HB180

FMCW X-band Microwave Sensor





Features:

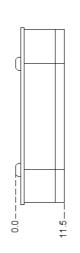
- FMCW function
- Low current consumption
- Small and flat profile
- CW and pulse mode

Applications:

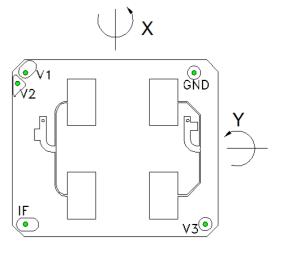
- Motion detection
- Distance measurement
- Lighting control
- Security alarm
- Automatic door control

The HB180 microwave sensor is an X-band bi-static FMCW transceiver. It consists of one voltage tuned dielectric resonator oscillator (VT-DRO), a single balanced mixer and a pair of antenna arrays. It is suitable for FMCW or FSK ranging motion detectors.

REAR VIEW



SIDE VIEW



FRONT VIEW - ANTENNA

All dimensions are in mm.

Module Outline

Name	Description	Diameter	Plated Thru	
GND	Ground	1mm	Yes	
V1	+5 V _{DC}	1mm	Yes	
V2	NC	1mm	Yes	
V3	Tuning voltage.	1mm	Yes	
IF	IF output	1mm	Yes	

Note 1: Complies with EN 300 440.

Note 2: Complies with FCC Part 15.245.

Note 3: The tuning voltage V3 should be from 0.5 to 5 $V_{\text{DC}},$ with a load less than 1k Ohm.

Note 4: <u>CAUTION</u>: ELECTROSTATIC SENSITIVE DEVICE. Observe precautions for handling and storage.

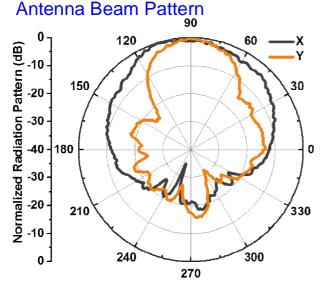


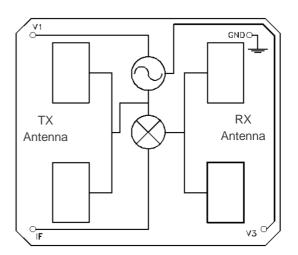






Block Diagram





Technical Specifications

Unless noted otherwise, the specifications are measured in CW mode, V1 = +5 V_{DC} and 12k ohm load at +25°C.

Parameter	Remarks	Min	Typical	Max	Units
Operating Conditions					
Supply voltage, V1		4.75	5	5.25	V _{DC}
Tuning voltage, V3		0.5		5	V _{DC}
Current consumption			30	40	mA
Operating temperature		-15		55	°C
Recommended Pulse Scheme		-	-		-
Pulse frequency	Pulse mode		2		KHz
Duty cycle	Pulse mode		2		%
Transmitter		-	-		-
Operating frequency		10.522		10.527	GHz
Tuning slope			-1		MHz/V
Radiated power (EIRP)		10	13	14	dBm
Spurious emission				-30	dBm
Settling time			3	6	µSec
Antenna			•		
Antenna beam-width (3 dB) - X			80		0
Antenna beam-width (3 dB) - Y			40		0
Physical Properties		•	-	•	-
Dimensions			46.5×40.0×11.5		mm
Weight			17		g

