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)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1575.42 +/- 10</td>
<td>0.7 (Peak)</td>
<td>3 (Peak)</td>
<td>80 / -1 (Peak)</td>
<td>-10</td>
<td>50</td>
<td>-40 to +85</td>
</tr>
<tr>
<td></td>
<td>0.3 (Band edges)</td>
<td>2.5 (Band edges)</td>
<td>75 / -1.25 (Band edges)</td>
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Terminal Configuration

**Layout**

<table>
<thead>
<tr>
<th>Pad</th>
<th>dimensions</th>
<th>in</th>
<th>top</th>
<th>copper</th>
</tr>
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</table>

Pad dimensions in top copper

- Feed contact
- Ground contact
- Ground Via Hole
- Feed line 50 Ohm

Any type of 50 Ohm feed line can be used. Inner layers on feed line area need to designed to give 50 Ohm characteristics to feed line.
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### Terminal Configuration

<table>
<thead>
<tr>
<th>No.</th>
<th>Terminal Name</th>
<th>Terminal Dimensions</th>
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<tbody>
<tr>
<td>1</td>
<td>Feed / GND</td>
<td>1.50 x 2.75 mm</td>
</tr>
<tr>
<td>2</td>
<td>Feed / GND</td>
<td>1.50 x 2.75 mm</td>
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Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND.
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**Pulse Part Number: W3009**

**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 07:20:17

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<tr>
<th>CH1</th>
<th>S11</th>
<th>dBFS</th>
<th>0.00</th>
<th>0.00</th>
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<td>30.56</td>
<td>6.25</td>
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**GPS OG 10 x 3.2 x 4 mm**

**GPS Ceramic Chip Antenna**
25 May 2007 07:23:38

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*Pulse Part Number: W3009*

Typical Free Space Radiation Patterns
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**W3009 GPS Antenna Packing**

Packing form

- 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
  - (182x182x125)
  - 1 pcs
  - LABEL
  - 1 pcs/BOX
- REEL H85-00160
  - (D180, W28)
  - 4 pcs
  - REEL LABEL
  - 1 pcs/REEL