

SPECIFICATION

Operating Frequencies	2 4 5 0 MHz \pm 5 MHz (-10/+55°C)																								
Maximum equivalent isotropically radiated power	power (EIRP) < 1 mW CW																								
Spurious emission	<table> <tr> <td>frequency band</td> <td>41 to 68 MHz</td> <td>power</td> <td>< 4 nW</td> </tr> <tr> <td>frequency band</td> <td>87.5 to 118 MHz</td> <td>power</td> <td>< 4 nW</td> </tr> <tr> <td>frequency band</td> <td>162 to 230 MHz</td> <td>power</td> <td>< 4 nW</td> </tr> <tr> <td>frequency band</td> <td>470 to 862 MHz</td> <td>power</td> <td>< 4 nW</td> </tr> <tr> <td>other frequencies</td> <td>< 1000MHz</td> <td>power</td> <td>< 250 nW</td> </tr> <tr> <td>other frequencies</td> <td>> 1000MHz</td> <td>power</td> <td>< 1 microW</td> </tr> </table>	frequency band	41 to 68 MHz	power	< 4 nW	frequency band	87.5 to 118 MHz	power	< 4 nW	frequency band	162 to 230 MHz	power	< 4 nW	frequency band	470 to 862 MHz	power	< 4 nW	other frequencies	< 1000MHz	power	< 250 nW	other frequencies	> 1000MHz	power	< 1 microW
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GENERAL NOTES

The microwave vehicle alarm sensor is a volumetric sensor designed to detect intrusions into the passenger compartment of vehicles.

It generates an alarm condition in response to the doppler frequency effect provided by the reflection of microwave from the objects moving inside the vehicle.

The microwave vehicle alarm sensor provides to a good volumetric coverage with a high immunity to false alarm.

It is not sensitive to air movement, so it is possible to leave the windows and the sun-roof open.

The microwave vehicle alarm sensor is a single surface mount PCB assembly with a 4 way connector to interface with the alarm system.

GENERAL SPECIFICATIONS

Operating voltage 9 to 16 Vdc (vehicle battery)

Maximum operating temperature +85 °C

minimum operating temperature -30 °C

Standby current 6 mA

Detection ranges 0.6 to 0.9 m

Detectable speed range 0.2 m/sec to 1.5 m/sec

Detetction performance

Standard target : a steel plate mesuring 200*150*1.5mm.

The microwave sensor responds to a start/stop motion of the standard target moving towsars the detector throuth the distance of a minimum 0.6m and maximum of 0.9m from the sensor.

The speed range of the start/stop motion is between 0.2m/sec and 1.5m/sec.

GENERAL FUNCTION

The microwave vehicle alarm sensor uses the doppler rader principle for operation.

The microwave sensor uses a very stable transistor oscillator to generate the low power microwave signal.

This signal is then transmitted via a simple printed dippler antenna to give an approximately omni-directional berm pattern.

The microwave signal will be reflected off stationary objects(the vehicle interior) with no doppler frequency shift and hence no output alarm trigger.

However, if any object within the range of the unit is moving, then a doppler frequency shift is generated.

The frequency shift is proportional to the velocity of the target.

The doppler shift frequency is then recived via the same antenna and the non-linear action of the oscillator transistor will mix the transmitted and received signals together.

The output from the oscillator is small amplitude audio frequency signal.

The amplitude of the audio frequency is proportional to the distance and size of the target.

This frequency signal is amplified and actively filtered to reject frequencies outside the known area of interest.

Comparators decide if the signal is large enough to alarm trigger the output.

BLOCK DIAGRAM

