# SOP-24310113-KF-I1

Advanced

## Phase Locked Oscillator, 23.5 GHz, +13 dBm, Internally Referenced

### Description:

**Model SOP-24310113-KF-I1** is a 23.5 GHz phase locked oscillator that utilizes state-of-the-art planar circuits, a high performance three terminal devices and dielectric resonator technology to generate high-quality microwave signal. The signal is phase locked to a high quality, 100 MHz internally referenced crystal oscillator to deliver superior phase noise performance. The PLO delivers a typical output power of +13 dBm and has a nominal harmonic of -25 dBc and spurious of -75 dBc with a phase noise of -104 dBc/Hz at 10 KHz offset. The oscillator has a built-in voltage regulator to further improve the signal quality and provide the protection of over voltage operation.

### Features:

- High Output Power
- Low Phase Noise
- Low Harmonic Components

### Applications:

- Radar Systems
- Communication Links
- Transmitters and Receivers

### Electrical Specifications:

| Parameter | Minimum | Typical | Maximum |
|---|---|---|---|
| Frequency | | 23.5 GHz | |
| Output Power | | +13 dBm | |
| Phase Noise (Internally Referenced) @ 10 kHz | | -104 dBc/Hz | |
| Harmonic | | -25 dBc | |
| Spurious | | -75 dBc | |
| Phase Lock Indicator (Lock) | TTL “High” | | |
| DC Voltage Supply | | +12 Vdc | |
| Frequency Stability (Internally Referenced) | | ±5 ppm | |
| Specification Temperature | | +25 ˚C | |
| Operating Temperature | 0˚C | | +50˚C |

### Mechanical Specifications:

| Item | Specification |
|---|---|
| RF Output | K (F) Connector |
| REF Output | SMA (F) Connector |
| DC Bias, Lock and VT Ports | Solder Pins |
| Case Material | Aluminum |
| Finish | Nickel Plated |
| Weight | 4 Oz (Excluding the Heatsink) |
| Size | 2.25” (W) 2.25” (L) X 1.25” (H) |
| Outline | OP-DC-E3 |

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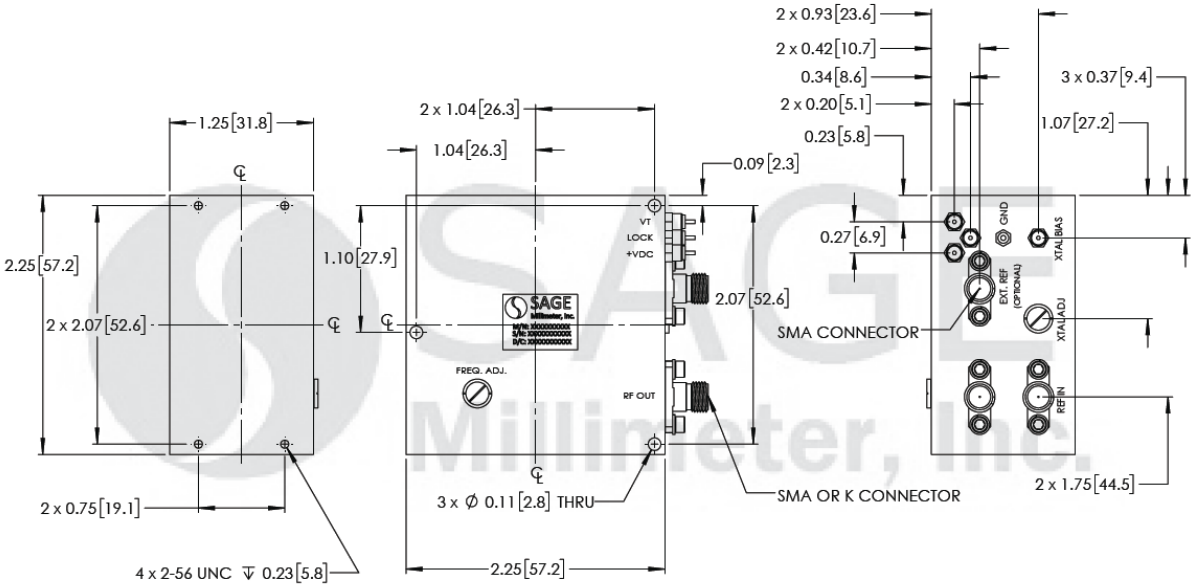
**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])




**Note:**

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Other mechanical configurations are available under different model numbers.

**Caution:**

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed **+50˚C**. Use additional heatsink or fan if necessary.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**



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