



### Features and Benefits

Frequency range: 10MHz  
Supply voltage: 3.3V  
Steady state: 1.3W Max  
Output waveform: LVTTL  
Frequency stability vs. operating temperature:  $\pm 10$ ppb  
Aging:  $\pm 50$ ppb per year  
Phase noise@10KHz: -156dBc/Hz  
Operating temperature: -30°C to +70°C  
Size:25.4x25.4x12.7mm

### Typical Applications

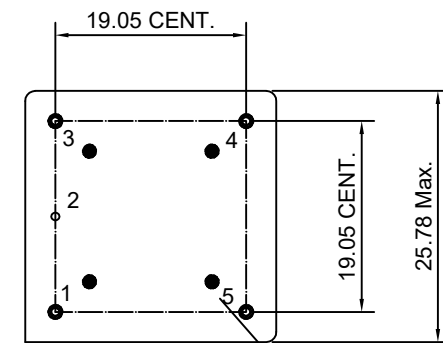
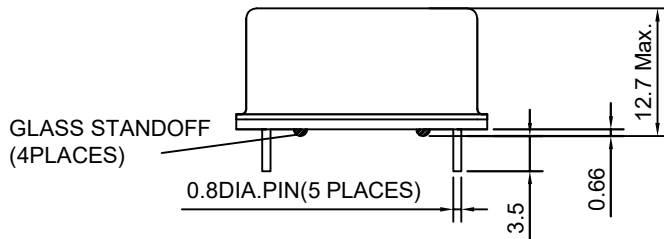
Small Cell, Portable Telecommunication Device  
Test and Instrumentation  
Synthesizer, Digital switch, Reference Timing Circuit

### Description

OCXO2525BM-FD-10MHz\_LVTTL-3111 is designed for applications where exceptional frequency stability and timing is required. It has both excellent temperature performance and short-term stability. These characteristics make it an excellent choice for timing applications.

### Mechanical Drawing & Pin Connections

Drawing No: MD160042-3



VIEW FROM BOTTOM

NUMBERS FOR REFERENCE ONLY  
(NOT STAMPED ON UNIT)

#### PIN Function

| Pin | Function       |
|-----|----------------|
| 1   | R.F. OUTPUT    |
| 2   | GND            |
| 3   | Control Votage |
| 4   | N.C.           |
| 5   | Supply Voltage |

Unit in mm  
1mm = 0.039 inches



**Specifications**

| Oscillator Specification                                   | Sym              | Condition   | Value       |      |       | Unit   | Note  |
|--|------------------|---|-------------|------|-------|--------|---|
|  |                  |   | Min.        | Typ. | Max.  |        |   |
| Operational Frequency                                      | F <sub>nom</sub> |   |             | 10   |       | MHz    |   |
| <b>RF Output</b>   |                  |   |             |      |       |        |   |
| Waveform   |                  |   | Rectangular |      |       |        |   |
| Level  |                  |   | LVTTTL      |      |       |        |   |
| High Level   |                  |   | +2.4        |      |       | V      |   |
| Low Level  |                  |   |             |      | +0.4  | V      |   |
| Load   | R <sub>L</sub>   |   | 15pF        |      |       |        |   |
| Duty Cycle   |                  | @+1.65V   | 45          | 50   | 55    | %      |   |
| Rise/Fall time   |                  | 10% to 90%  |             |      | 6     | ns     |   |
| Spurious   |                  |   |             |      | -60   | dBc    |   |
| <b>Electrical Frequency Adjustment (PIN = "VCO INPUT")</b> |                  |   |             |      |       |        |   |
| Tuning Range   |                  | VCO @ Min. Voltage  |             |      | -0.5  | ppm    | Referenced to frequency at nominal Center Voltage |
|  |                  | VCO @ Max. Voltage  | +0.5        |      |       | ppm    |   |
| Control Voltage  |                  |   | 0           | 1.65 | 3.3   | V      |   |
| Slope  |                  |   | positive    |      |       |        |   |
| Linearity  |                  |   | -10         |      | +10   | %      |   |
| Input Impedance  |                  |   | 100         |      |       | Kohm   |   |
| <b>Power Supply</b>  |                  |   |             |      |       |        |   |
| Supply Voltage   | V <sub>s</sub>   |   | 3.135       | 3.3  | 3.465 | V      |   |
| Steady state   |                  | +25°C   |             |      | 1.3   | W      |   |
| Current  |                  | @ turn on   |             |      | 1000  | mA     |   |
| <b>Frequency Stability</b>                                 |                  |   |             |      |       |        |   |
| Versus Operating Temperature Range                         |                  | ref to +25°C  |             |      | ±10   | ppb    |   |
| Initial Frequency Accuracy                                 |                  | @ +25 ±1°C;<br>after turn on power<br>15 ±1 minutes;<br><=90 days following<br>date code;<br>VCO Input voltage<br>@ Center Voltage<br>±0.001V |             |      | ±0.1  | ppm    |   |
| Versus supply voltage                                      |                  | ±5% change  |             |      | ±0.5  | ppb    |   |
| Versus Load  |                  | ±5% change  |             |      | ±0.5  | ppb    |   |
| Short Term   |                  |   |             |      | 0.05  | ppb/s  | Root Allan variance                               |
| Aging  |                  | Per day, at time of shipment  |             |      | ±0.5  | ppb    |   |
| Aging Per Day  |                  | after 30 days   |             |      | ±0.5  | ppb    |   |
| Aging 1 <sup>st</sup> Year                                 |                  |   |             |      | ±50   | ppb    |   |
| Aging 10 Years   |                  |   |             |      | ±0.3  | ppm    |   |
| Warm-up  |                  | In 10 minutes<br>@25±1°C  |             |      | ±10   | ppb    | Reference to 1 hour                               |
| Phase Noise  |                  | 1Hz   |             | -95  | -90   | dBc/Hz |   |
|  |                  | 10Hz  |             | -125 | -120  | dBc/Hz |   |
|  |                  | 100Hz   |             | -140 | -135  | dBc/Hz |   |
|  |                  | 1kHz  |             | -148 | -145  | dBc/Hz |   |
|  |                  | 10kHz   |             | -156 | -155  | dBc/Hz |   |
|  |                  | 100kHz  |             | -158 | -155  | dBc/Hz |   |
| <b>Environmental, Mechanical Conditions</b>                |                  |   |             |      |       |        |   |
| Operating temperature range                                |                  | -30°C to +70°C  |             |      |       |        |   |
| Storage temperature range                                  |                  | -55°C to +105°C   |             |      |       |        |   |
| Humidity   |                  | MIL-STD-202, Method 103 Test Condition A; 95% RH @ +40°C, non-condensing, 240 hours   |             |      |       |        |   |
| Vibration (non-operating)                                  |                  | MIL-STD-202, Method 201; 0.06" total p-p, 10-55Hz   |             |      |       |        |   |
| Shock (non-operating)                                      |                  | MIL-STD-202, Method 213, test condition J; 30g, 11ms, half-sine   |             |      |       |        |   |