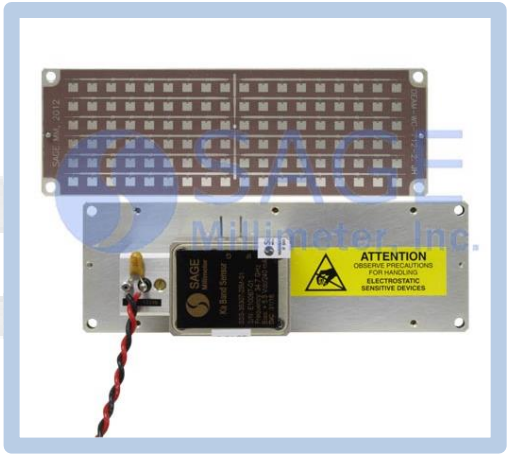
SSD-35307-20M-S1

Rev. 1.0

35 GHz Ranging Sensor Head, Single Channel, Medium Range

Description:



Model SSD-35307-20M-S1 is Ka Band, microstrip antenna-based ranging sensor head that is designed and manufactured for **medium range** measurements of a moving or stationary target's range and speed. The sensor head has a center frequency of 35 GHz and takes a nominal bias of +5.5 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 microstrip antenna, T/R diplexer, a single channel receiver and a transmitter/receiver oscillator in an integrated package. Sensor heads with a dual receiver are offered under model number **SSD-35307-20M-D1** and can also detect the direction of a target in addition to the range and speed.

Features:

- 35.0 GHz FMCW Operation
- Low Flick 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		4.6˚(H) x 15˚(V)	
Antenna Side Lobes		-20 dB	
Antenna Gain		20 dBi	
Antenna Polarization		Linear, Vertical	
RF Center Frequency		35 GHz	
FMCW Tuning Bandwidth	±75 MHz	±100 MHz	
FMCW Tuning Voltage		0 to +20 Volts	
Transmitting Power		+7 dBm	
IF Frequency Range	DC		100 MHz
IF Offset Voltage		±0.25 V_{DC}	
Frequency Stability		-0.3 MHz/˚C`	
Power Stability		-0.03 dB/˚C	
DC Supply Voltage		+5.5 V_{DC}/250 mA	+6.0 V_{DC}
Specification Temperature		+25˚C	
Operating Temperature	-40˚C		+85˚C

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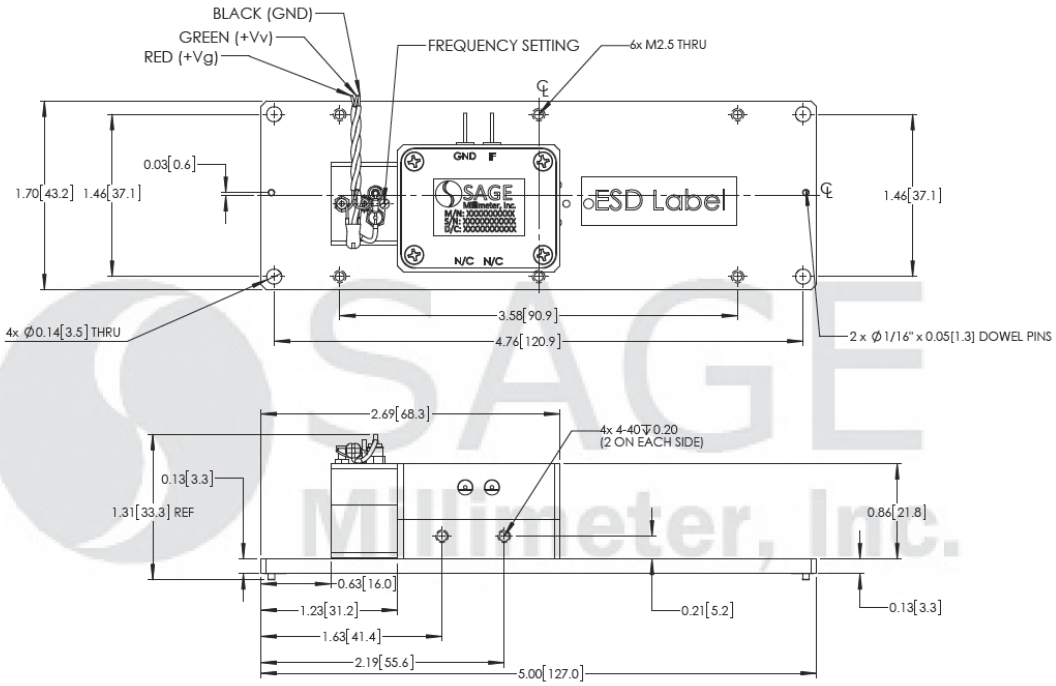
Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Red Wire
Varactor Bias Port	Green Wire
Mixer IF Port	Solder Pin
Mixer IF Ground	Solder Pin
Common Ground	Black Wire
Size	5.00” (W) X 1.31” (H) X 1.70” (L)
Material	Die Casted Zinc (Sensor Module), Aluminum (Mixer Housing & Horn)
Finish	Chem Film
Weight	4.5 Oz
Outline	SD-MA-25

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



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.

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