



### Features and Benefits

- Frequency 10.000000MHz
- Sine wave waveform output
- ±20 ppb from -40°C to 85°C
- +12V Supply voltage
- 2.3W steady state power
- Less than -110 dBc/Hz @ 1Hz offset
- Less than -170 dBc/Hz @ 10KHz offset

### Description

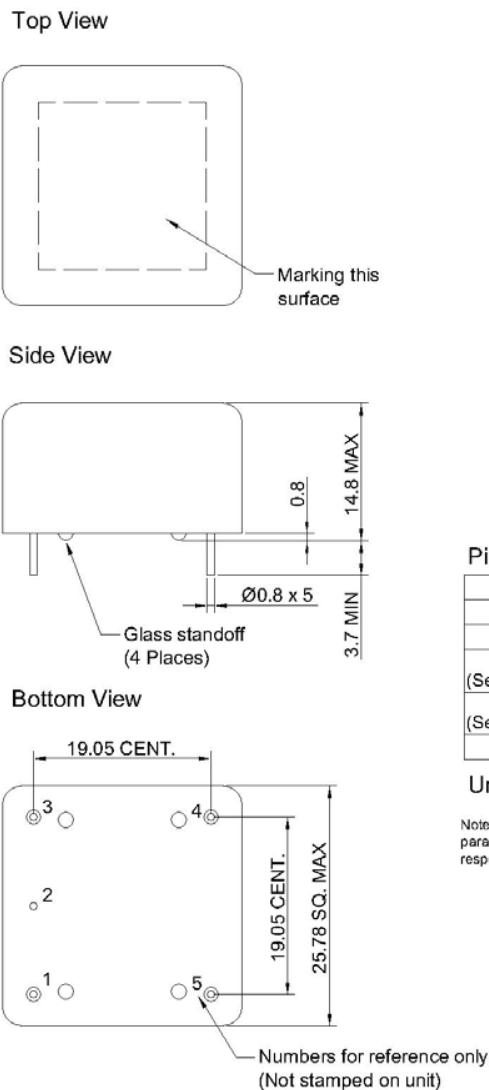
Ultra-Low Noise Design Platform

### Typical Applications

- Digital Switching Systems
- Battery Operated Systems
- Radio Transceiver

### Mechanical Drawing & Pin Connections

Drawing No: MD150031-1



#### Pin connections

| PIN | Function                               |
|-----|--|
| 1   | RF Output                              |
| 2   | 0 Volts & Case                         |
| 3   | V <sub>CO</sub> Input or Not Connected |
| 4   | Reference Voltage or Not Connected     |
| 5   | +V <sub>DC</sub>                       |

Unit : mm

Note 1. If the specification does not specify parameters for either PIN3 or PIN4 then that respective PIN is not internally connected



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**OCXO2525S-10MHz-A-V**

25.78 x 25.78 x 14 mm OCXO with Sine wave Output

## Specifications

| Oscillator Specification              | Sym                                       | Condition  | Value     |           |       | Unit   | Notes |
|---------------------------------------|---|--|-----------|-----------|-------|--------|-------|
|                                       |   |  | Min.      | Typ.      | Max.  |        |       |
| Nominal Frequency                     | F <sub>nom</sub>                          |  |           | 10.000000 |       | MHz    |       |
| Output Waveform                       |   |  | Sine Wave |           |       |        |       |
| Initial Accuracy                      |   | @25°C±1°C<br>After turn on power 60 minutes<br>≤90 days following date code<br>V <sub>CO</sub> input voltage @+5.0V±0.001V | -0.1      |           | +0.1  | ppm    |       |
| Level                                 |   |  | +8        | +10       | +12   | dBm    |       |
| Load                                  |   |  |           | 50        |       | Ohm    |       |
| Harmonic                              |   |  |           |           | -30   | dBc    |       |
| Spurious                              |   | 10Hz to 1MHz from carrier  |           |           | -80   | dBc    |       |
| <b>Power Supply</b>                   |   |  |           |           |       |        |       |
| Voltage                               | V <sub>CC</sub>                           |  |           | +12       |       | V      |       |
| Current                               |   | @Turn on   |           |           | 500   | mA     |       |
| Steady State                          |   | @25°C±1°C  |           |           | 2.3   | W      |       |
| <b>Electrical Frequency Adjust</b>    |   |  |           |           |       |        |       |
| Control voltage range                 | V <sub>CO</sub>                           |  | +0.5      | +5.0      | +9.5  | V      |       |
| Pulling range                         |   | V <sub>CO</sub> @0.5V, Reference to frequency at nominal   |           |           | -0.4  | ppm    |       |
|                                       |   | V <sub>CO</sub> @9.5, Center voltage   | +0.4      |           |       | ppm    |       |
| Slope                                 |   |  | Positive  |           |       |        |       |
| Linearity                             |   |  | -10       |           | +10   | %      |       |
| Reference Voltage                     |   |  | +9.25     | +9.5      | +9.75 | V      |       |
| Source Resistance                     |   |  |           |           | 100   | Ohm    |       |
| Output Resistance of V <sub>ref</sub> |   |  | 10        |           |       | KOhm   |       |
| <b>Frequency Stability</b>            |   |  |           |           |       |        |       |
| VS. Temperature                       |   | -40°C to 85°C, Reference to 25°C   | -20       |           | +20   | ppb    |       |
| VS. Supply Voltage                    |   | +/-5% Change   | -1.0      |           | +1.0  | ppb    |       |
| VS. Load                              |   | +/-10% Change  | -1.0      |           | +1.0  | ppb    |       |
| Short Term                            |   | Root Allan variance  |           |           | 0.01  | ppb/s  |       |
| Warm-up                               |   | In 5 minutes @+25°C±1°C, Referenced to 1 hour  | -50       |           | +50   | ppb    |       |
| Aging                                 | Per Day                                   | At time of shipment  | -0.5      |           | +0.5  | ppb    |       |
|                                       | Daily                                     | After 30 days  | -0.5      |           | +0.5  | ppb    |       |
|                                       | Yearly                                    |  | -50       |           | +50   | ppb    |       |
|                                       | 10 Years                                  |  | -0.3      |           | +0.3  | ppm    |       |
| <b>SSB Phase Noise</b>                |   |  |           |           |       |        |       |
| Phase noise                           |   | @ 1 Hz   |           |           | -110  | dBc/Hz |       |
|                                       |   | @ 10 Hz  |           |           | -140  |        |       |
|                                       |   | @ 100 Hz   |           |           | -155  |        |       |
|                                       |   | @ 1 KHz  |           |           | -165  |        |       |
|                                       |   | @ 10 KHz   |           |           | -170  |        |       |
|                                       |   | @ 100 KHz  |           |           | -170  |        |       |
|                                       |   | @ 1 MHz  |           |           | -170  |        |       |
| <b>Environmental Conditions</b>       |   |  |           |           |       |        |       |
| Operating Temperature Range           | -40°C to +85°C                            |  |           |           |       |        |       |
| Storage Temperature Range             | -50°C to +95°C                            |  |           |           |       |        |       |
| Humidity                              | MIL-STD-202, Method 103, Test condition A |  |           |           |       |        |       |
| Vibration (Non-operating)             | MIL-STD-202, Method 201                   |  |           |           |       |        |       |
| Shock (Non-operating)                 | MIL-STD-202, Method 213, Test condition J |  |           |           |       |        |       |