



## 35.00 GHz Ranging Sensor Head, Dual Channel, Long Range

### Description:

**Model SSD-35310-NAN-D1** is Ka Band, ranging sensor head that is designed and manufactured for long range measurements of a moving or stationary target's range, speed and direction. The sensor head has a center frequency of 35 GHz and takes a nominal bias of +5.0 VDC/350 mA. The frequency modulation bandwidth of  $\pm 100$  MHz minimum is realized via a tuning voltage of 0 to +24 Volts. The sensor heads are configured with a T/R diplexer, a low noise RF amplifier, an I/Q receiver, an IF amplifier and a TX/RX oscillator in an integrated package.



### Features:

- 35.00 GHz Operation
- Low Flicker Noise and High Sensitivity
- Low Harmonic Emission
- Integrated RX /IF amplifier

### Applications:

- Traffic Management Systems
- Microwave Fence
- Military Surveillance Systems
- Weather and Environment Monitoring

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	33.9 GHz	35.0 GHz	36.1 GHz
FMCW Tuning Bandwidth	$\pm 75$ MHz	$\pm 100$ MHz	
FMCW Tuning Voltage	0		+24 Volts
Transmitting Power		+10 dBm	
Receiver Gain		19 dB	
Receiver Noise Figure		2.5 dB	
Receiver I/Q Phase $\Delta$	80°		100°
Receiver I/Q Amplitude $\Delta$	0 dB		3 dB
IF Gain		35 dB	
IF Frequency Range	DC		2 MHz
IF Offset Voltage		$\pm 0.1$ V <sub>DC</sub>	
Frequency Stability		-0.3 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V <sub>DC</sub> /350 mA	+5.5 V <sub>DC</sub>
Specification Temperature		+25°C	
Case Temperature	-40°C		+85°C



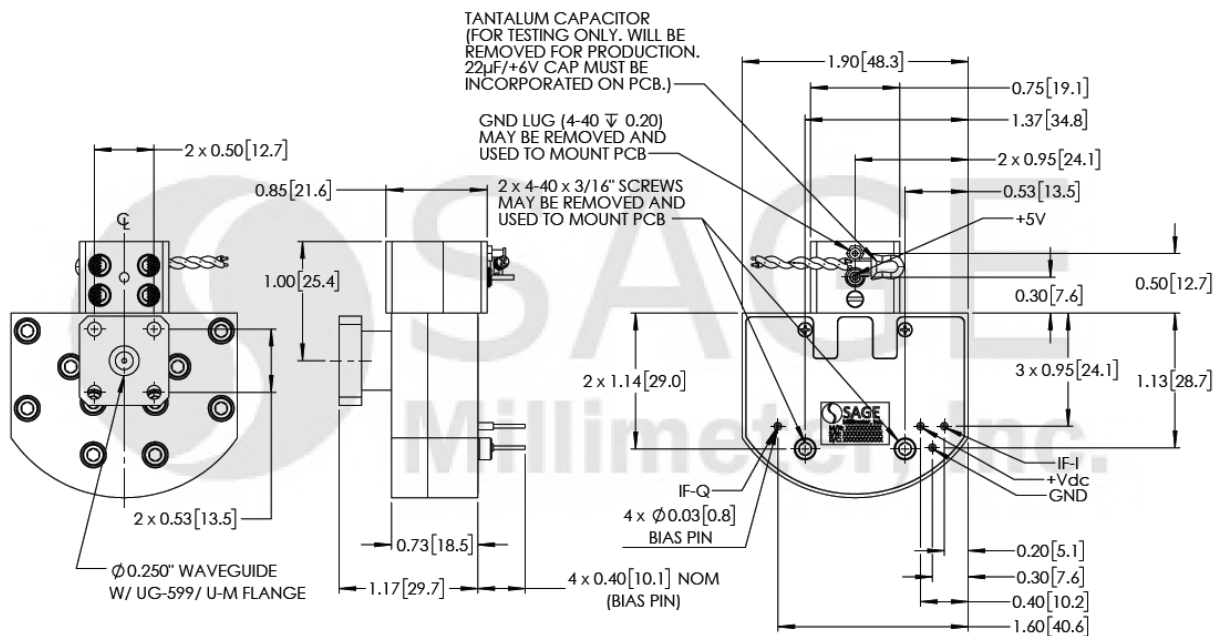


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### Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Red Wire (Bias Pin)
Varactor Bias Port	Green Wire (Bias Pin)
Mixer IF <sub>I</sub> Port	Bias Pin
Mixer IF <sub>Q</sub> Port	Bias Pin
Mixer IF Ground	Black Wire (Ground Log)
Material	Aluminum
Finishing	Chem Film
Outline	SD-NA-NAD

**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.

**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 an additional heatsink or fan if necessary.

