



## 24.125 GHz Doppler Sensor Head, Dual Channel, Long Range

### Description:

**Model SSS-24317-22L-D1** is K Band, lens antenna-based Doppler sensor head that is designed and manufactured for **long range** measurements of a moving target's speed and direction. The sensor head has a center frequency of 24.125 GHz and takes a nominal bias of +5.0 VDC/650 mA. The sensor heads are configured with a lens corrected antenna, T/R diplexer, a dual channel (I/Q) receiver and a transmitter/receiver oscillator in an integrated package. Sensor heads with a single receiver are offered under model number **SSS-24317-22L-S1** and can only detect the speed of a moving target.



### Features:

- 24.125 GHz Operation
- Low Flicker Noise and High Sensitivity
- Low Harmonic Emission

### Applications:

- Traffic Management Systems
- True Ranging Systems
- Military Surveillance Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Antenna 3 dB Beamwidth		12°	
Antenna Side Lobes		-20 dB	
Antenna Gain		22 dBi	
Antenna Polarization	Right-Handed Circular		
RF Frequency Range	24.000	24.125 GHz	24.250 GHz
Transmitting Power		+17 dBm	
Receiver I/Q Phase $\Delta$	80°		100°
Receiver I/Q Amplitude $\Delta$	0 dB		2 dB
IF Frequency Range	DC		100 MHz
IF Offset Voltage		$\pm 0.25 V_{DC}$	
Frequency Stability		-0.8 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V <sub>DC</sub> /650 mA	+5.5 V <sub>DC</sub>
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

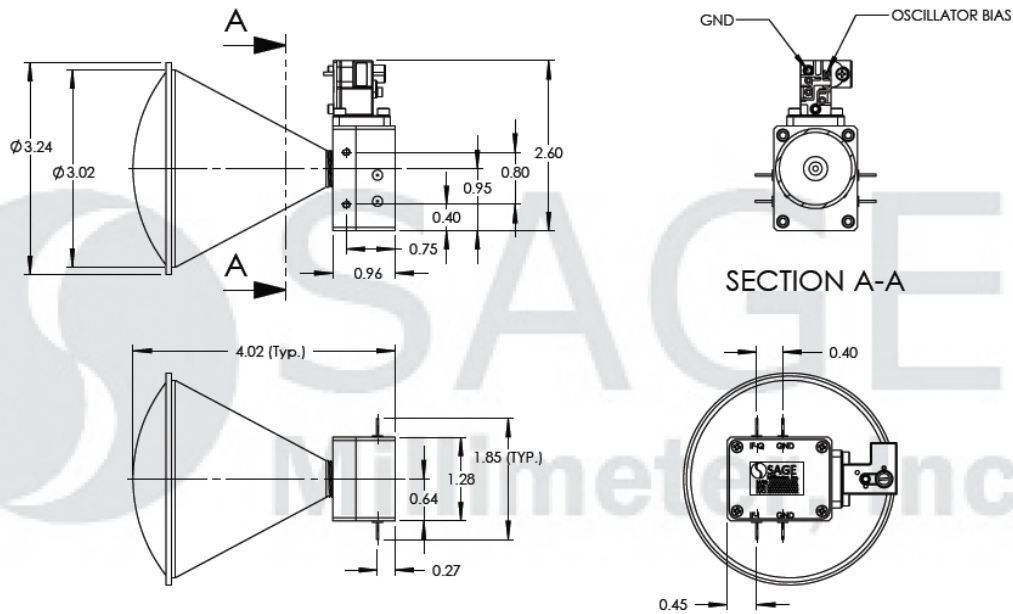


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### Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Solder Pad
Mixer IF <sub>I</sub> Port	Solder Pin
Mixer IF <sub>Q</sub> Port	Solder Pin
Mixer IF Ground	Solder Pin
Size	3.24" (W) X 3.24" (H) X 4.02" (L)
Material	Die Casted Zinc (Sensor Module), Aluminum (Mixer Housing & Horn)
Finish	Chem Film
Weight	5.0 Oz
Outline	SS-LK-D

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



#### Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

#### Caution:

- The device is static sensitive. Always follow ESD rules when working with the device.
- Wrong bias or reverse bias on the sensor will damage the device.
- Exceeding absolute maximum ratings shown will damage the device. Use additional heatsink or fan if necessary.

