Monarch Series: Satellite Navigation System

Antenna GPS/GLONASS/Beidou/Galileo

Part# W3010

Features
- Omni directional radiation
- Low profile
- Compact size W x L x H (3.2 x 10.0 x 2.0 mm)
- Low weight (310 mg)
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packaging
- RoHS Compliant Product

Applications
- Systems: GPS/GLONASS/Beidou/Galileo
- 1560 - 1610 MHz
- Global Navigation
- Asset and Fleet Tracking
- Mobile Devices
- Industrial, Internet of Things

Electrical specifications @ +25 °C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.
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Covered positioning systems: GPS, GLONASS, Beidou, Galileo
Typical performance (test board size 80x37 mm, PWB ground clearance area 10.80 x 6.25 mm)

<table>
<thead>
<tr>
<th>ELECTRICAL SPECIFICATIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY (MHz)</td>
<td>1560-1610 MHz</td>
</tr>
<tr>
<td>NOMINAL IMPEDANCE (Ω)</td>
<td>50</td>
</tr>
<tr>
<td>RETURN LOSS</td>
<td>&lt; -12dB</td>
</tr>
<tr>
<td>VSWR min</td>
<td>1.6:1</td>
</tr>
<tr>
<td>EFFICIENCY</td>
<td>-1.2 dB</td>
</tr>
<tr>
<td>EFFICIENCY</td>
<td>75%</td>
</tr>
<tr>
<td>GAIN MAX</td>
<td>3 dBi±1 dBi</td>
</tr>
<tr>
<td>GAIN MAX RHCP</td>
<td>1 dBi±1 dBi</td>
</tr>
<tr>
<td>POWER WITHSTANDING</td>
<td>2 watts</td>
</tr>
<tr>
<td>CONNECTOR TYPE</td>
<td>SMD</td>
</tr>
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</table>

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<thead>
<tr>
<th>ENVIRONMENTAL SPECIFICATIONS</th>
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<tbody>
<tr>
<td>OPERATING TEMPERATURE</td>
<td>-40 to +85 °C</td>
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<tr>
<th>MECHANICAL SPECIFICATIONS</th>
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<tbody>
<tr>
<td>SIZE</td>
<td>3.2 x 10.0 x 2.0 mm</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>0.310g</td>
</tr>
</tbody>
</table>
Ceramic Chip Antenna (Ground cleared under antenna, clearance area 10.80 x 6.25 mm)

**Terminal Configuration**

**Layout**

<table>
<thead>
<tr>
<th>No.</th>
<th>Terminal Name</th>
<th>Terminal Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feed</td>
<td>1.70 x 1.45 mm</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>1.70 x 1.45 mm</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
<td>1.70 x 3.20 mm</td>
</tr>
</tbody>
</table>

GROUND CLEARANCE AREA (10.80 x 6.25 mm) all metallization should be removed from all PWB layers.
Ceramic Chip Antenna

Ceramic Chip Antenna (Ground cleared under antenna, clearance area 10.80 x 6.25 mm)

Terminal Configuration

Antenna

<table>
<thead>
<tr>
<th>No.</th>
<th>Terminal Name</th>
<th>Terminal Dimensions</th>
</tr>
</thead>
<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>
</tr>
</tbody>
</table>

Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND
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(Ground cleared under antenna, clearance area 10.80 x 6.25 mm)

Typical Electrical Characteristics (T=25 °C)
Measured on the 80 x 37 mm test board without matching circuit

Typical Return Loss S11/ impedance

Free space efficiency and maximum gain

Total Efficiency

Gain

RHCP Gain

pulseelectronics.com/products/antennas

L192.C  2/16
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Typical Free space Radiation Patterns

Radiation pattern coordinates

XZ-Plane
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YZ-Plane

XY-Plane
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Antenna Packing
Packing form

CARRIER TAPE HB5-00188
width=24.00 depth=2.20
COVER TAPE HB5-00159
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 HB5-00128
(182x182x125)
- LABEL 1 pcs
- REEL HB5-00160
(D180,W28)
- REEL LABEL 4 pcs

MATERIAL HANDLINGS

PRODUCT H90-DY113-F01P01

Packing Form