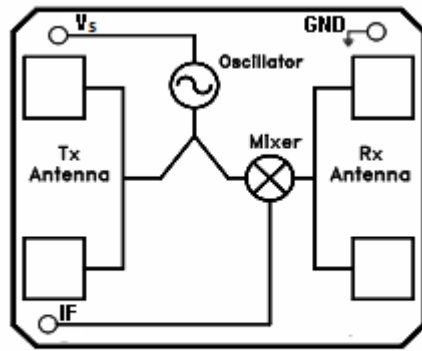
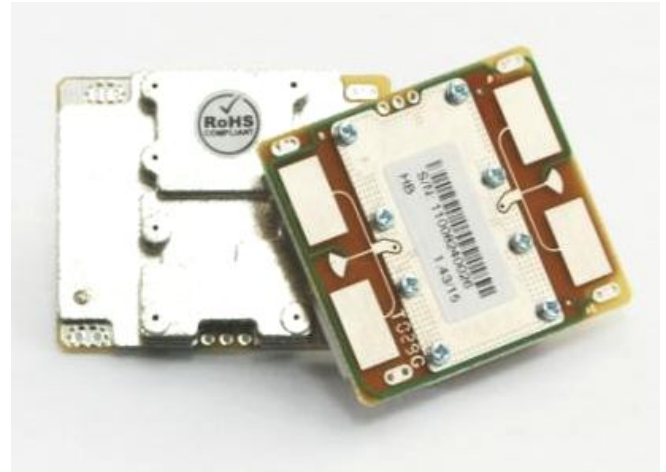


X-Band 3V Microwave Motion Sensor Modules



Block diagram and connection



Description

HB190-3 and HB590-3 Microwave Motion Sensors are X-Band Bi-Static Doppler transceiver modules. Their built-in Dielectric Resonator Oscillator (DRO) and a pair of microstrip patch antenna array, make them ideal for OEM usage in motion detection equipment.

Requiring only 3V supply, these modules are suitable for battery-operated portable applications. Nevertheless, they can also be used in fixed systems. Areas of applications include intrusion alerts, dual technology with Passive Infrared (PIR) sensor, auto-door opening and vehicle speed measurement.

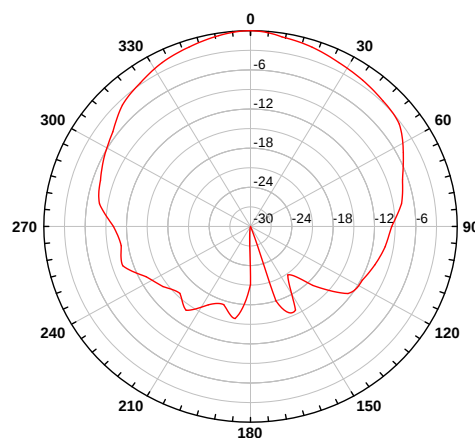
Features

- Low current consumption
- CW or Pulse operation
- Flat profile
- Low harmonics emission

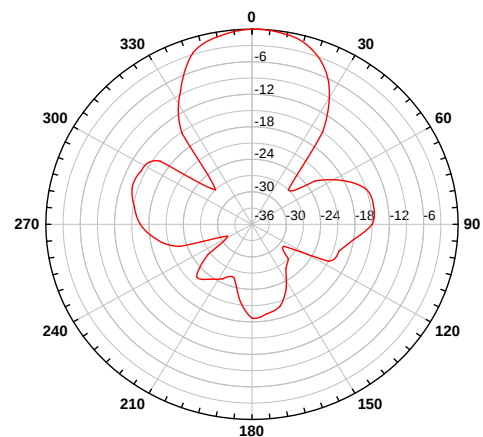
Applications

- Battery operated portable sensing device
- Microwave-PIR motion detector
- Speed measurement
- Lighting control

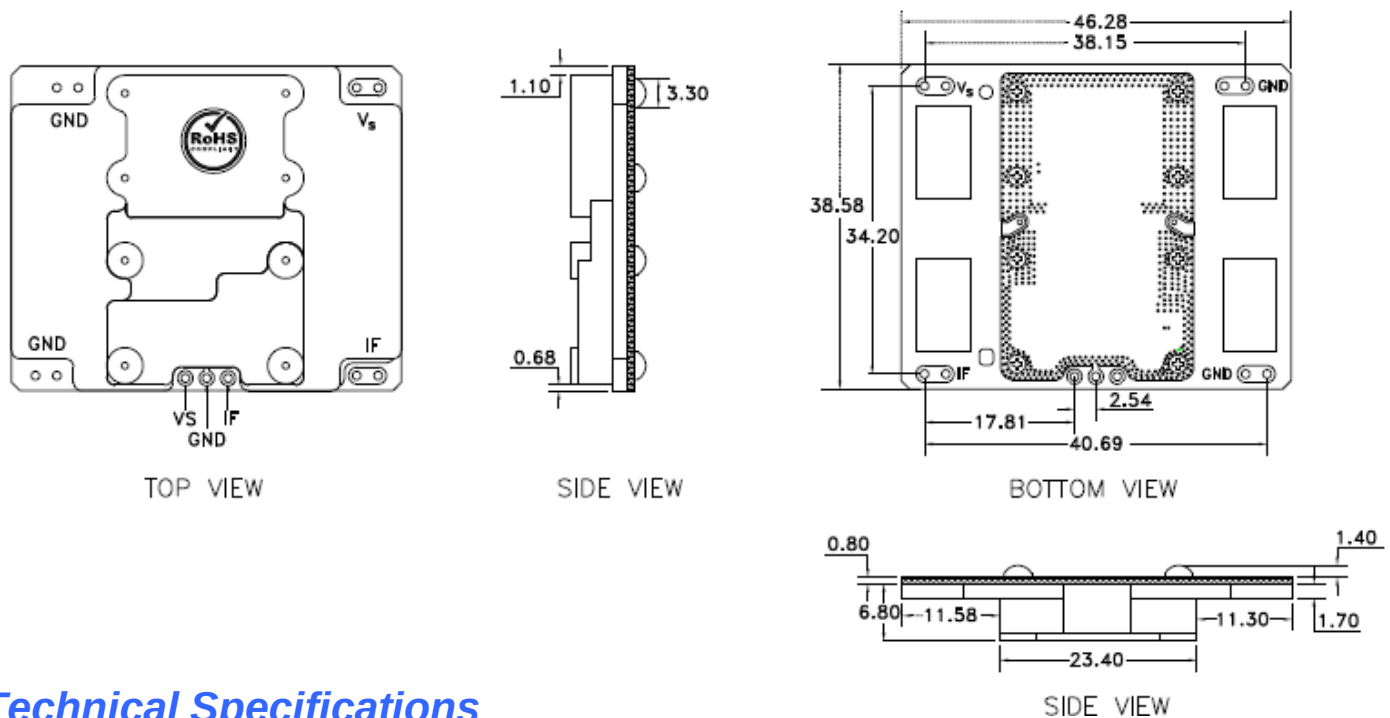
Antenna Beam Pattern



Azimuth



Elevation

Outline Diagram (All dimensions in mm)**Technical Specifications**

Unless noted otherwise, the specifications are measured with +3VDC, CW operation, 12 k Ω load at ambient temperature of +25°C.

Parameter	Notes	Min	Typ	Max	Units
Frequency Setting (HB190)	1 & 2	10.520	10.525	10.530	GHz
Frequency Setting (HB590)	2	10.582	10.587	10.592	GHz
Radiated Power (EIRP)			18		dBm
Spurious Emission				-30	dBm
Settling Time			3	6	μ Sec
Received Signal Strength	3		200		μ Vp-p
Noise	4			3	μ Vrms
Antenna Beam-width (3 dB) – Azimuth			80		°
Antenna Beam-width (3 dB) - Elevation			40		°
Supply Voltage, V _s		2.85	3.00	3.15	VDC
Current Consumption			30	40	mA
Pulse Repetition Frequency	5		2		KHz
Pulse Width	5	10			μ Sec
Operating Temperature		-15		55	°C
Weight			10		gm

Note 1: The radiated emission is designed to meet the requirements of FCC Part 15.245.

Note 2: The radiated emission is designed to meet the requirements of EN 300 440.

Note 3: The Received Signal Strength (RSS) is measured at the total 2 ways path loss of 93dB.

Note 4: The noise voltages are measured from 10Hz to 100Hz at the output port, inside an Anechoic chamber.

Note 5: Pulse operation.

Note 6: The design, manufacturing process and specifications of this device are subject to change without prior notice.

Note 7: **CAUTION: ELECTROSTATIC SENSITIVE DEVICE.** Observe precautions for handling and storage.

VER 1.00