

# Part No. A1001013

## Automotive ISM / Wi-Fi / BT On / Off Ground Antenna

2400 - 2485 MHz

Supports: Wi-Fi applications, Bluetooth, WLAN, ISM



### Automotive FR4 ISM / Wi-Fi / Bluetooth Antenna

2400 – 2485 MHz

#### KEY BENEFITS

##### Stay-in-Tune

IMD antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

##### Quicker Time-to-Market

By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

##### Environmental Compliance

Products are the latest RoHS version compliant.

#### APPLICATIONS

- Automotive
- Infotainment
- Embedded design
- Telematics
- Tracking
- Smart Grid
- OBD-II
- Agriculture,
- Industrial Applications

KYOCERA AVX A-Series automotive antennas deliver on the key needs of device designers for higher functionality.

KYOCERA AVX has completed rigorous testing to qualify the A-series antennas for automotive applications. Although the AEC-Q200 standard does not include antenna products, all testing has been done following applicable AEC-Q200 requirements and procedures as closely as possible. Customers must provide additional quality requirements, if any, to drive additional compliance testing.

#### Electrical Specifications

Typical Characteristics, on 50 x 70 mm PCB

Frequency	2400 – 2485 MHz	
Mounting	Off Ground	On Ground (Over Metal)
VSWR Match	1.5:1 max	1.8:1 max
Average Efficiency	76%	48%
Peak Gain	2.6 dBi	0.7 dBi
Feed Point Impedance	50 ohms unbalanced	
Polarization	Linear	
Power Handling	0.5 Watt CW	

#### Mechanical Specifications & Ordering Part Number

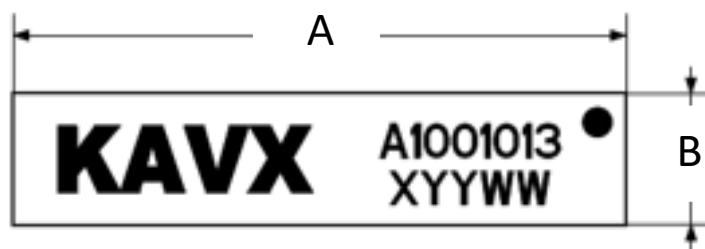
Ordering Part Number	A1001013
Size (mm)	15.0 x 3.2 x 3.3
Mounting	SMT (P&P)
Weight (grams)	0.2
Packaging	Tape & Reel
Demo Board	1001013-02
Temperature Range	-50/+125 °C
Temperature Cycle	IEC 60068-2-14
Temperature Exposure	Mil-STD-202 Method 108
High Temperature & High Humidity	MIL-STD-202
Mechanical Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Additional Resources	<a href="#">Download DXF, Gerber and 3D FIT Files</a>
IMDS and PPAP available	

2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

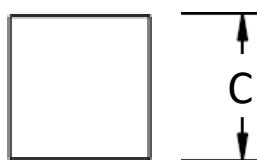
### Antenna Dimensions

Typical antenna dimensions (mm)

Part Number	A	B	C
A1001013	15.0 ± 0.2	3.2 ± 0.1	3.3 ± 0.3

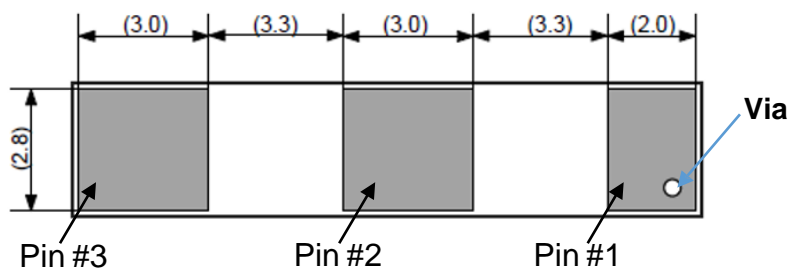


Top View



Height

Pin	Description
1	Feed
2	Dummy Pad
3	Dummy Pad

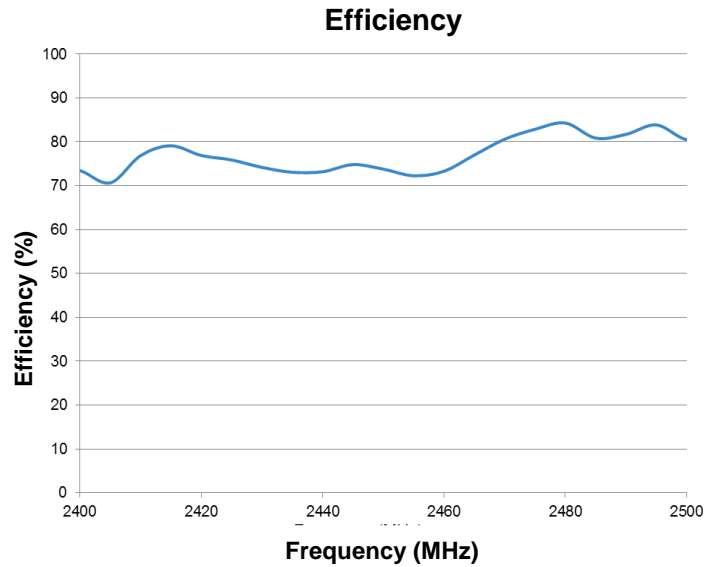
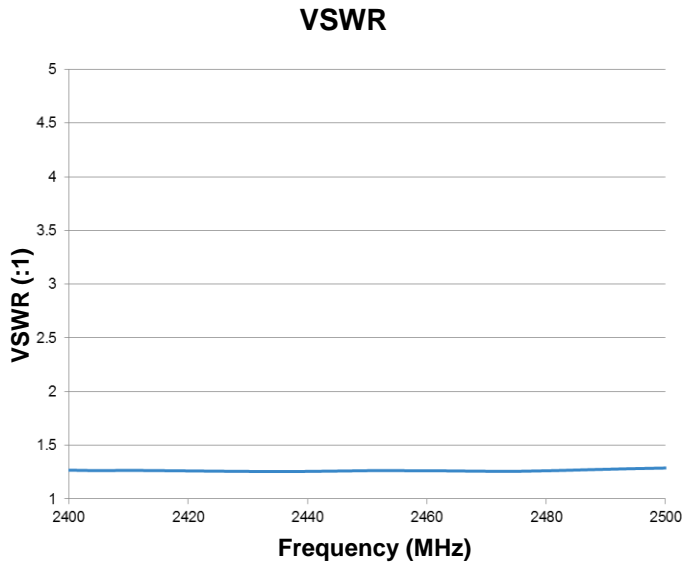


Bottom View

2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

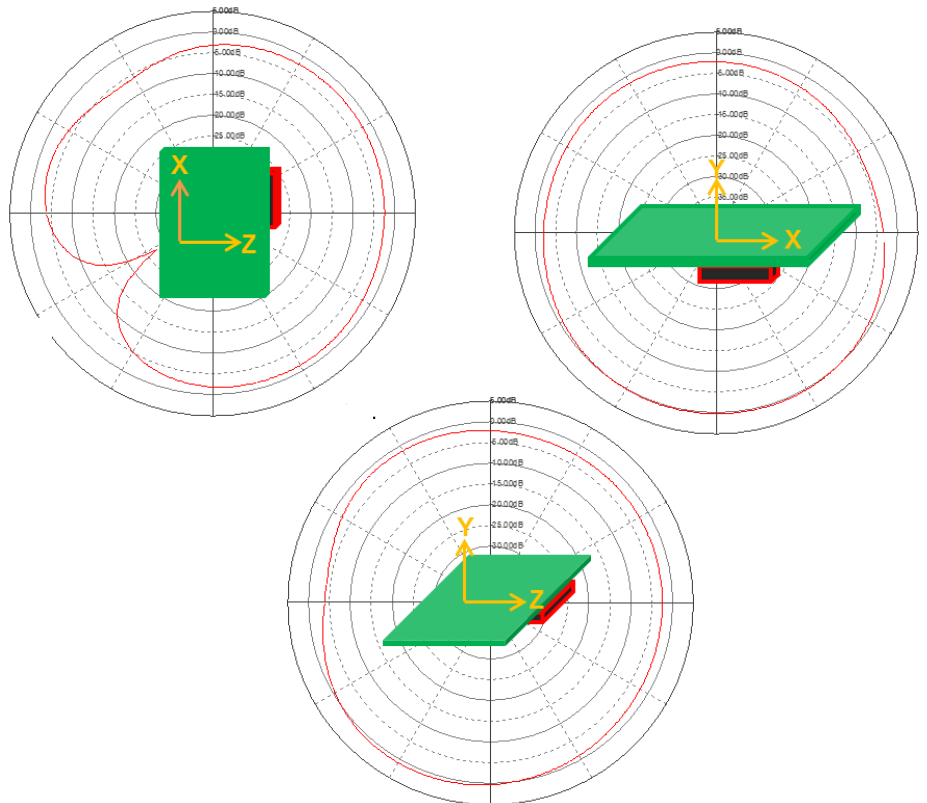
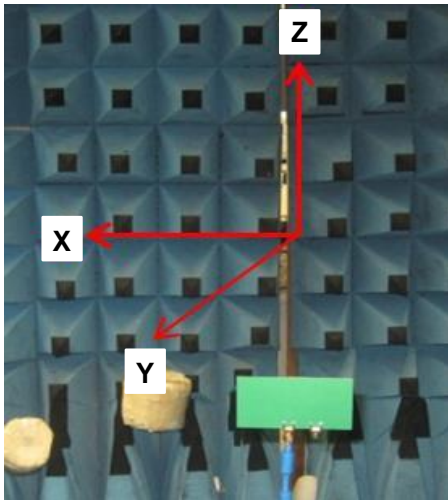
VSWR and Efficiency Plots (Off-Ground)

Typical performance on 50 x 70 mm PCB



Antenna Radiation Patterns (Off-Ground)

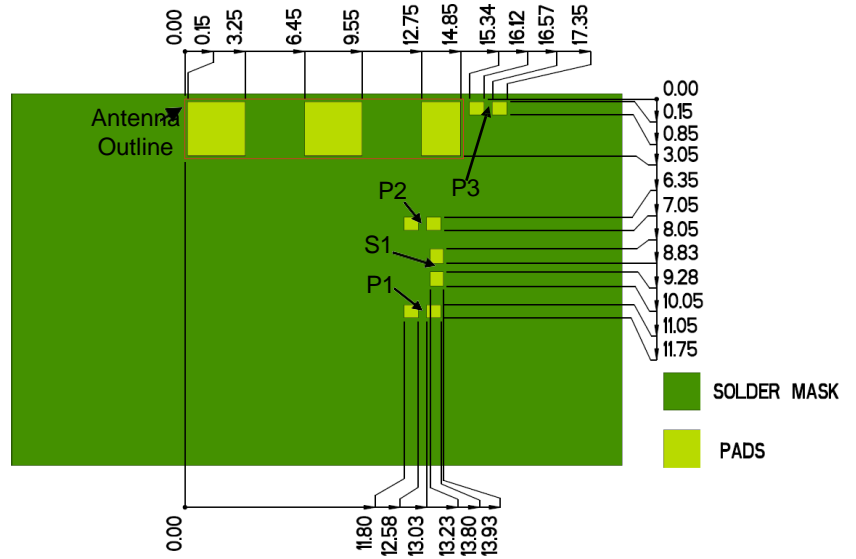
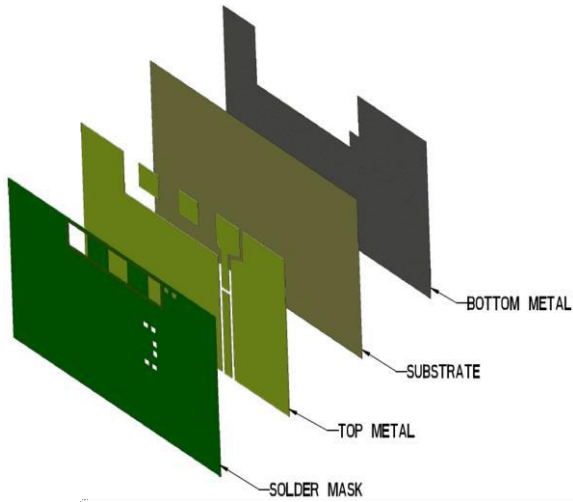
Typical performance on 50 x 70 mm PCB



**2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.**  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

**Antenna Layout (Off-Ground)**

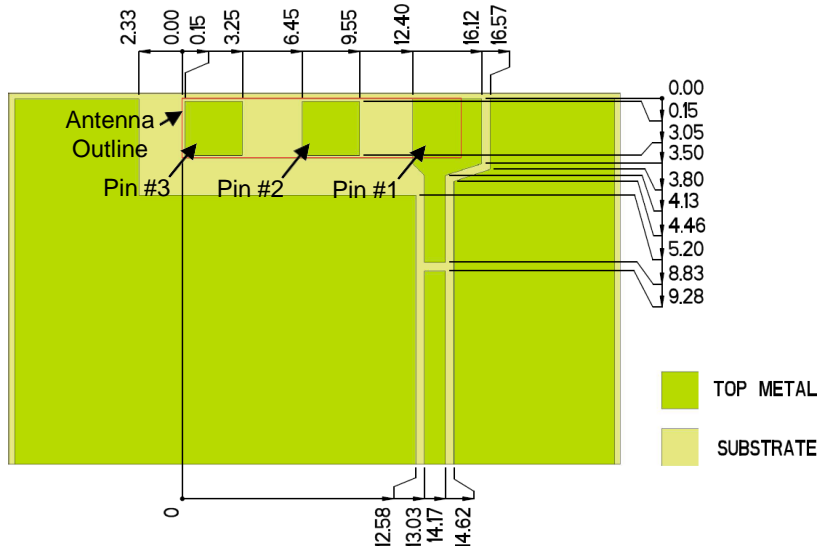
Typical layout dimensions (mm)



\* VIAS: Diam. 0.2mm, (no vias on transmission lines).  
 Via holes must be covered by solder mask

**Pin Descriptions**

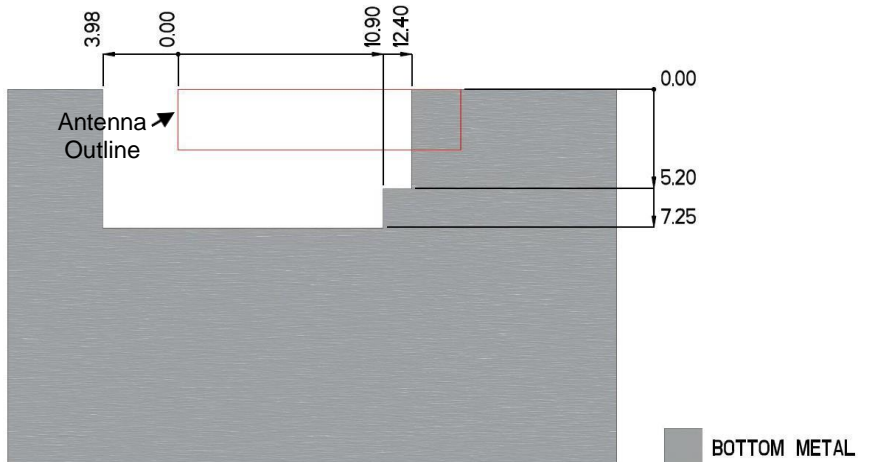
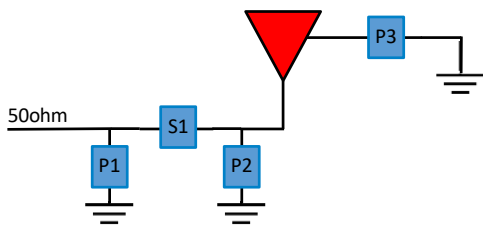
Pin#	Description
1	Feed
2	Dummy Pad
3	Dummy Pad



**Matching Pi Network (Demo Board)**

Component	Value	Tolerance
P1	DNI	N/A
S1	0Ω	N/A
P2	0.4pF	±0.25pF
P3	0Ω	N/A

\*Actual matching values depend on customer design

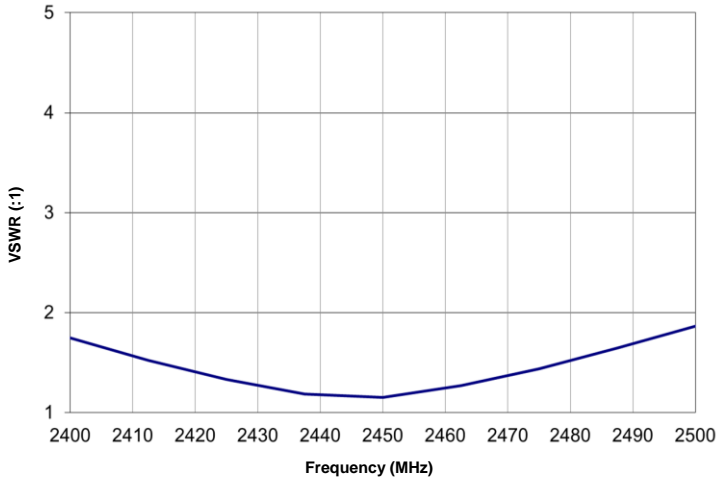


2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

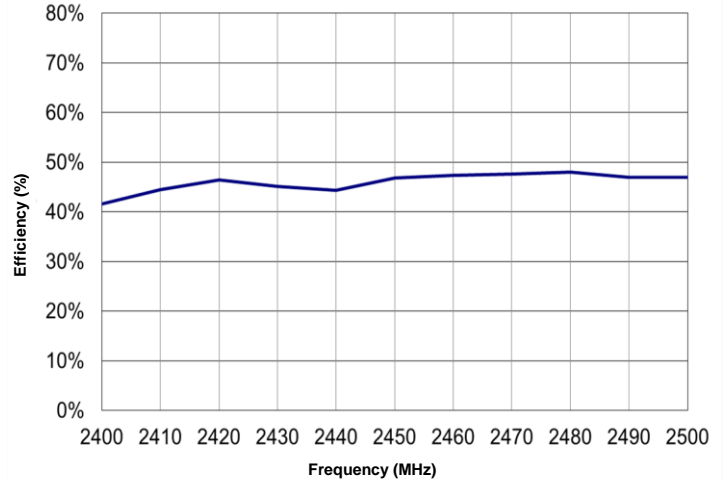
**VSWR and Efficiency Plots (On-Ground)**

Typical performance on 50 x 70 mm PCB

**VSWR**

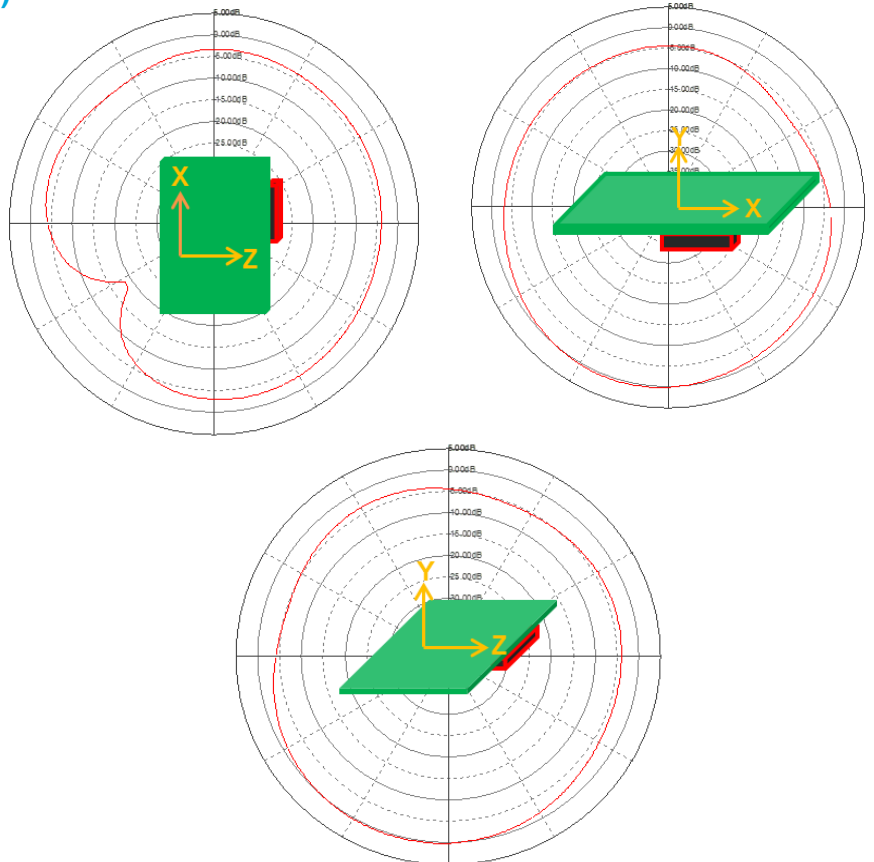
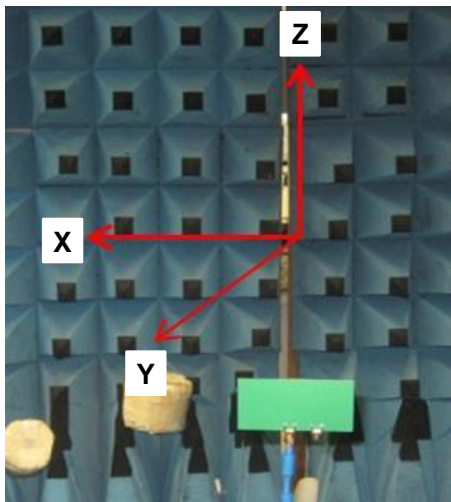


**Efficiency**



**Antenna Radiation Patterns (On-Ground)**

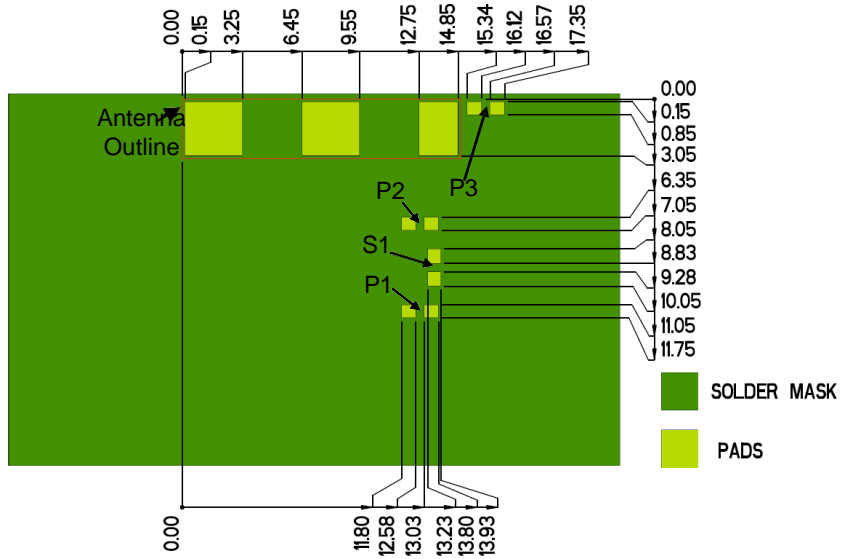
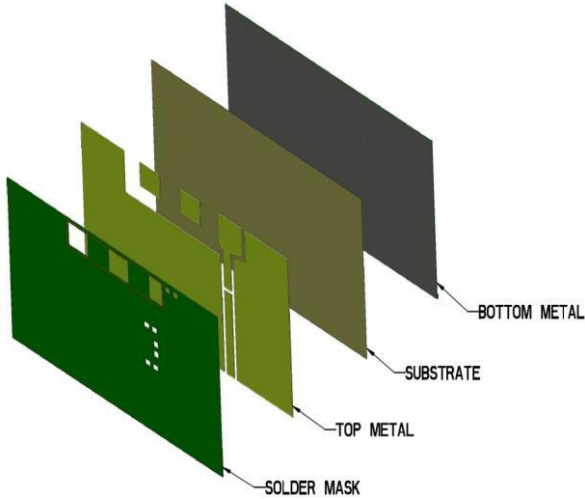
Typical performance on 50 x 70 mm PCB



**2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.**  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

**Antenna Layout (On-Ground)**

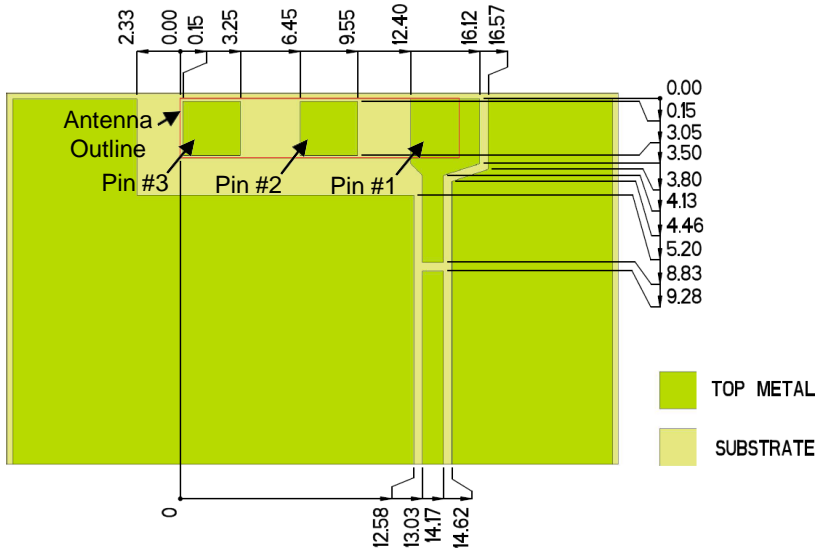
Typical layout dimensions (mm)



\* VIAS: Diam. 0.2mm, (no vias on transmission lines).  
 Via holes must be covered by solder mask

**Pin Descriptions**

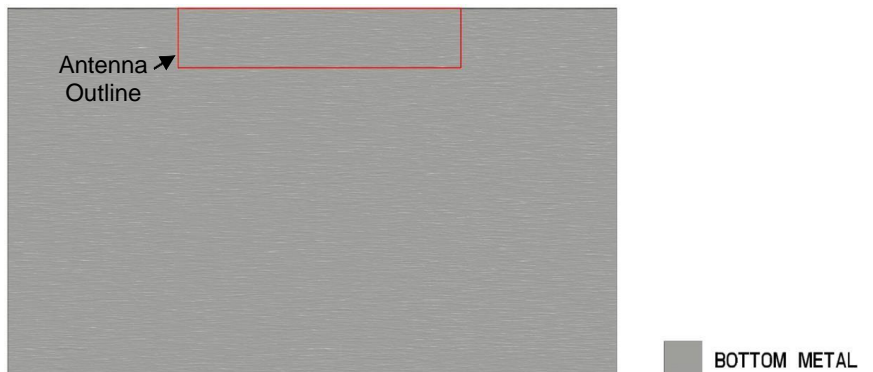
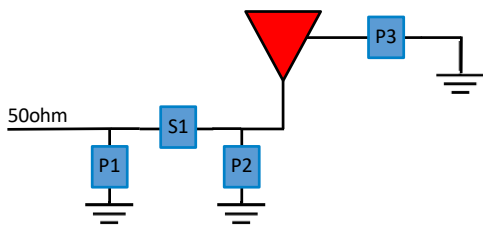
Pin#	Description
1	Feed
2	Dummy Pad
3	Dummy Pad



**Matching Pi Network (Demo Board)**

Component	Value	Tolerance
P1	DNI	N/A
S1	0Ω	N/A
P2	DNI	N/A
P3	0Ω	N/A

\*Actual matching values depend on customer design

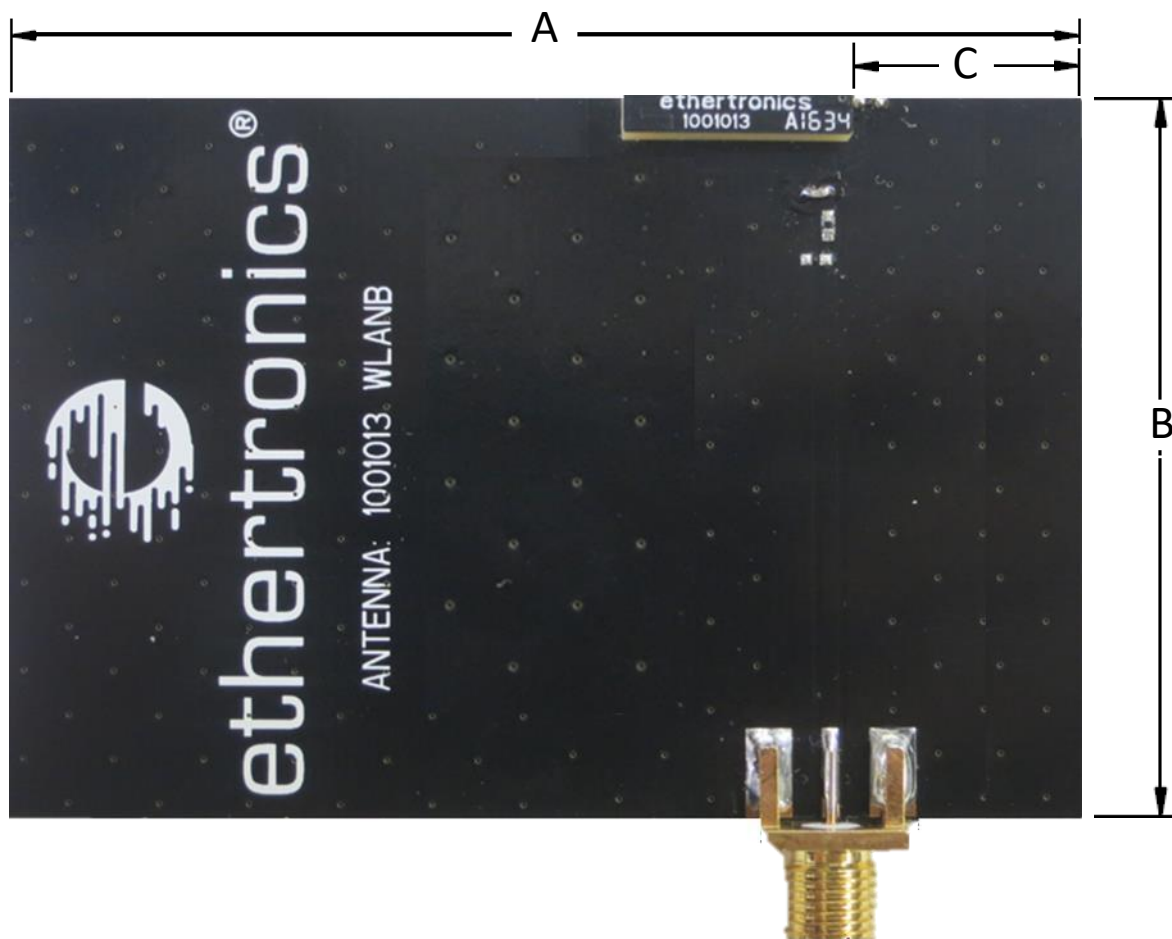


2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

**Antenna Demo Board**

1001013-02 Off-Ground

Part Number	A (mm)	B (mm)	C (mm)
1001013-02	70.0	50.0	15.0



2.4 GHz KYOCERA AVX Automotive Embedded Antenna Specifications.  
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs.

### Additional Resources – A1001013

**3D FIT File:**

[https://www.kyocera-avx.com/download/antennas/ME-FIT/1001013\\_ME\\_fit.zip](https://www.kyocera-avx.com/download/antennas/ME-FIT/1001013_ME_fit.zip)

**DXF File:**

**On Ground :** [https://www.kyocera-avx.com/download/antennas/3D-DXF/1001013-01\\_3D-DXF.zip](https://www.kyocera-avx.com/download/antennas/3D-DXF/1001013-01_3D-DXF.zip)

**Off Ground :** [https://www.kyocera-avx.com/download/antennas/3D-DXF/1001013-02\\_3D-DXF.zip](https://www.kyocera-avx.com/download/antennas/3D-DXF/1001013-02_3D-DXF.zip)

**Gerber File:**

**On Ground:** [https://www.kyocera-avx.com/download/antennas/GERBER/1001013-01\\_GERBERS.zip](https://www.kyocera-avx.com/download/antennas/GERBER/1001013-01_GERBERS.zip)

**Off Ground:** [https://www.kyocera-avx.com/download/antennas/GERBER/1001013-02\\_GERBERS.zip](https://www.kyocera-avx.com/download/antennas/GERBER/1001013-02_GERBERS.zip)