

ISM 433MHz Helical Antenna

Ground cleared under antenna, clearance area 8.50x40.00 mm. Pulse Part Number: W3127



Features

- Plastic supported helical antenna
- Size (helix): Length 35.35mm, \varnothing 7mm
- Low weight (1.8g)
- Mounting on top of the PWB
- Through hole mechanical support pegs
- Feed contact by soldering via PWB hole
- Tray packing
- RoHS Compliant Product

Applications

- Remote controls, toys etc.
- 433MHz ISM Band Systems

Electrical specifications @ +25 °C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.

ISM 433MHz

Typical performance (test board size 100x40 mm, PWB ground clearance area 8.50 x40.00 mm), tuning and matching circuit: tuning 12nH series, matching 6.8nH shunt for Pulse standard evaluation board.

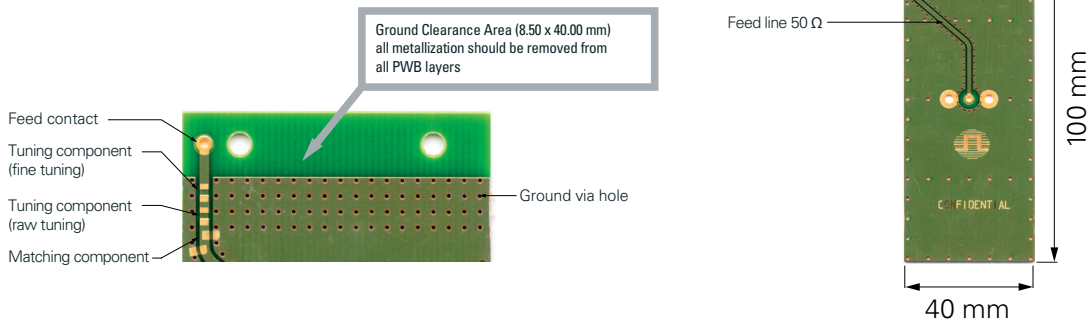
Frequency Range [MHz]	Max Gain [dBi]	Return loss min. [dB]	Impedance [Ω]	Operating Temperature [°C]
433 – 435	-2.9	-15	50	-40 to +85

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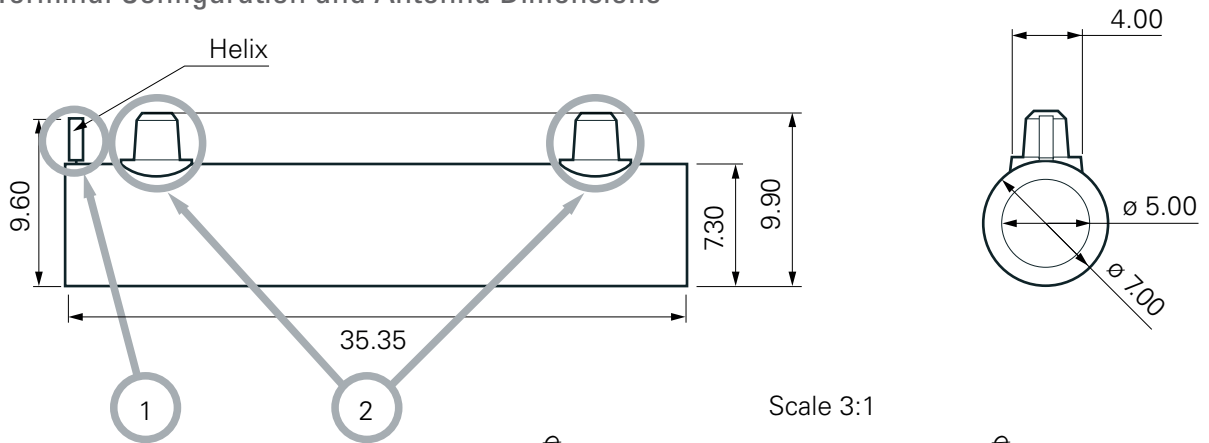
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Terminal Configuration

PWB Layout



Terminal Configuration and Antenna Dimensions



Antenna Features

No.	Terminal Name	Terminal Dimensions
1	Feed terminal	Wire diameter 0.8mm
2	Support	Diameter 2.5mm, length 2.6mm



Matching circuit needs to be placed on PCB close to antenna feed terminal.

Matching component values depend on device construction; size, surrounding mechanics, materials etc..

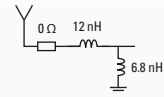
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Typical Electrical Characteristics (T=25 °C)

Typical Return Loss S11/ impedance,

Measured on the 100x40mm test board with tuning and matching circuit



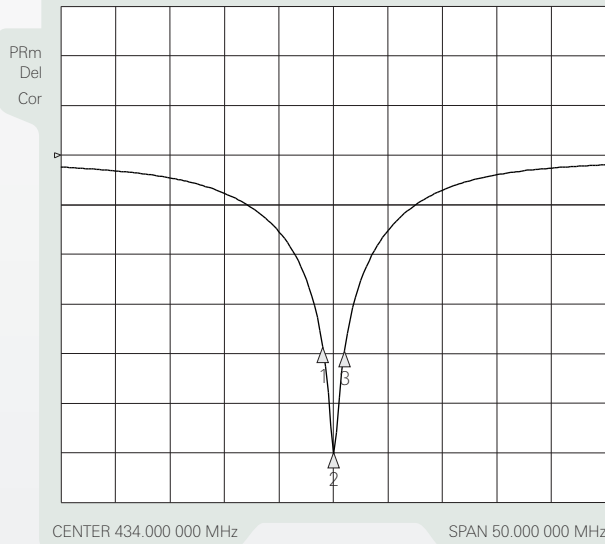
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CH1Markers

- 1. -21.132 dB 433 MHz
- 2. -32.939 dB 434 MHz
- 3. -21.458 dB 435 MHz

CH1 S11 log MAG 5 dB/REF 0 dB

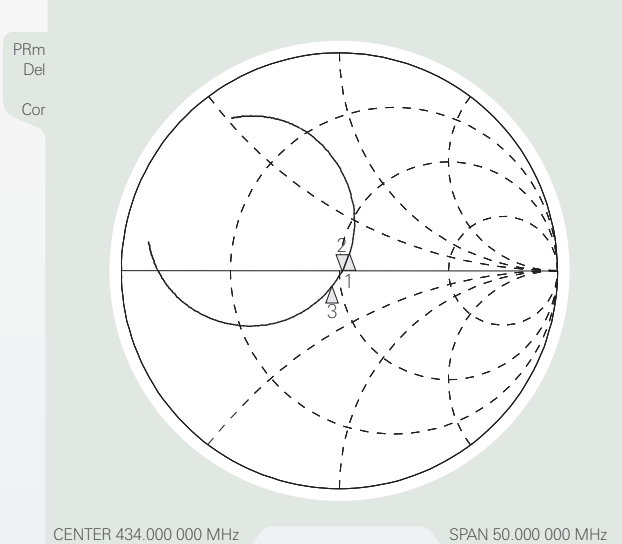


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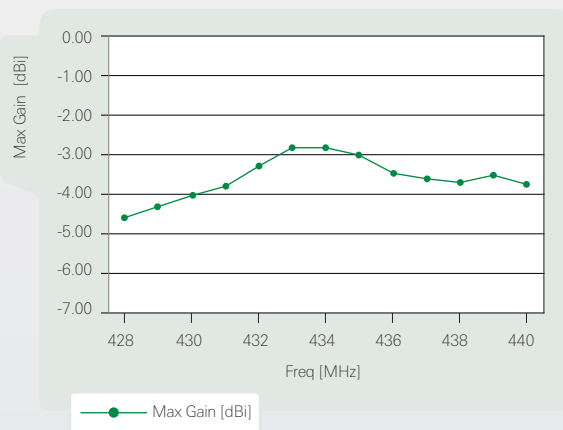
- | | | |
|-----------------|------------|-----------|
| 1. 54.908 Ω | 7.666 Ω | 433 MHz |
| 2. 51.811 Ω | -777.34 mΩ | 471.76 pF |
| 434.000 000 MHz | | |
| 3. 46.588 Ω | -7.293 Ω | 435 MHz |

CH1 S11 1 U FS



Free space maximum gain, PWB ground clearance area 8.50 x 40.00 mm

W3127 Max Gain



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Typical Free space Radiation Patterns

