

## Phase Locked Oscillator, Externally Referenced, 18 GHz, +10 dBm

### Description:

**Model SOP-18301210-SF-E1** is a phase locked oscillator with a typical output frequency of 18 GHz and a nominal output power of +10 dBm. The PLO is externally referenced. The oscillator is phase locked to external reference with a frequency of 100 MHz and typical power of 0 dBm. The phase noise of the oscillator is dependent on the quality of the reference source. The oscillator has a minimum harmonic suppression of -25 dBc and spurious of -75 dBc.



### Features:

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

### Applications:

- Radar Systems
- Communication Links
- Transmitters and Receivers

### Electrical Specifications:

| Parameter                                   | Minimum                              | Typical | Maximum             |
|---------------------------------------------|--------------------------------------|---------|---------------------|
| Frequency                                   |                                      | 18 GHz  |                     |
| Output Power                                |                                      | +10 dBm |                     |
| Phase Noise                                 | Reference Source + 20 Log (N) + 3 dB |         |                     |
| Harmonic Suppression                        |                                      | -25 dBc |                     |
| Spurious                                    |                                      | -75 dBc |                     |
| External Reference Frequency                |                                      | 100 MHz |                     |
| External Reference Input Power              |                                      | +0 dBm  |                     |
| DC Voltage                                  | +12 V <sub>DC</sub>                  |         | +15 V <sub>DC</sub> |
| DC Supply Current                           |                                      | 250 mA  |                     |
| Frequency Stability (Externally Referenced) | Same as reference                    |         |                     |
| Frequency Stability (Internally Referenced) |                                      | ±5 ppm  |                     |
| Power Stability                             |                                      | ±1 dB   |                     |
| Operating Temperature                       | 0°C                                  |         | +50°C               |

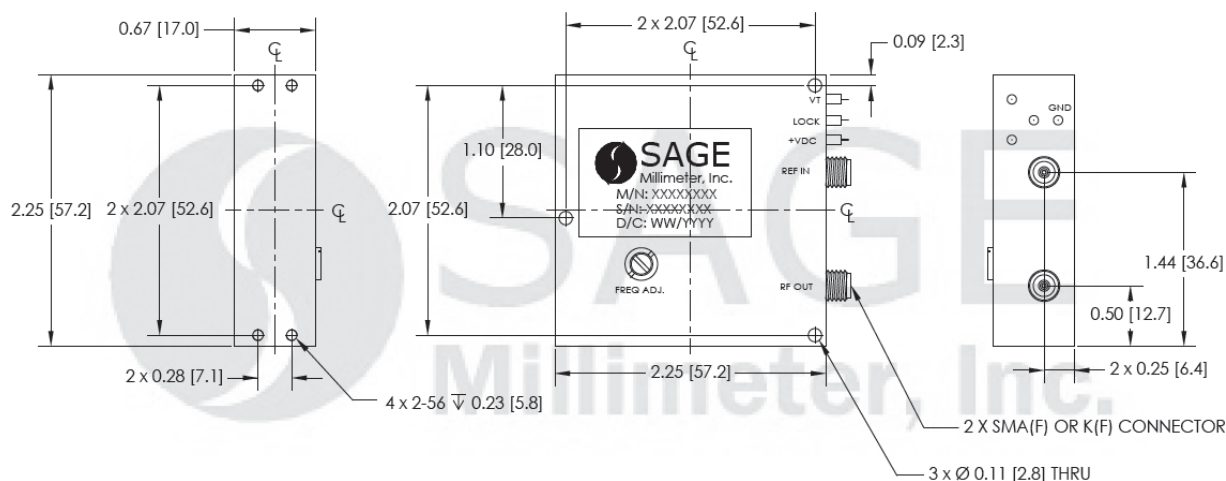
### Mechanical Specifications:

| Item                | Specification                     |
|---------------------|-----------------------------------|
| RF Output Connector | SMA(F)                            |
| REF Input Connector | SMA(F)                            |
| Bias                | Solder Pin                        |
| Size                | 2.25" (W) X 2.25" (L) X 0.67" (H) |
| Case Material       | Aluminum                          |
| Finish              | Nickel Plated                     |
| Weight              | 4 Oz                              |
| Outline             | OP-EC-E2                          |



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



**Note:**

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

**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,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**