               |               | °C                | ppm             | mA                 | ns                 | %          |
| 10.0MHz       | 10.0MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 12.8MHz       | 12.8MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 13.0MHz       | 13.0MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 14.4MHz       | 14.4MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 16.32MHz      | 16.32MHz      | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 16.384MHz     | 16.384MHz     | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 19.44MHz      | 19.44MHz      | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 20.0MHz       | 20.0MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 26.0MHz       | 26.0MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 32.768MHz     | 32.768MHz     | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |
| 40.0MHz       | 40.0MHz       | -20 to 70         | ±0.9            | 3                  | 8                  | 45/55%     |

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