



35 GHz Ranging Sensor Head, Dual Channel, Long Range

Description:

Model SSS-35310-29L-D1 is Ka Band, lens antenna-based 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/250 mA. The frequency modulation bandwidth of ± 75 MHz minimum is realized via a tuning voltage of 0 to +20 Volts. 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 **SSD-35310-29L-S1** and can only detect the range and speed of a target.



Features:

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

Applications:

- Traffic Management Systems
- Microwave Fence
- Military Surveillance Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Antenna 3 dB Beamwidth		5°	
Antenna Side Lobes		-20 dB	
Antenna Gain		29 dBi	
Antenna Polarization	Right-Handed Circular		
RF Frequency Range	33.9 GHz	35.0 GHz	36.1 GHz
FMCW Tuning Bandwidth	± 75 MHz	± 100 MHz	
FMCW Tuning Voltage		0 to +20 Volts	
Transmitting Power		+10 dBm	
Receiver I/Q Phase Δ	80°		100°
Receiver I/Q Amplitude Δ	0 dB		2 dB
IF Frequency Range	DC		100 MHz
IF Offset Voltage		$\pm 0.1 V_{DC}$	
Frequency Stability		-0.3 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V _{DC} /250 mA	+5.5 V _{DC}
Specification Temperature		+25°C	
Case Temperature	-40°C		+85°C

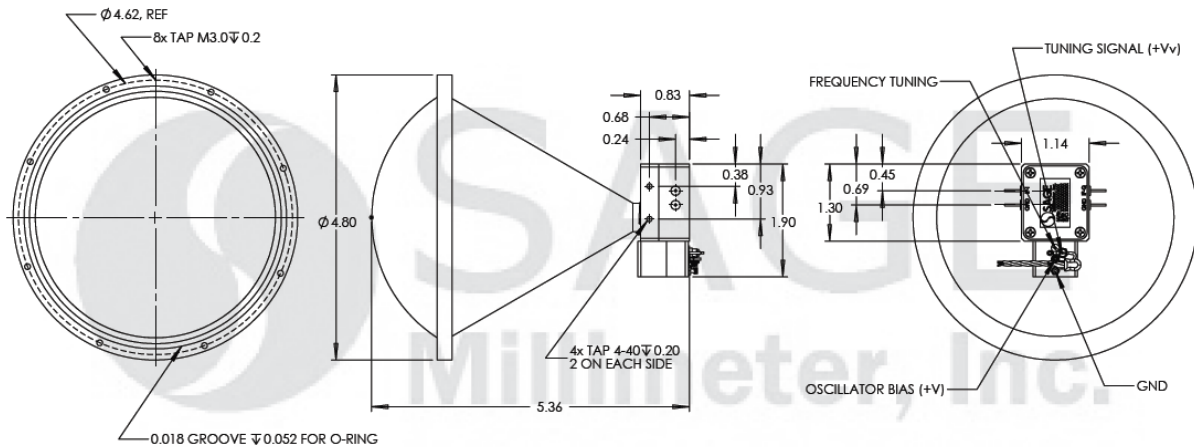


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Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Red Wire
Varactor Bias Port	Green Wire
Mixer IF Port	Solder Pin
Mixer IF Ground	Solder Pin
Size	4.80" (W) X 4.80" (H) X 5.37" (L)
Material	Aluminum
Finish	Chem Film
Weight	12.0 Oz
Outline	SD-LA-GD

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.

