



## Features and Benefits

Frequency range: 15-2100MHz  
Output waveform: LVDS  
Supply voltage: 3.3V  
Current: 90mA Max.  
Frequency stability vs. temperature:  $\pm 50$ PPM  
Operating temperature:  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$   
Size: 3.2x2.5x1mm  
Package type: Surface Mount



## Typical Applications

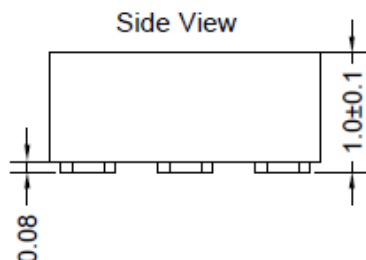
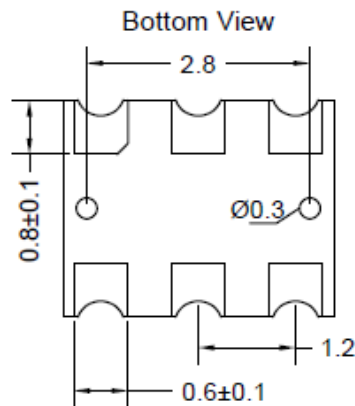
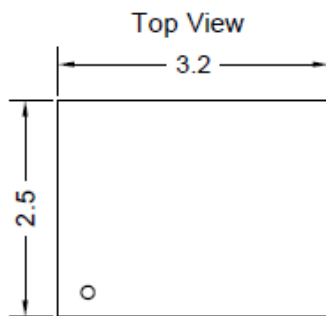
Defense Systems  
Mobile Radar Station  
Gigabit Ethernet, SONET/SDH  
Server & Storage, Data Center  
SD/HD Video, FPGA Clock Generation

## Description

VCXO3225BM-LJ\_LVDS-133 is the high frequency and low jitter differential VCXO. It can be widely used in digital circuits.

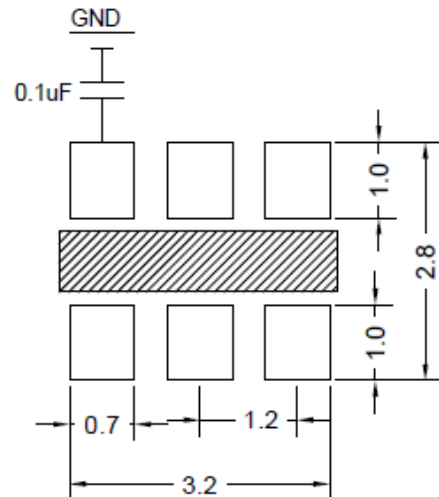
## Mechanical Drawing & Pin Connections

Drawing No: MD240085-1



| PIN | Function        |
|-----|-----------------|
| #1  | Control Voltage |
| #2  | OE              |
| #3  | GND             |
| #4  | OUTPUT          |
| #5  | OUTPUT_N        |
| #6  | Supply Voltage  |

Unit in mm  
1mm = 0.0394 inches



Please keep the middle area blank.  
Do not layout any lines in this space.  
To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vcc and GND pads



## Specifications

| Oscillator Specification   | Sym             | Condition              | Value               |      |                     | Unit   | Note |
|--|-----------------|------------------------|---------------------|------|---------------------|--------|------|
|  |                 |                        | Min.                | Typ. | Max.                |        |      |
| Operational Frequency  | f <sub>0</sub>  |                        | 15                  |      | 2100                | MHz    |      |
| RF Output  |                 |                        |                     |      |                     |        |      |
| Output Waveform  |                 |                        | LVDS                |      |                     |        |      |
| Output Level   |                 | Output high            |                     |      | 1.6                 | V      |      |
|  |                 | Output low             | 0.9                 |      |                     | V      |      |
| Duty Cycle   |                 |                        | 45                  |      | 55                  | %      |      |
| Rise & Fall Time   |                 |                        |                     |      | 0.35                | ns     |      |
| Startup Time   |                 |                        |                     |      | 8                   | ms     |      |
| Tri-State<br>(Input to Pin2)                                     |                 | Enable                 | 0.7 V <sub>cc</sub> |      |                     | V      |      |
|  |                 | Disable                |                     |      | 0.3 V <sub>cc</sub> | V      |      |
| Power Supply   |                 |                        |                     |      |                     |        |      |
| Voltage  | V <sub>cc</sub> | ±10%                   |                     | 3.3  |                     | V      |      |
| Supply Current   |                 | V <sub>cc</sub> =3.3V  |                     |      | 90                  | mA     |      |
| Stand by Current   |                 | V <sub>cc</sub> =3.3V  |                     |      | 90                  | mA     |      |
| Control Voltage  |                 |                        |                     |      |                     |        |      |
| Control Voltage  |                 | V <sub>cc</sub> =3.3V  | 0.3                 | 1.65 | 3                   | V      |      |
| Pulling Range  |                 |                        | ±50                 |      | ±250                | ppm    |      |
| Linearity  |                 |                        |                     |      | ±10                 | %      |      |
| Modulation Bandwidth   |                 |                        | 5                   |      | 20                  | KHz    |      |
| VC Input Impedance   |                 |                        | 5                   |      |                     | Mohm   |      |
| Frequency Stability  |                 |                        |                     |      |                     |        |      |
| Versus Temperature   |                 |                        |                     |      | ±50                 | ppm    |      |
| Phase Noise<br>At V <sub>cc</sub> =3.3V,<br>873.515MHz Frequency |                 | 1KHz                   |                     | -106 |                     | dBc/Hz |      |
|  |                 | 10KHz                  |                     | -115 |                     |        |      |
|  |                 | 100KHz                 |                     | -123 |                     |        |      |
|  |                 | 1MHz                   |                     | -133 |                     |        |      |
| RMS Phase Jitter   |                 | Integrated 12KHz-20MHz | 150                 |      | 300                 | fs     |      |
| Period Jitter  |                 |                        |                     |      | 50                  | ps     |      |
| Environmental Conditions   |                 |                        |                     |      |                     |        |      |
| Operating temperature range                                      |                 | -10°C to +60°C         |                     |      |                     |        |      |