

ISSUE 5; March 2022

### Description

- Zarlink approved TCXO for GR-1244 & GR-253 Stratum 3 applications.

### Frequency Parameters

- Frequency 20.0MHz
- Frequency Stability  $\pm 0.28$ ppm
- Holdover Stability  $[\pm(F_{max}-F_{min})/2F_0]$  over  $-40$  to  $85^\circ\text{C}$ :  $\leq \pm 0.28$ ppm  
Holdover Stability  $[\pm(F_{max}-F_{min})/2F_0]$  over  $-40$  to  $85^\circ\text{C}$ , inclusive of Supply Voltage,  $3.3\text{V} \pm 5\%$  and Ageing, 24 hours:  $\leq \pm 0.32$ ppm
- Free-Run Accuracy, incl. Calibration @  $25^\circ\text{C}$ , Temperature  $-40$  to  $85^\circ\text{C}$ , Supply Voltage  $3.3\text{V} \pm 5\%$ , Load  $15\text{pF} \pm 5\%$ , Reflow Soldering and Ageing 20 years:  $\leq \pm 4.6$ ppm ref. to Fo

### Electrical Parameters

- Supply Voltage  $3.3\text{V} \pm 5\%$

### Operating Temperature Ranges

- $-40$  to  $85^\circ\text{C}$

### Output Details

- Output Compatibility HCMOS
- Drive Capability  $15\text{pF}$  max
- VOL:  $\leq 10\%$  Vs
- VOH:  $\geq 90\%$  Vs

### Output Control

- Tri-State Operation:  
Logic '1' ( $\geq 60\%$ VS) to pad 8 enables output  
Logic '0' ( $\leq 20\%$ VS) to pad 8 disables output  
When at logic '0' the output stage is disabled for all output options, but the oscillator and compensation circuit are still active (Current consumption  $< 1\text{mA}$ )

### Noise Parameters

- Phase Noise (max):  
 $-85\text{dBc/Hz}$  @  $10\text{Hz}$   
 $-110\text{dBc/Hz}$  @  $100\text{Hz}$   
 $-125\text{dBc/Hz}$  @  $1\text{kHz}$   
 $-130\text{dBc/Hz}$  @  $\geq 10\text{kHz}$

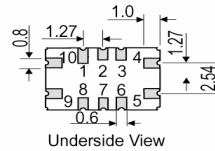
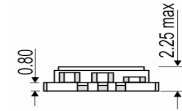
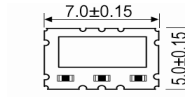
### Environmental Parameters

- Storage Temperature:  $-55$  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:  $10\text{Hz}$ - $60\text{Hz}$   $1.5\text{mm}$  displacement,  $60$ - $2000\text{Hz}$  at  $98.1\text{m/s}^2$ , 30mins in 3 mutually perpendicular planes at 1 oct/min

### Manufacturing Details

- Soldering: Suitable for Convection Reflow soldering. Peak temperature  $260^\circ\text{C}$ , 60sec max above  $220^\circ\text{C}$ .
- RoHS Terminations NiCoAu
- RoHS Reflow  $260\text{degC}$  max for 40s max

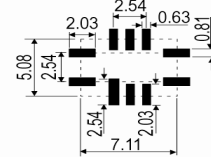
### Outline (mm)



### Pad Connections

- Do not connect
  - N/C
  - Do not connect
  - GND
  - Output
  - N/C
  - N/C
  - Tri-state Control \*
  - +Vs
  - Do not connect
- \* Leave unconnected if not required

### Solder Pad Layout



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#### Ordering Information

- Frequency\*  
Model\*
- Example:  
20.0MHz E3199

#### Compliance

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

#### Packaging Details

- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000

#### Electrical Specification - maximum limiting values 3.30V ±5%

Frequency	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
	°C	ppm	mA	ns	%
20.0MHz	-40 to 85	±0.28	6	8	45/55%

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