19654 Eighth Street East
P.O. Box 517
Sonoma, CA 95476
(707) 996.5201
www.worldproducts.com
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WPANT63012-R1A

SMD style Ceramic GPS L1 band Antenna

Application

A SMD-style ceramic patch antenna for wireless devices at L1 band GPS frequencies.

The antenna can be tuned to any other frequency 15XX MHz and the corresponding part number would be WPANT63012-R1AXX.

We can assist your engineers to optimize mounting positions for these antennas in your specific application and can further assist to troubleshoot system integration issues such as TRP/TIS and FCC requirements. We specialize in developing customized Antenna solutions. Please contact sales@worldproducts.com with your specific application requirements.
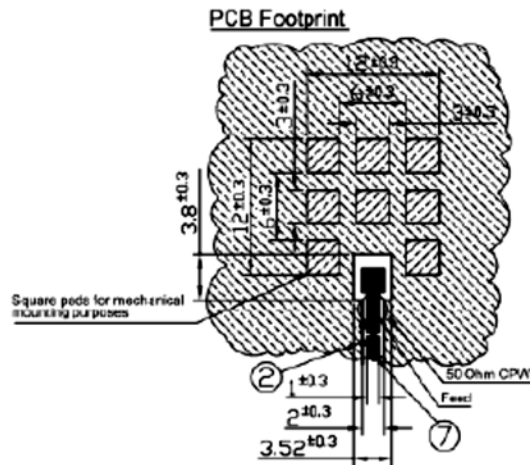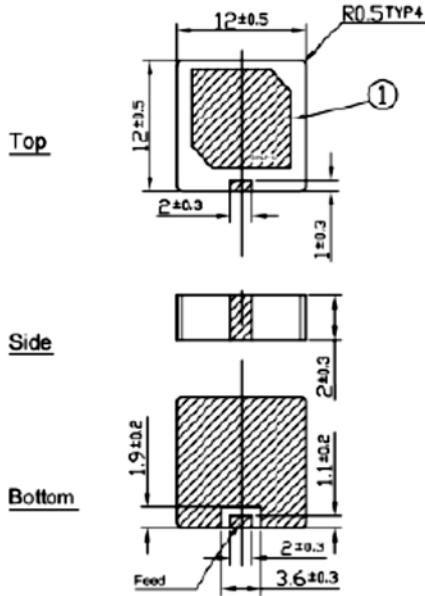
Electrical Properties

Operating Frequency	1567 – 1583 MHz
Approximate Antenna Impedance [Ω]	50Ω
VSWR (Typical)	< 2:1 @ 1575 MHz
Peak Gain [dBic] (Typical)	-2.5 dBic @ Zenith
Polarization	RHCP
Axial Ratio [dB] (Typical)	5 dB Max

Mechanical / Environmental Properties

Antenna Dimensions	12mm x 12mm x 2mm
Antenna Color	Brown
Antenna Substrate	Ceramic (Dielectric Alumina)
Electrode / Ground Base	Ag Plated
Operating / Storage Temperature	-40°C to +90°C
Environmental	Meets standards for UL 94V-0
Hazardous Materials	RoHS Compliant

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Dimensions of the Antenna and Board Layout

Top

Side

Bottom

PCB Footprint

Square pads for mechanical
mounting purposes

50 Ohm CPW

Feed

NOTE:
1. Silver area
2. Solder mask
3. Area to be soldered
4. Feed area
5. Clearance area
6. Match Component (Capacitor)
7. Unique dimensioning according to your PCB inductor and capacitor values according to your specific device

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Recommended Reflow Temperature Profile
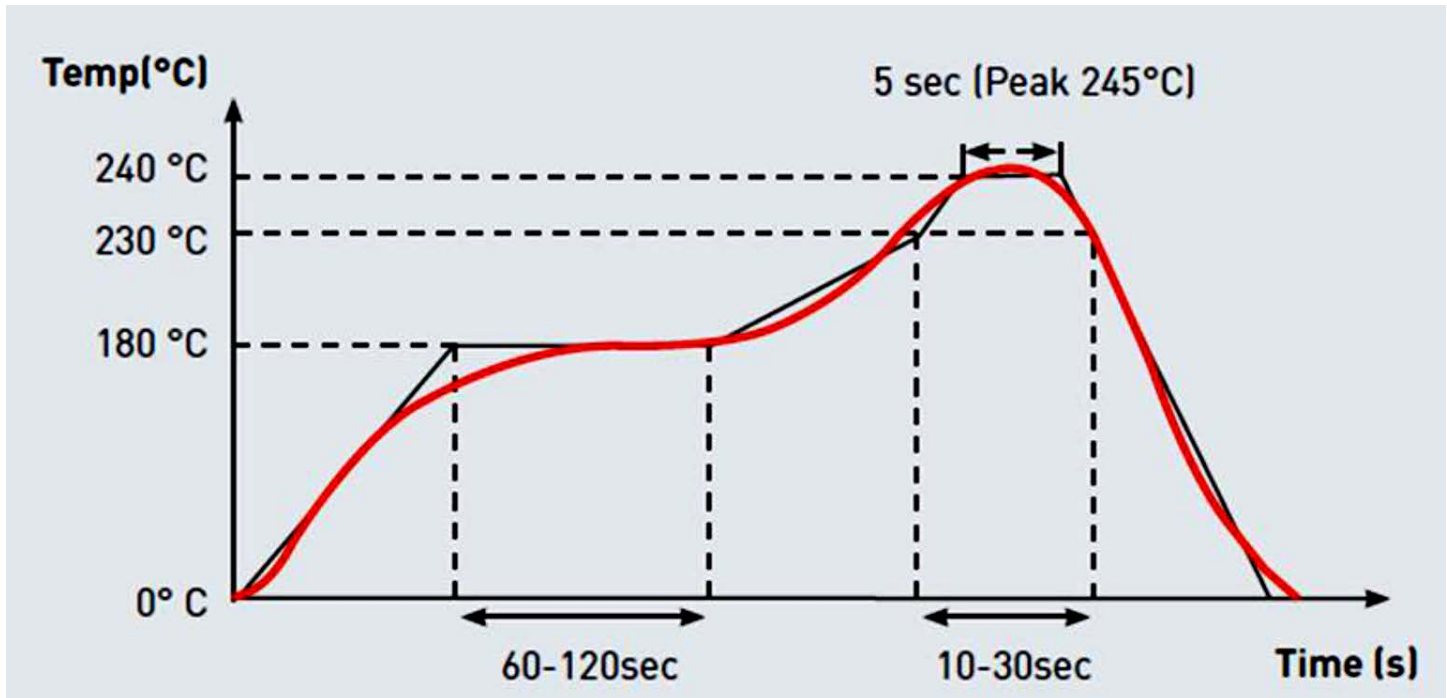
1. **Flux, Solder**

   Use Rosin-based flux. Do not use highly acidic flux with halide content exceeding 0.2wt% (chlorine conversion value).
   Use Sn solder Allow: An96.5/Ag3.0/Cu0.5

2. **Reflow Soldering Conditions**

   Pre-heating should be in such a way that the temperature difference between solder and product surface is limited to 150°C max.
   Cooling into solvent after soldering also should be in such a way that temperature difference is limited to 100°C max.
   Unwrought pre-heating may cause cracks on the product, resulting in the deterioration of product's quality.

3. **Reworking with soldering iron**

   The following conditions must be strictly followed when using a soldering iron:
   Pre-heating: 150°C, 1 min
   Tip temperature: 290°C max
   Soldering iron output: 30W max
   Soldering time: 3 seconds max

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Packaging