SSS-24307-27M-D1

24 GHz Doppler Sensor Head, Dual Channel

Description:

Model SSS-24307-27M-D1 is a K Band, microstrip antennabased Doppler sensor head that is designed and manufactured for <u>long range</u> measurements of a moving target's speed and direction. The sensor head has a center frequency of 24 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-24307-27M-S1** and can only detect the speed of a moving target.



Features:

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

Applications:

- Traffic Management Systems
- Law Enforcement
- Military Surveillance Systems

Parameter	Minimum	Typical	Maximum
Antenna 3 dB Beamwidth		4.6° (H) x 6.8° (V)	
Antenna Side Lobes		-20 dBc	
Antenna Gain		27 dBi	
Antenna Polarization		Linear	
RF Frequency Range		24 GHz	
Transmitting Power		+7 dBm	
Receiver I/Q Phase Δ	60°		120°
Receiver I/Q Amplitude Δ	B 8 1 1 1 1	0 dB	3 dB
IF Frequency Range	DC	neter	100 MHz
IF Offset Voltage	1411111	-0.5 V _{DC}	
Frequency Stability		-0.8 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V _{DC} /250 mA	+5.5 V _{DC}
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

Electrical Specifications:



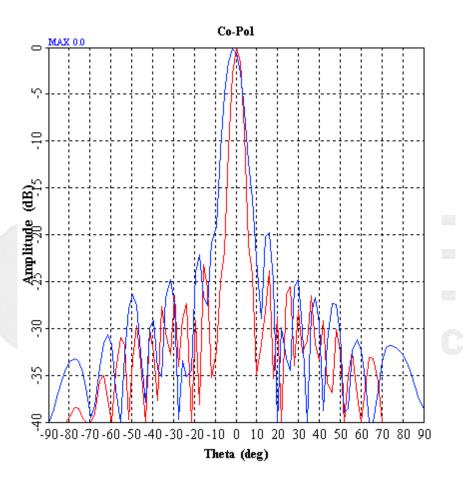
www.eravant.com | 501 Amapola, Torrance, CA 90501 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com

24 GHz Doppler Sensor Head, Dual Channel

Mechanical Specifications:

Item	Specifications		
Gunn Oscillator Bias Port	Solder Pad		
Mixer IF ₁ Port	Solder Pin		
Mixer IF _Q Port	Solder Pin		
Ground	Solder Pin and Solder Pad		
Size	6.90" (W) X 4.53" (L) X 1.22" (H)		
Material	Aluminum		
Finish	Chem Film		
Weight	5.5 Oz		
Outline	SS-MK-27D		

Measured Co-pol E and H Plane Patterns



www.eravant.com | 501 Amapola, Torrance, CA 90501 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com ١Q

÷

24 GHz Doppler Sensor Head, Dual Channel

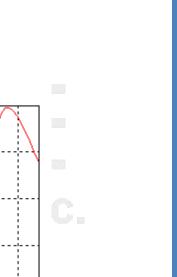
Measured Cross-pol E and H Plane Patterns

X-Pol



www.eravant.com | 501 Amapola, Torrance, CA 90501 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com

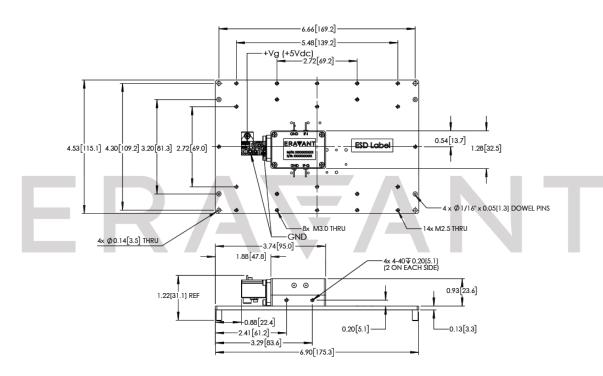
inc.



Rev 1.0

24 GHz Doppler Sensor Head, Dual Channel

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



Note:

• Eravant 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.



www.eravant.com | 501 Amapola, Torrance, CA 90501 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: support@eravant.com