

**Customer Part:**

**Description**

- Semtech approved TCXO for Stratum 3 applications.
- Model E2747
- Model Issue number 8

**Frequency Parameters**

- Frequency 12.80MHz
- Frequency Stability  $\pm 0.28\text{ppm}$
- Operating Temperature Range  $-20.00$  to  $70.00^\circ\text{C}$
- Holdover Stability  $[\pm(F_{\text{max}} - F_{\text{min}})/2F_0]$ :  
Temperature,  $-20$  to  $70^\circ\text{C}$ :  $< \pm 0.28\text{ppm}$   
Temperature,  $-20$  to  $70^\circ\text{C}$ , inclusive of  
Supply Voltage,  $3.3\text{V} \pm 5\%$  and Ageing, 24 hours:  $< \pm 0.32\text{ppm}$
- Free-Run Accuracy, incl.  
Calibration @  $25^\circ\text{C}$ , Temperature  $-20$  to  $70^\circ\text{C}$ , Supply Voltage  
 $3.3\text{V} \pm 5\%$ , Load  $15\text{pF} \pm 5\%$ , Reflow Soldering and Ageing 20  
years:  $< \pm 4.6\text{ppm}$  ref to  $F_0$

**Electrical Parameters**

- Supply Voltage  $3.3\text{V} \pm 5\%$
- Current Draw  $4.000\text{mA}$

**Output Details**

- Output Compatibility HCMOS
- Drive Capability  $15\text{pF}$
- Rise and Fall Time  $8.0\text{ns}$  max
- Duty Cycle  $45/55\%$
- VoL:  $\leq 10\%$  Vs
- VoH:  $\geq 90\%$  Vs

**Output Control**

- Tri-State Operation:  
Logic '1' ( $\geq 60\%V_S$ ) to pad 8 enables output  
Logic '0' ( $\leq 20\%V_S$ ) to pad 8 disables output  
In Tri-state mode, the output stage is disabled but the oscillator  
and compensation circuit are still active (current consumption  $\approx$   
 $1\text{mA}$ )

**Noise Parameters**

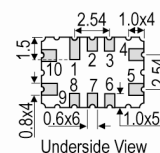
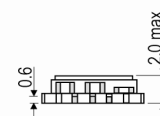
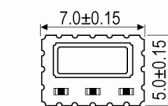
- Allan Deviation ( $\tau=100\text{ms}$ ):  $< 1.10 \cdot 10^{-10}$
- Phase Noise (max):  
 $-90\text{dBc/Hz}$  @  $10\text{Hz}$   
 $-115\text{dBc/Hz}$  @  $100\text{Hz}$   
 $-127\text{dBc/Hz}$  @  $1\text{kHz}$   
 $-137\text{dBc/Hz}$  @  $10\text{kHz}$   
 $-143\text{dBc/Hz}$  @  $\geq 100\text{kHz}$

**Environmental Parameters**

- Storage Temperature:  $-55$  to  $125^\circ\text{C}$
- Vibration: IEC 60068-2-6, Test Fc,  $10\text{Hz}$ - $60\text{Hz}$   $1.5\text{mm}$   
displacement at  $10\text{G}$ ,  $30\text{mins}$  in each of 3 mutually  
perpendicular axes at  $1\text{ oct/min}$ .
- Shock: IEC 60068-2-27, Test Ea:  $100\text{G}$  acceleration for  $6\text{ms}$   
duration, 3 shocks in each direction along 3 mutually  
perpendicular axes.
- Solderability: MIL-STD-202, Method 208, Category 3
- Resistance to Soldering Heat:  $260^\circ\text{C}/10\text{sec}$  exposure

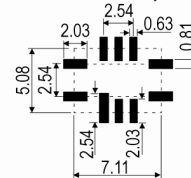


**Outline (mm)**



- Pad Connections**
1. Do not connect
  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. Do not connect

**Solder Pad Layout**



**Sales Office Contact Details:**

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**Customer Part:**

**Manufacturing Details**

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

**Compliance**

- |                              |                |
|------------------------------|----------------|
| ■ RoHS Status (2015/863/EU)  | Compliant      |
| ■ REACH Status               | Compliant      |
| ■ MSL Rating (JDEC-STD-033): | Not Applicable |

**Packaging Details**

- Tape & reel in accordance with EIA-481  
Quantities below the standard reel size to be supplied on cut tape  
  
Standard Pack Quantity: 1,000

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