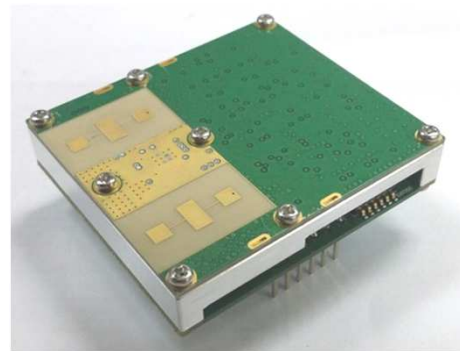


# Data Sheet WDR300

Ver. 1.2 – 02/26/2020

The Model WDR300 radar is released to be used for monotonic movement detection. The small form factor provides a low cost solution for many applications.



## Features

- 24 GHz ISM-band CW Doppler Radar
- Dual 3 patch antenna
- Single 5VDC power supply
- Small form factor and flexible interfaces including wireless or wired communications for easy applications
- Quadrature demodulation for robust and radial velocity detection (approaching and receding)
- Long range movement detection and low power consumption
- Target classification (monotonic movement detection for low velocity movement)
- Minimized false alarms caused by random and/or periodic motion, which is essential in outdoor applications

## Applications

- Low cost, low power consumption and high performance monotonic movement detection
- Industrial sensor systems
- Energy saving of indoor/outdoor lamps by movement detection

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## Absolute Maximum ratings

Parameter	Symbol	Rating	Unit
Supplied voltage	$V_{DC}$	+5	VDC
Operating case temperature range	$T_C$	-40 to +85	°C
Storage temperature range	$T_{STG}$	-50 to +130	°C

## Characteristics

Parameter		Performance	Condition
Tx Frequency		24.05~24.25 GHz	ISM band
Output EIRP		13dBm max	
Antenna	beam width	60° x 35°	Horizontal x Vertical
	polarization	linear	
Velocity		0.4km/h~200km/h	
Data Update*		0.5Hz/10Hz	Low speed mode/High speed mode
Size		50 x 45 x 10 mm <sup>3</sup>	
Interface		Header 6pin	
Supply voltage		+5 VDC	
Power Consumption		1.0W	

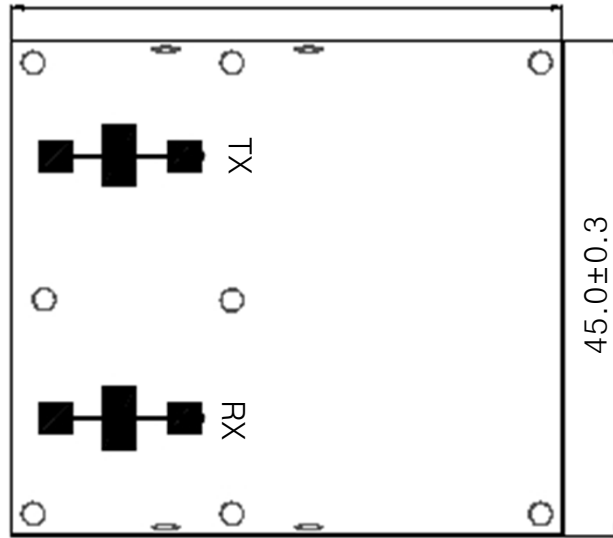
\* Target classification algorithm is applied only for low speed mode measurement

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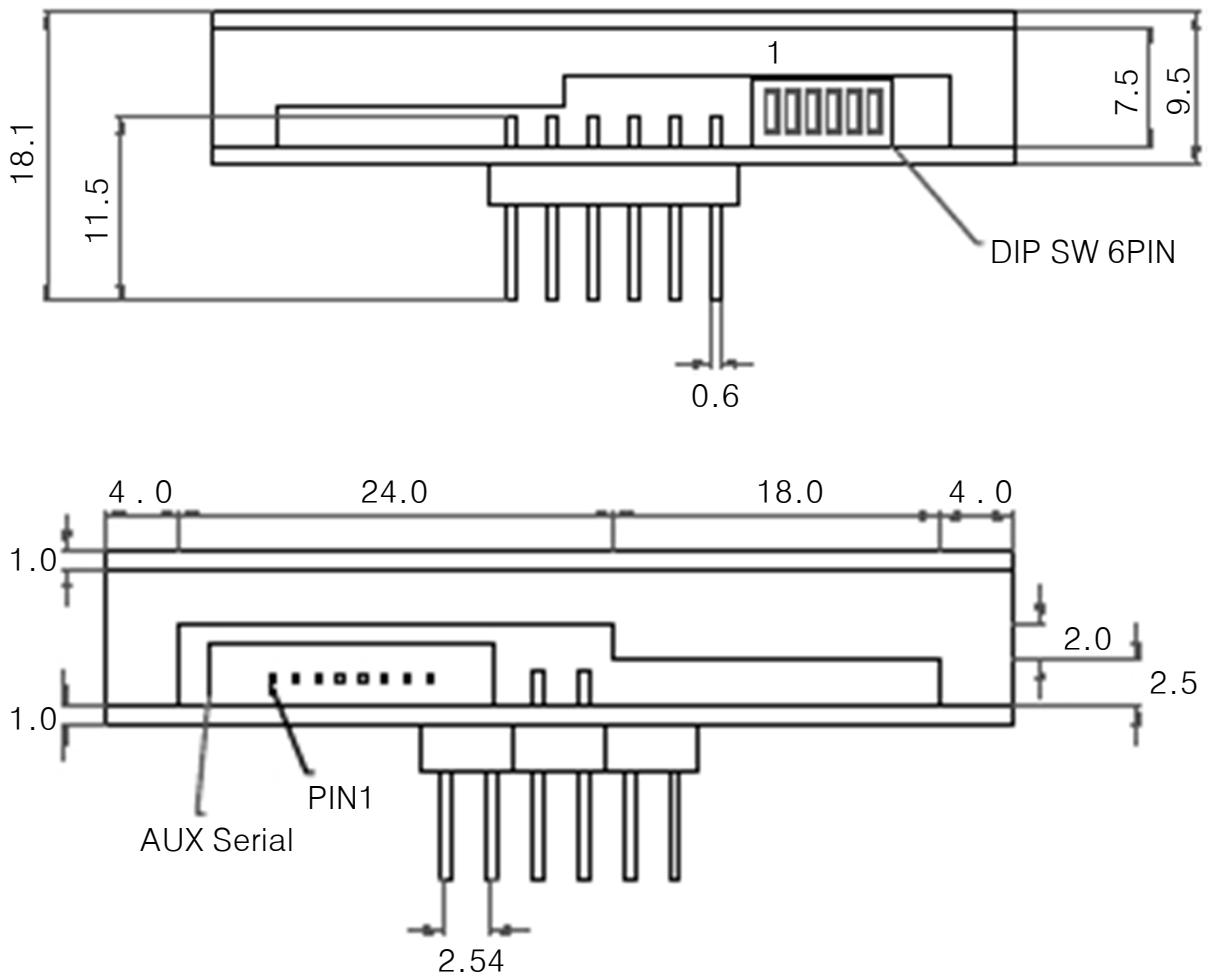
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### Outline Dimensions

Top View



Side View

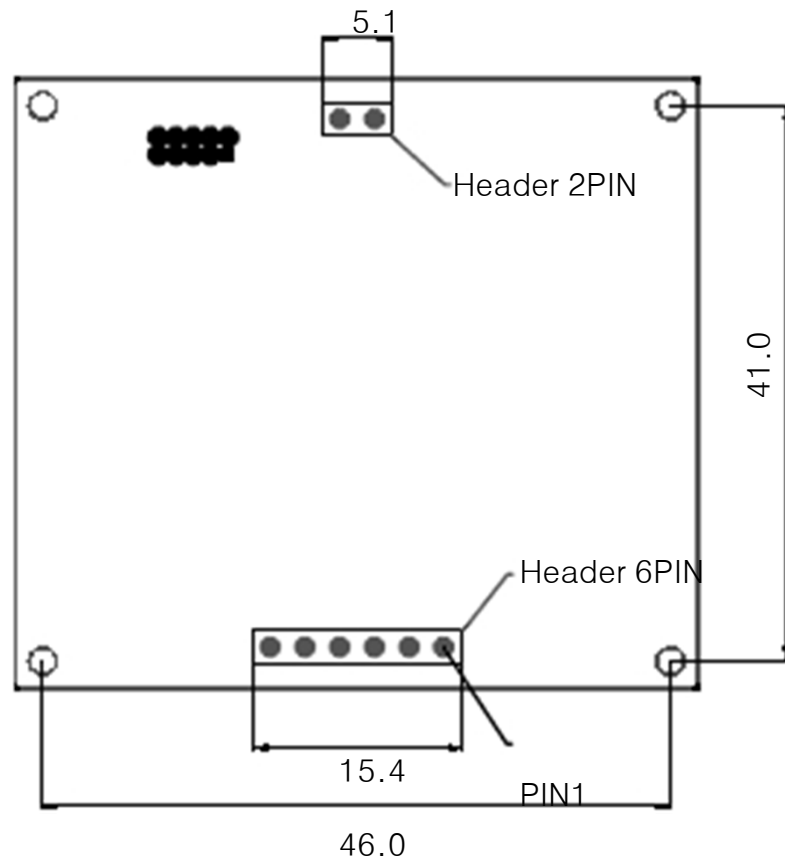


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## Outline Dimensions

### Bottom View

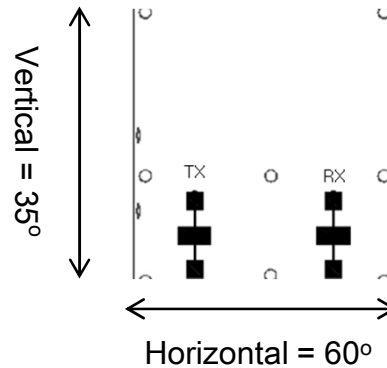


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## Antenna orientation

-3dB detection angle



## Header Connector Pin Configuration

Type	Pin#	Function	Description
Header 6pin	1	VDC	+5VDC Input
	2	GND	Ground
	3	GPIO	3.3V Digital Output ("H" for detection)
	4	-	-
	5	RS485-B*	UART_TX(opt.)
	6	RS485-A*	UART_RX(opt.)
Header 2pin	Mechanical Fixing Purpose Only		

\* See WDR300-AN1

## AUX Serial Connector

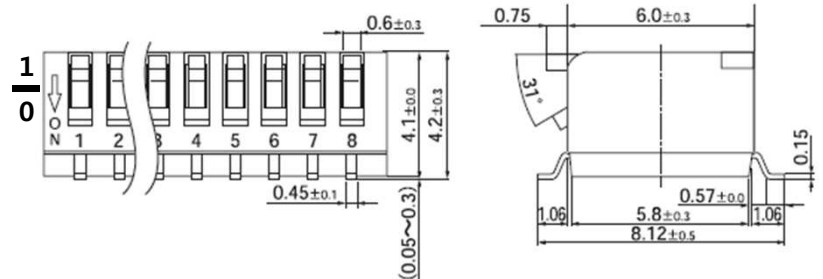
Model : 53261-0871, 1.25mm HDR 8 CKT Right-Angle

OEM Purposes Only

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## DIP Switch 6 Pin Setting



Function PIN#		#6	#5	#4	#3	#2	#1
Line Voltage Rejection	50Hz	0					
	60Hz (Default)	1					
Sensitivity <sup>(1)</sup>	Low		0	0			
	Mid		0	1			
	High		1	0			
	Max (Default)		1	1			
Tx CW Frequency	24.2GHz				0		
	24.1 GHz (Default)				1		
Rain TH <sup>(2)</sup>	Low					0	0
	Mid					0	1
	High					1	0
	Max (Default)					1	1

(1) Detection Range : Max > High > Mid > Low

(2) If the rainfall is higher than Rain TH, Header Pin 3(GPIO) set to high(3.3V)

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## Serial Mode Interface

Default :

- Line Voltage Rejection = 60Hz,
- Sensitivity = 0 dB
- Tx CW = 24.10MHz,
- Tx off = ON,
- Measure Mode= Short Mode

Baud rate = 115200bps, Parity = none, Data bits = 8bit, Stop = 1bit

#3pin Of Header 6pin : when detected 3.3V Digital Output for 2s

See WDR300 programming manual for the details

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## ESD-INFORMATION



This Wooriro sensor is sensitive to damage from ESD. Normal precautions as usually applied to ESD sensitive devices are sufficient when handling the device. Touching the signal output pins has to be avoided at any time before soldering or plugging the device into a motherboard.

## APPROVAL

Wooriro Standard Product. Changes will not be notified as long as there is no influence on form, fit and within this datasheet specified function of the product.

This Data Sheet contains the technical specifications of the described product. All previous versions of this Data Sheet are no longer valid.

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