

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

### Description:

**Model SSS-24307-22M-DW** is a K Band, microstrip antenna-based Doppler sensor head that is designed and manufactured for **short 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/250 mA. The sensor heads are configured with a microstrip antenna, T/R diplexer, a dual channel (I/Q) receiver and a transmitter/receiver oscillator in an integrated die-cast housing. Sensor heads with a single receiver are offered under model number **SSS-24307-22M-SW** 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
- Law Enforcement
- Military Surveillance Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Antenna 3 dB Beamwidth		4.6° (H) x 14.8° (V)	
Antenna Side Lobes		-20 dBc	
Antenna Gain		22 dBi	
Antenna Polarization		Linear, Vertical	
RF Frequency Range	24.050 GHz	24.125 GHz	24.200 GHz
Transmitting Power		+7 dBm	
IF Frequency Range	DC		100 MHz
Receiver I/Q Phase $\Delta$	60°		120°
Receiver I/Q Amplitude $\Delta$		0 dB	3 dB
IF Offset Voltage		-0.5 V <sub>DC</sub>	
Frequency Stability		-0.8 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V <sub>DC</sub> /250 mA	+5.5 V <sub>DC</sub>
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C



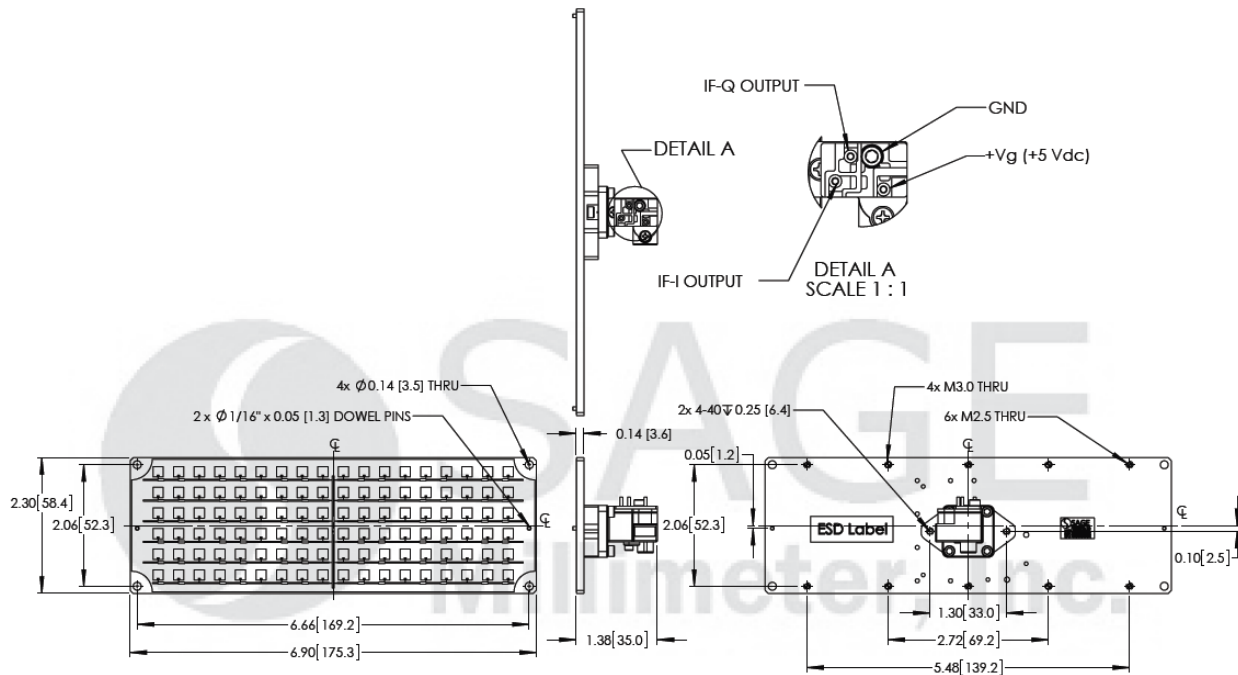


## 24.125 GHz Doppler Sensor Head, Dual Channel, Short Range

### Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Solder Pad
Mixer IF <sub>I</sub> Port	Solder Pad
Mixer IF <sub>Q</sub> Port	Solder Pad
Ground	Solder Pad
Size	6.90" (W) X 2.30" (L) X 1.38" (H)
Sensor Module Case Material	Die Casted Zinc
Finish	Chem Film
Weight	4.5 Oz
Outline	SS-MK-25DW

### 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.

