

# 1.575 GHz GPS Ceramic Chip Antenna

On Ground type, ie. solid ground plane under antenna, top surface ground removal 10.80 x 6.25 mm.

Pulse Part Number: W3009



## Features

- Omnidirectional radiation
- Low profile
- Compact size W x L x H (10 x 3.2 x 4 mm)
- Low weight (600 mg)
- Lead free materials
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packing
- RoHS Compliant Product

## Applications

- GPS L1 band
- 1.575 GHz

## Electrical specifications @ +25 °C

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

## GPS

Typical performance (test board size 80 x 37 mm, PWB top surface ground removal area 10.80 x 6.25 mm)

Frequency Range [MHz]	RHCP Gain [dBic]	Linear Max Gain [dBi]	Efficiency [%] / [dB]	Return loss min. [dB]	Impedance [ $\Omega$ ]	Operating Temperature [°C]
1575.42 +/-10	0.7 (Peak) 0.3 (Band edges)	3 (Peak) 2.5 (Band edges)	80 / -1 (Peak) 75 / -1.25 (Band edges)	-10	50	-40 to +85

## Pulse Finland Oy

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[www.pulseeng.com/antennas](http://www.pulseeng.com/antennas)



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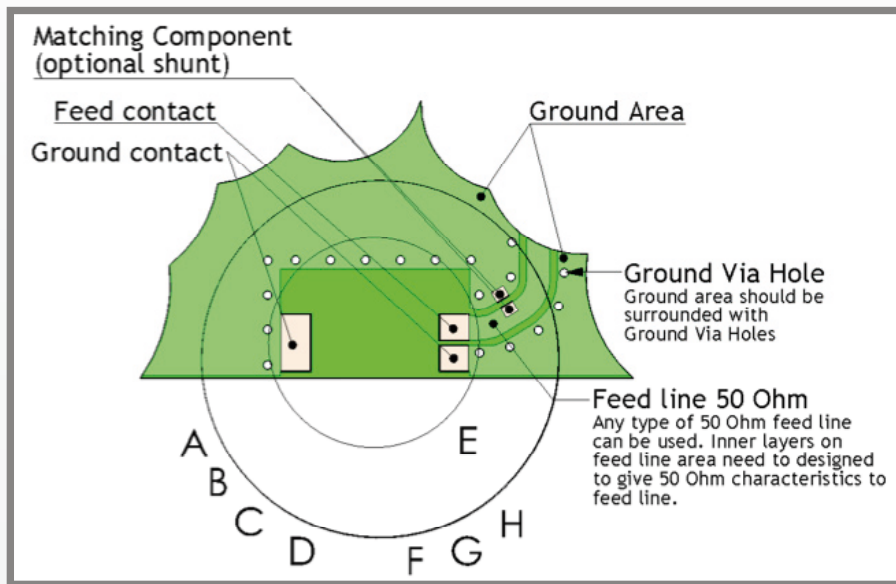
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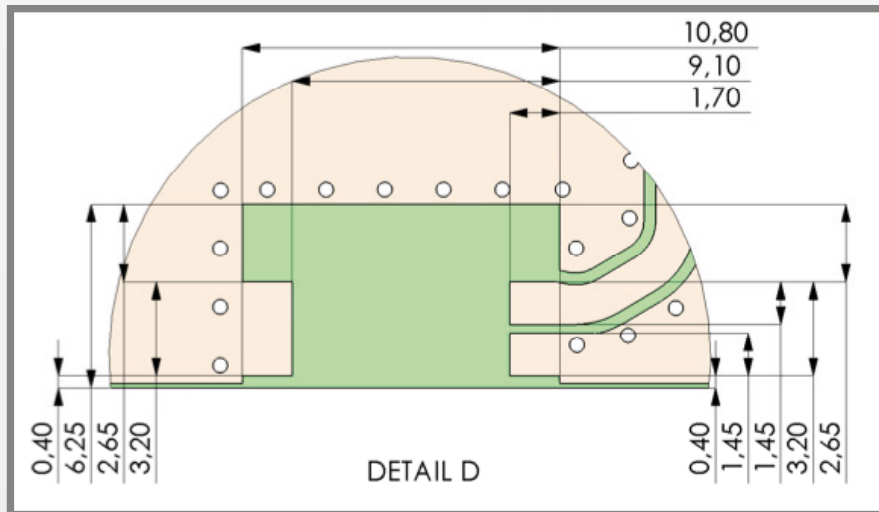
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## Terminal Configuration

Layout



Pad dimensions in top copper



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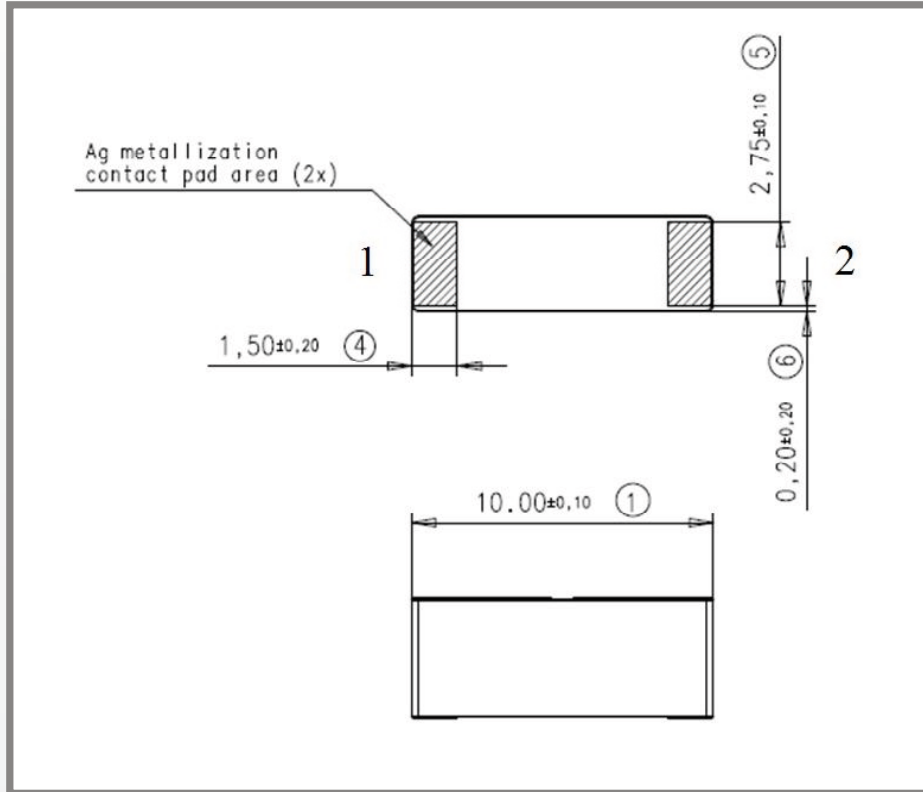
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## Terminal Configuration

Antenna



No.	Terminal Name	Terminal Dimensions
1	Feed / GND	1.50 x 2.75 mm
2	Feed / GND	1.50 x 2.75 mm

Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND

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## Typical Electrical Characteristics (T=25 °C)

Measured on the 80 x 37 mm test board with matching circuit (2.2 pF shunt matching capacitor on feed).

## Typical Return Loss S11/ impedance, free space efficiency and gain

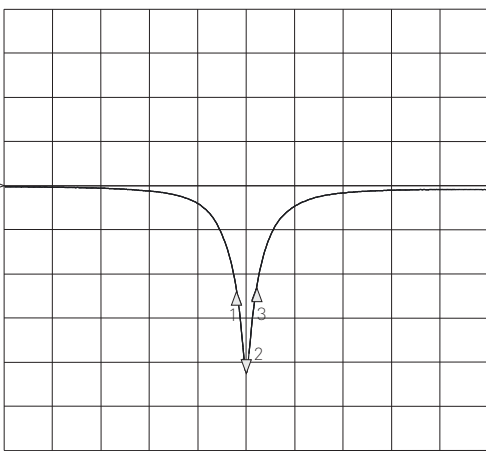
### GPS Ceramic Chip Antenna

25 May 2007 07:22:17

CH1Markers

- 1. -12.032 dB 1.56500 GHz
- 2. -20.839 dB 1.575420 MHz
- 3. -11.637 dB 1.58500 GHz

CH1 S11 LOG 5 dB/REF 0 dB



CENTER 1.575.000 000 MHz

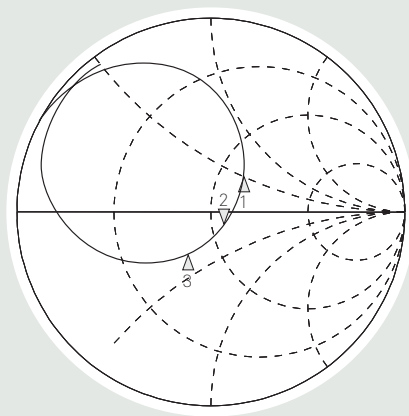
SPAN 500.000 000 MHz

### GPS Ceramic Chip Antenna

25 May 2007 07:23:38

- 1. 64.203 Ω 25.500 Ω 1.56500 GHz
- 2. 56.211 Ω -8.5977 Ω 11.750 pF  
1.575420 000 MHz
- 3. 33.688 Ω -17.396 Ω 1.58500 GHz

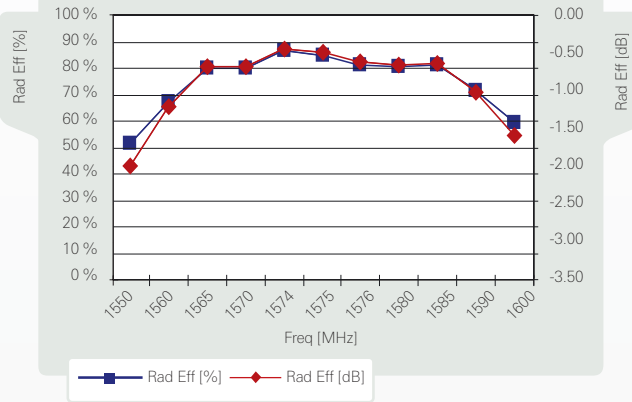
CH1 S11 1 U FS



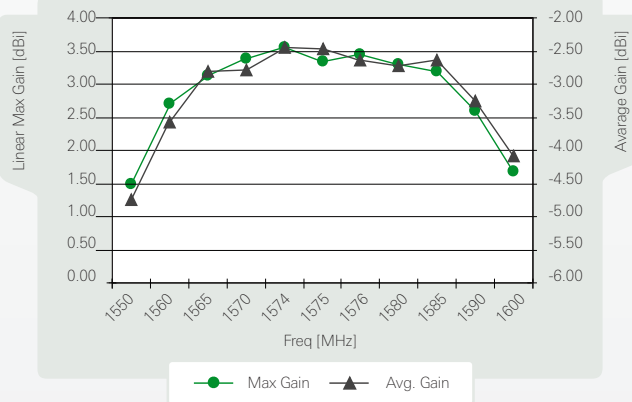
CENTER 1.575.000 000 MHz

SPAN 500.000 000 MHz

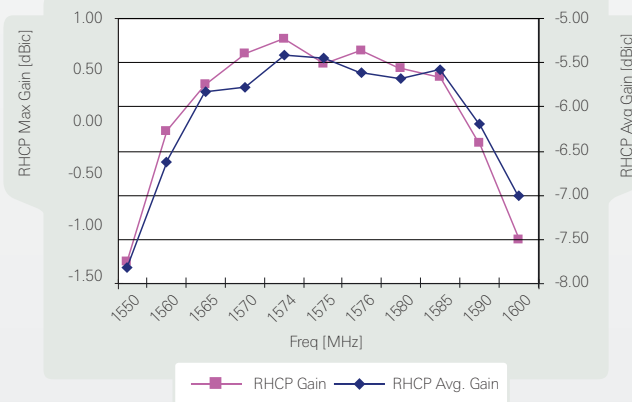
### GPS OG 10 x 3.2 x 4 mm



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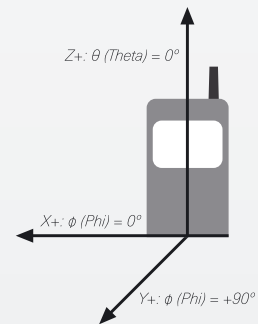
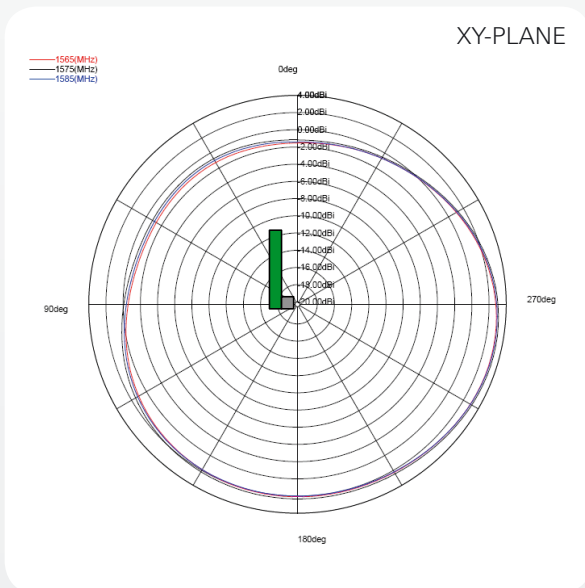
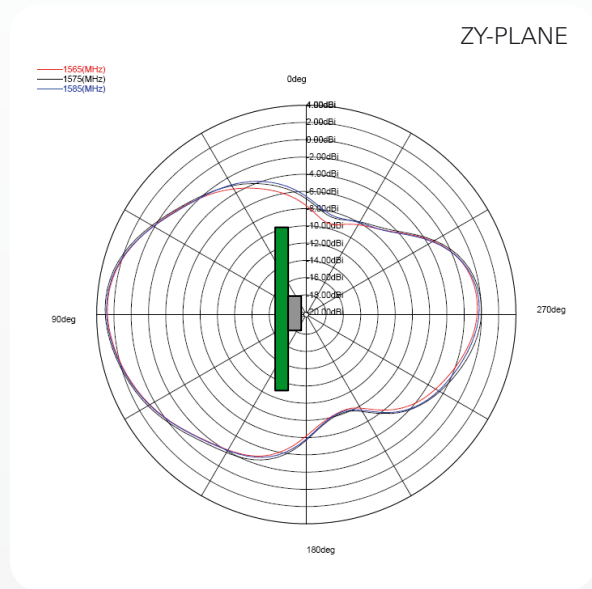
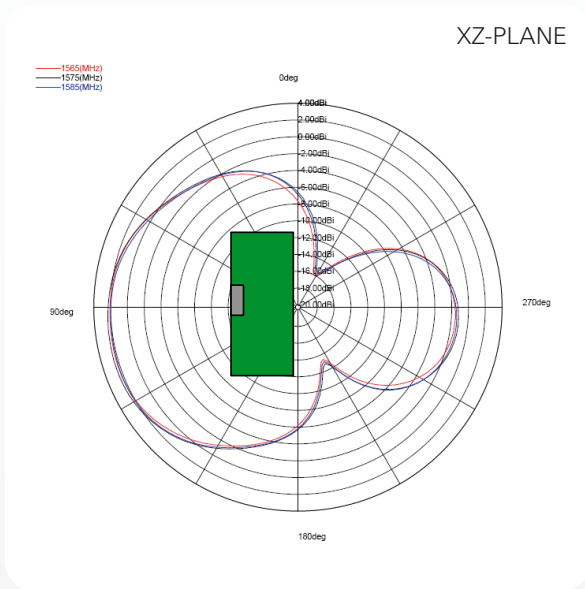
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## Typical Free Space Radiation Patterns



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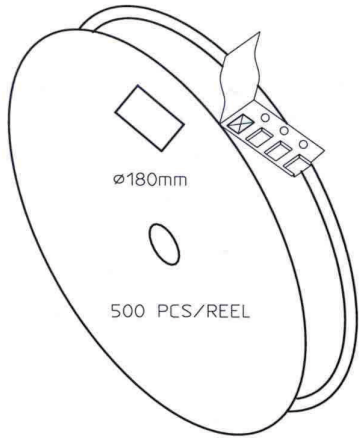
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## W3009 GPS Antenna Packing

Packing form



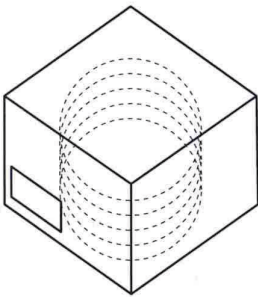
Ø180mm  
500 PCS/REEL

CARRIER TAPE H85-00158  
width=24,00 depth=4.15  
COVER TAPE H85-00159  
width=21.20

LENGTH OF TAPE:

- Leader section: min 350 mm before component section
- Trailer section: min 40 mm after component section.

Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.


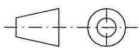


BOX H85-00128                    1 pcs  
(182x182x125)

- LABEL                            1 pcs/BOX

REEL H85-00160                 4 pcs  
(D180, W28)

- REEL LABEL                    1 pcs/REEL

MATERIAL			
HANDLINGS			
		RATIO	DRWN 160107 PeHa H
			DGNER
PRODUCT H90-OY800-F01P01			CHKD
			APPRD
DENOMINATION PACKING FORM			APPRD BY
			C
			B
			A
		VERSION	MOD/DATE/NAME