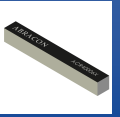


5G NR/ 4G/ LTE Ceramic Chip Antenna



ACR4006X

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Check Inventory



40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

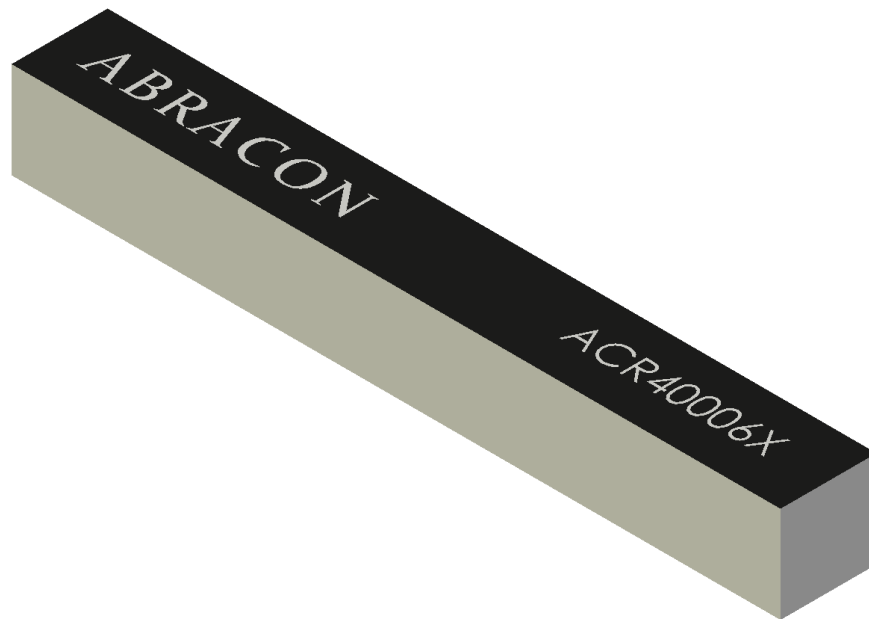
Features

- Ultra-wide band 600 MHz ~ 6 GHz
- Compact & Low-Profile
- VSWR: ≤ 2.0
- Peak Gain: 3.7 dBi
- Efficiency: up to 60%
- Linear Polarization
- Surface Mount (SMD)
- High efficiency across cellular bands

Applications

- Internet of Things (IoT) devices
- LTE-M, Cat M, Cat M1, NB-IoT
- LTE CAT 1 up to CAT 20 supported
- CBRS and 5G bands supported
- Smart Home networking
- Networking & Telecommunication

Product Image

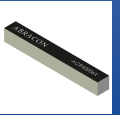


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40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Electrical Specification

Parameter	Specification			Unit
Operating Frequency	617-960	1710-2690	3300-6000	MHz
VSWR (Typ.)	< 2.0			
Peak Gain	0.4	3.7	3.5	dBi
Efficiency (Maximum)	56	60	48	%
Impedance	50			Ω
Polarization	Linear			
Radiation Pattern (Azimuth)	Omni-directional			

Note : All test measurements were conducted on 120 x 45 mm. Performance of the chip antenna will vary relative to the ground plane size in use.

Mechanical Specification

Parameter	Specification
Antenna Dimension	40 x 6 x 5 mm
Antenna Clearance Space	45 x 13 mm
Evaluation Board size	120 x 45 mm
Solder Termination	Ag (Environmental-Friendly Pb-Free)

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Relative Humidity	90% to 95%

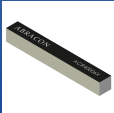


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RoHS/RoHS II Compliant
MSL Level = N/A

Ordering Information

Part Number	Description
ACR4006X	5G NR/ 4G/ LTE Ceramic Chip Antenna
ACR4006X-EVB	5G NR/ 4G/ LTE Ceramic Chip Antenna EVB

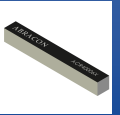


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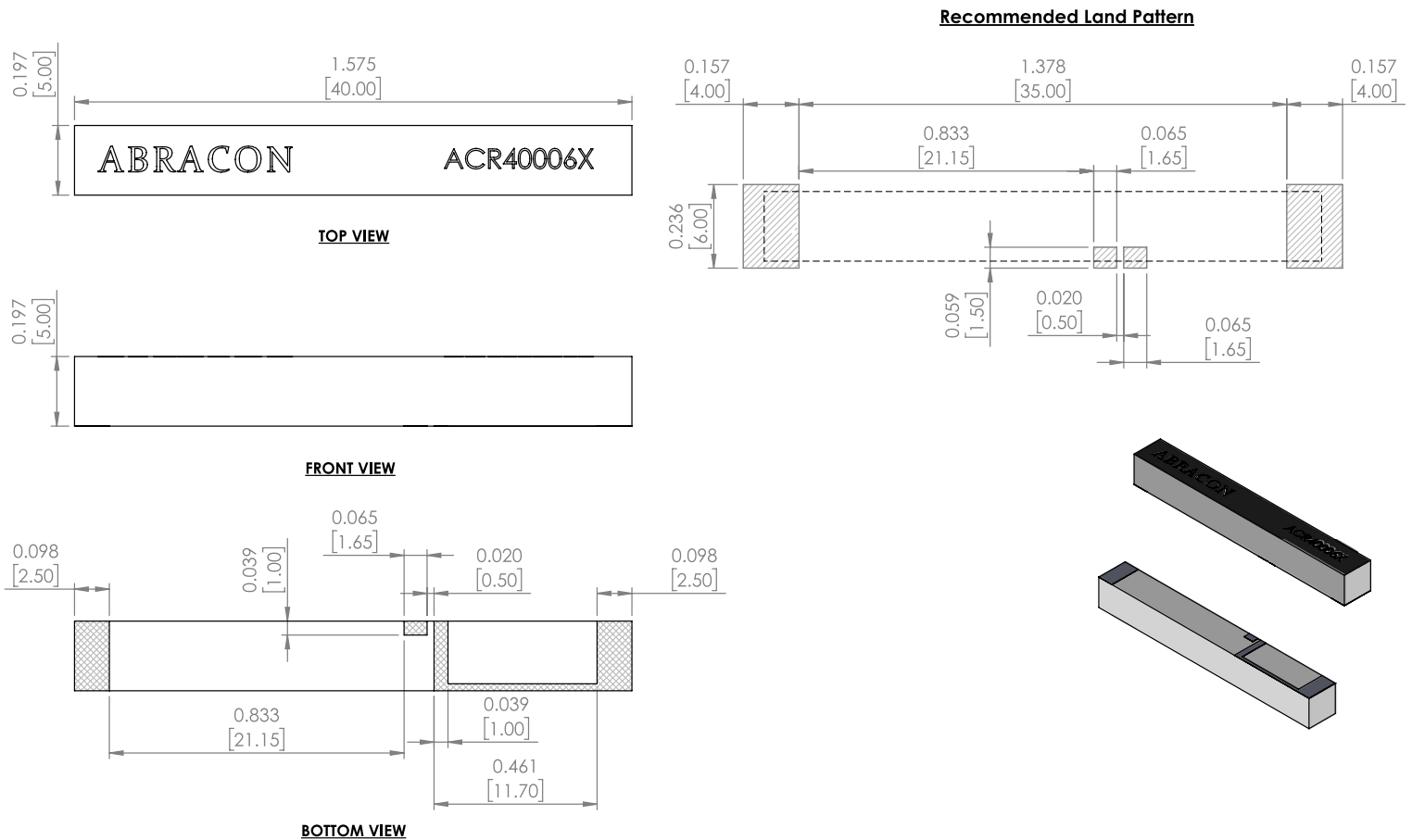


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Product Dimensions

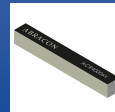


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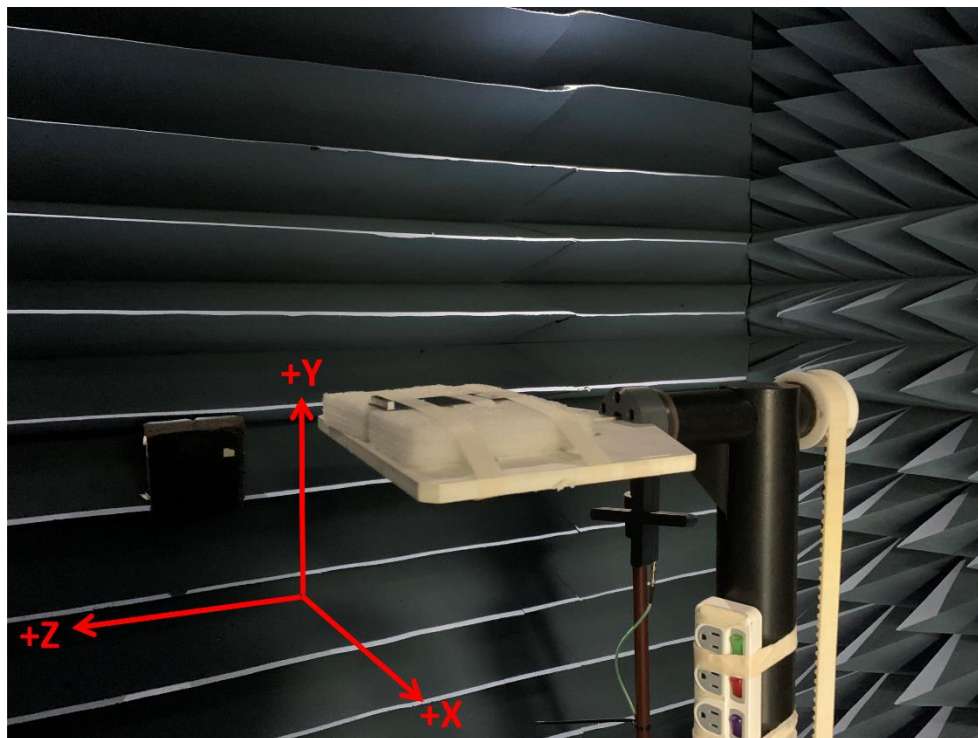


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Measurement Setup photo

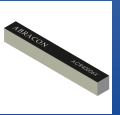


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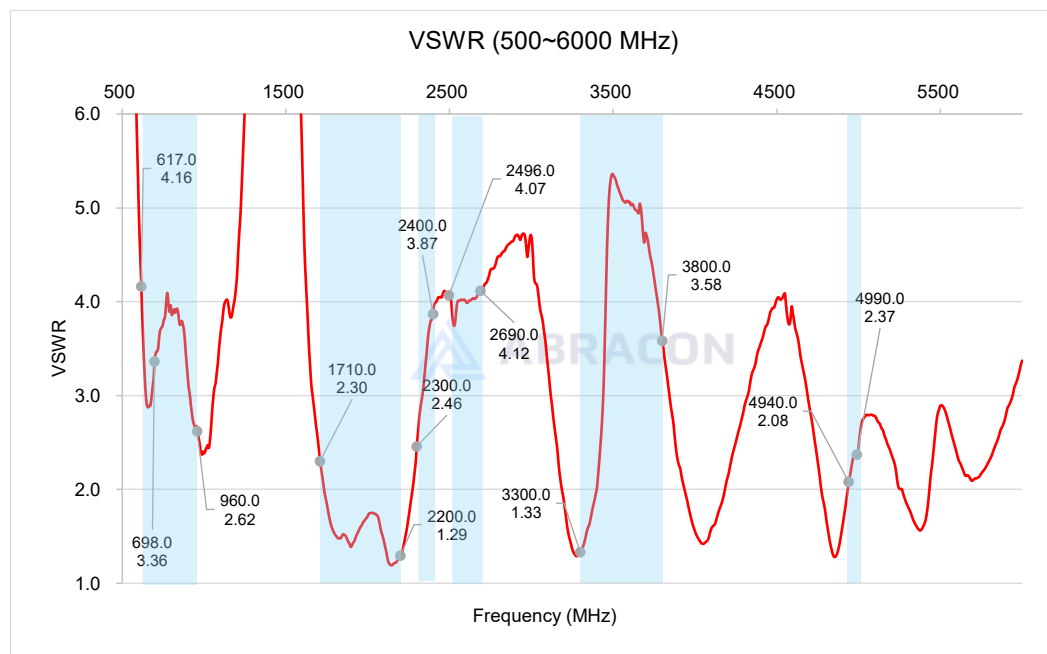
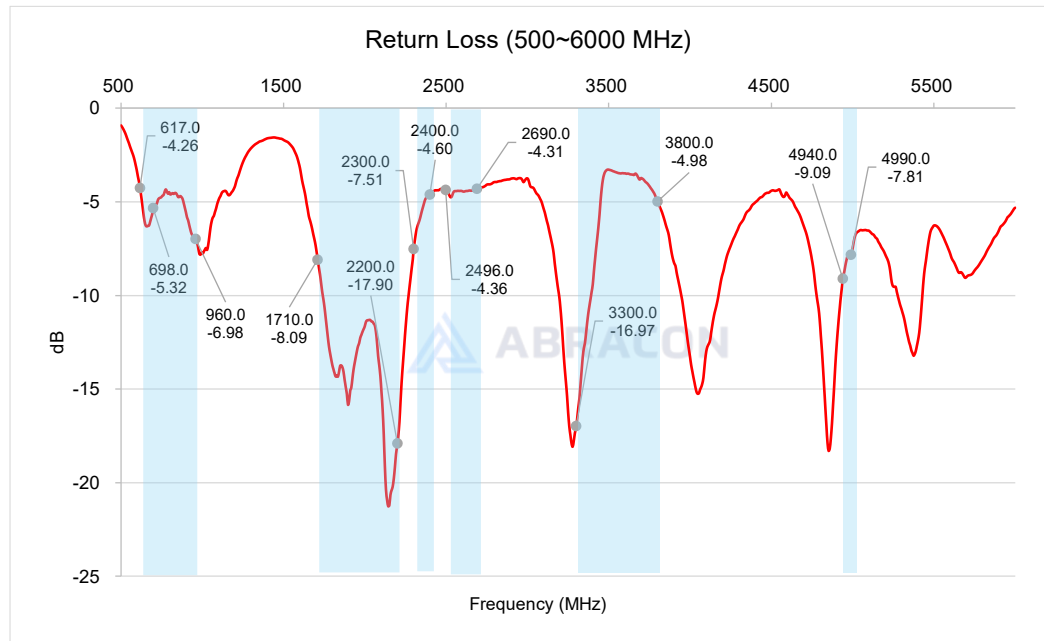


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Reflection Characteristics –Return Loss & VSWR

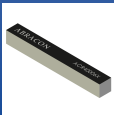


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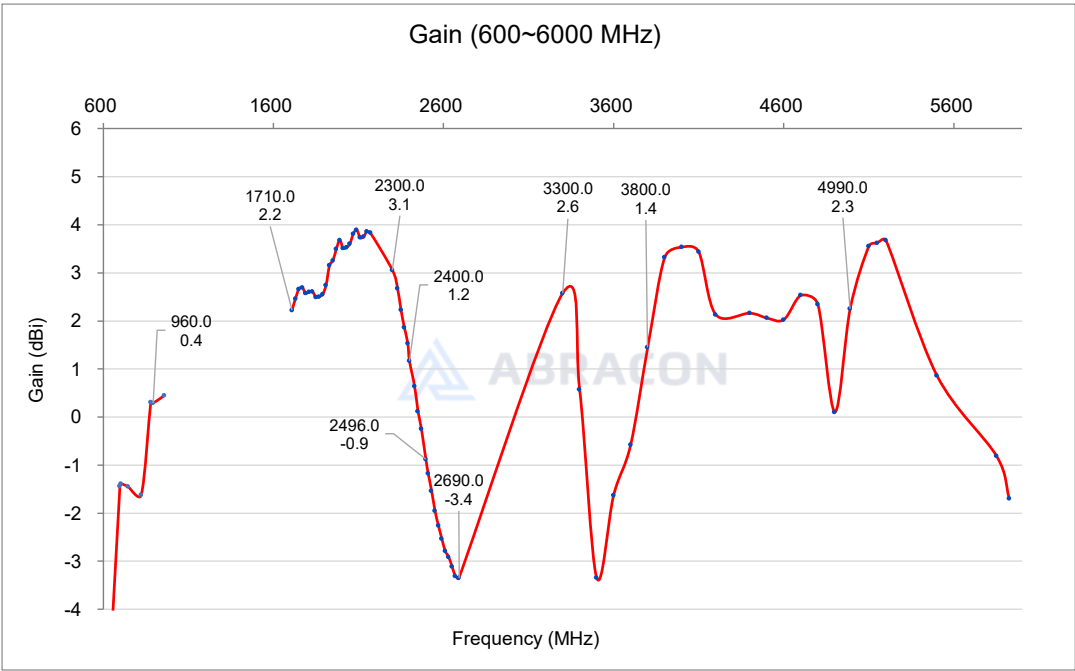


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40 x 6 x 5 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Radiation Characteristics – Peak Gain

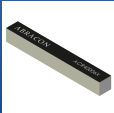


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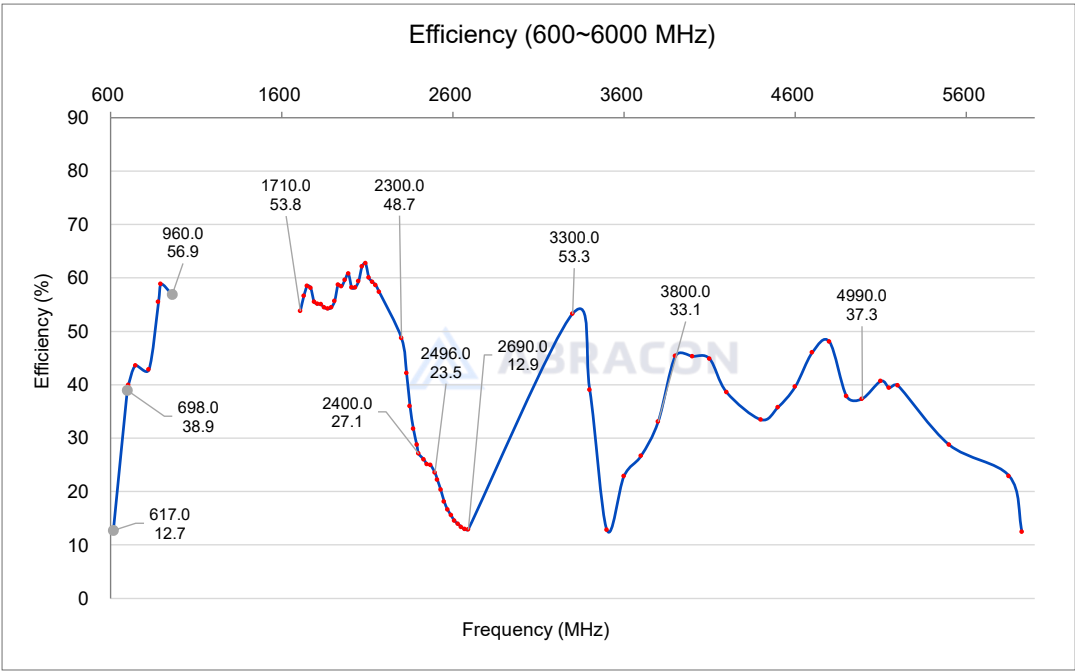


ACR4006X

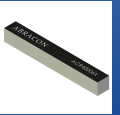
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40 x 6 x 5 mm
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MSL Level = N/A

Radiation Characteristics – Total Efficiency (%)



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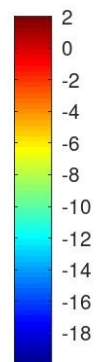
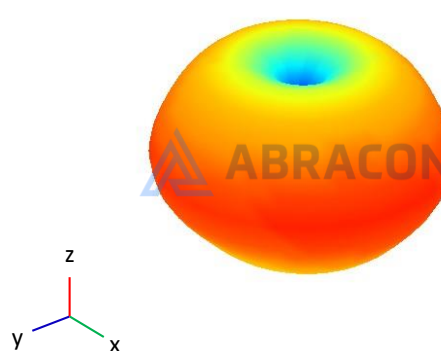
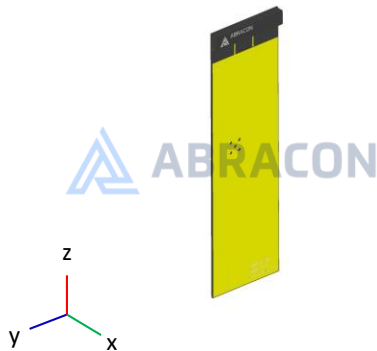
40 x 6 x 5 mm

RoHS/RoHS II Compliant

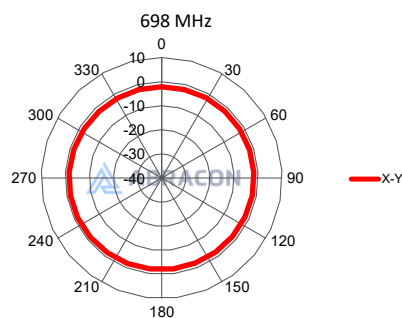
MSL Level = N/A

Radiation Characteristics – 3D & 2D Pattern

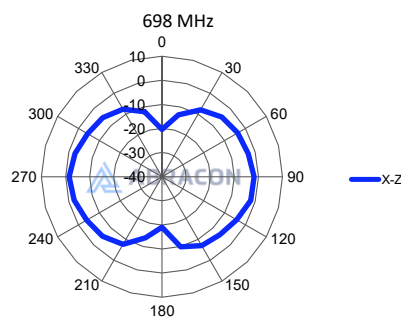
698MHz



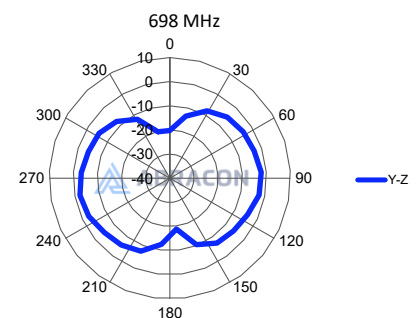
XY plane



XZ plane



YZ plane

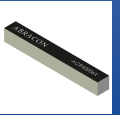


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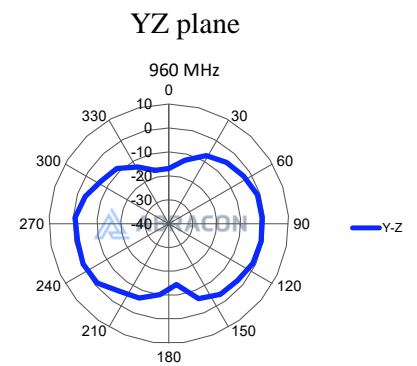
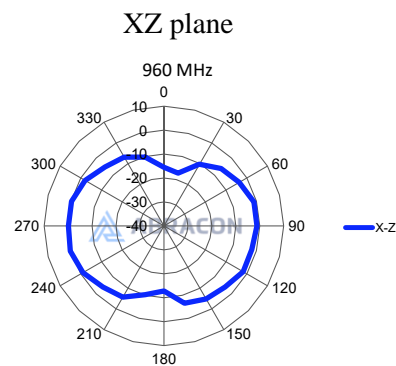
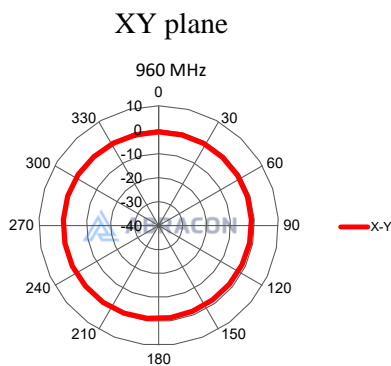
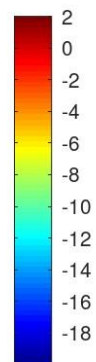
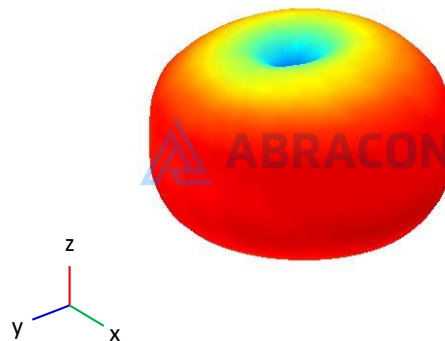
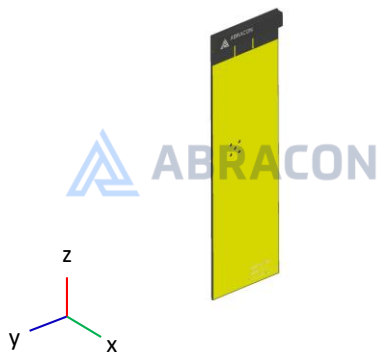


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

960MHz

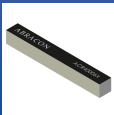


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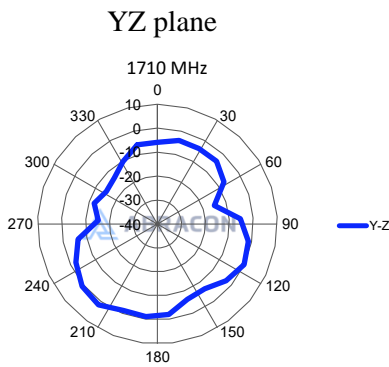
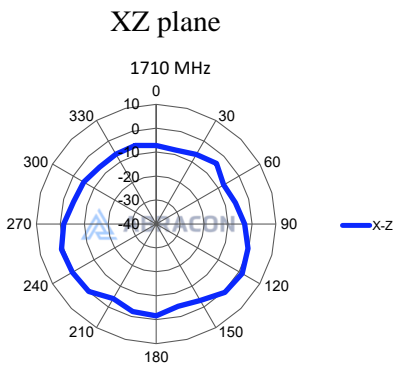
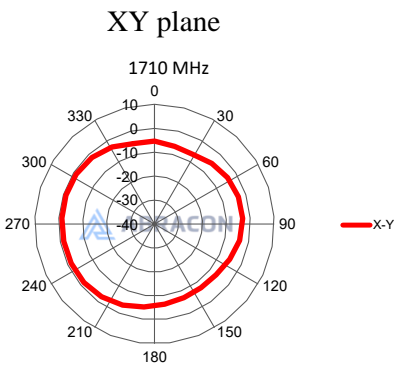
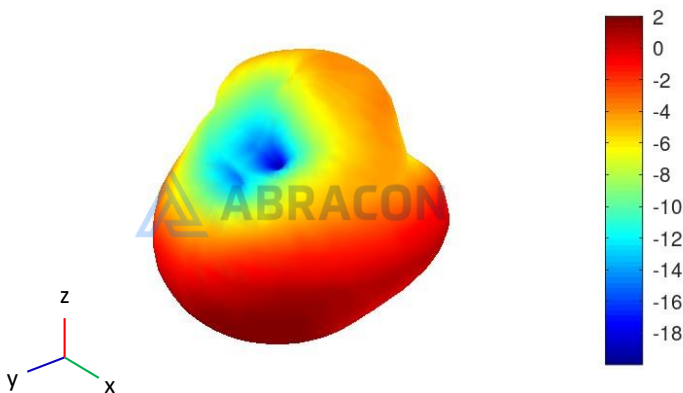
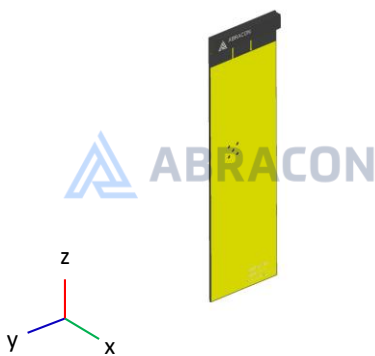


40 x 6 x 5 mm

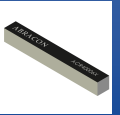
RoHS/RoHS II Compliant

MSL Level = N/A

1710MHz



5G NR/ 4G/ LTE Ceramic Chip Antenna



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Request Samples



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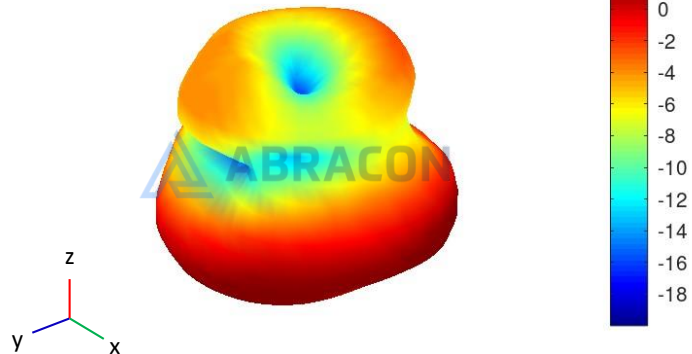
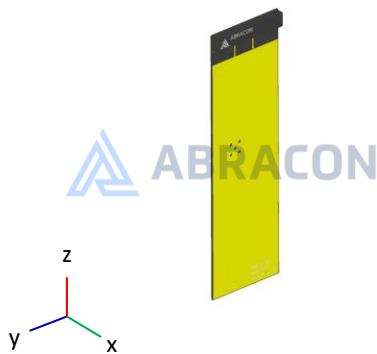


40 x 6 x 5 mm

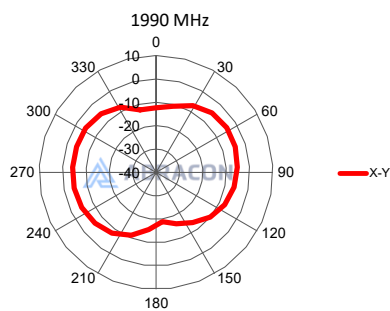
RoHS/RoHS II Compliant

MSL Level = N/A

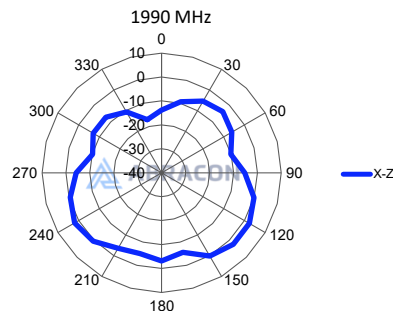
1990MHz



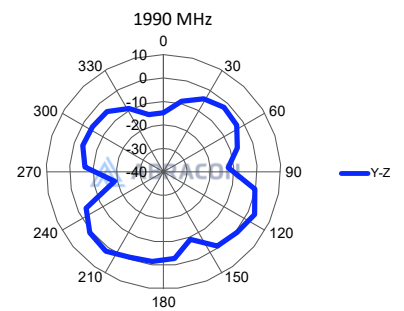
XY plane



XZ plane



YZ plane

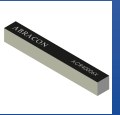


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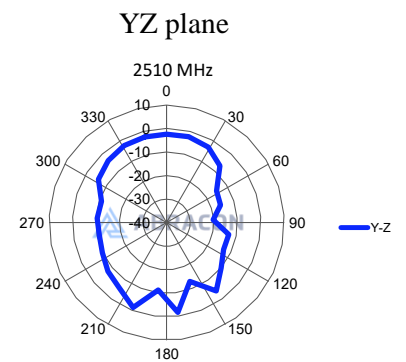
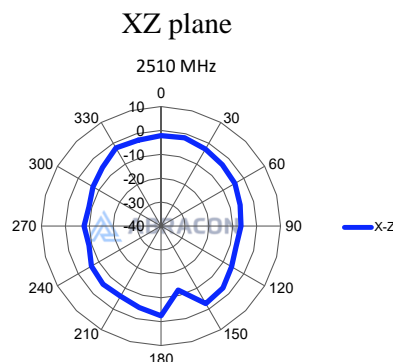
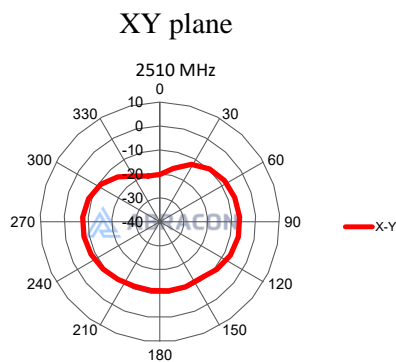
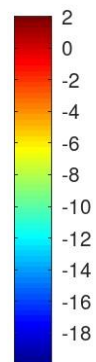
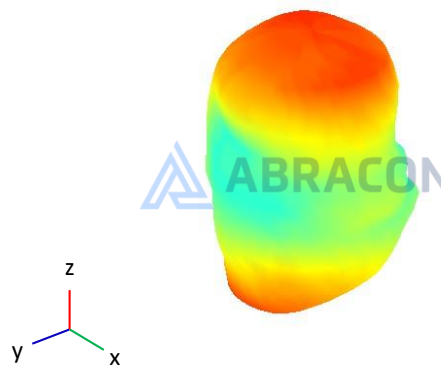
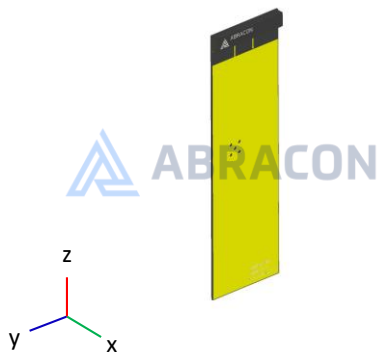


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

2510MHz

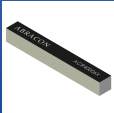


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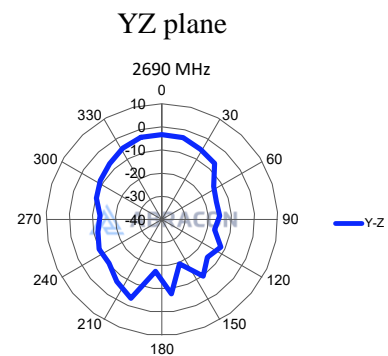
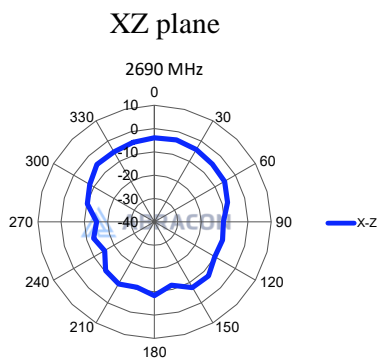
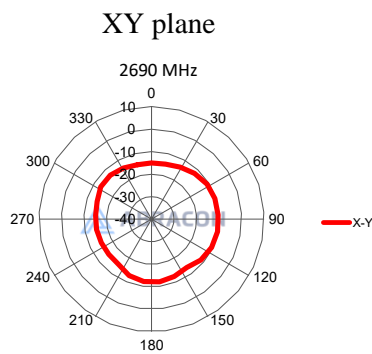
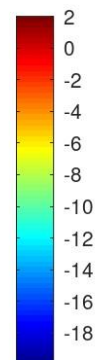
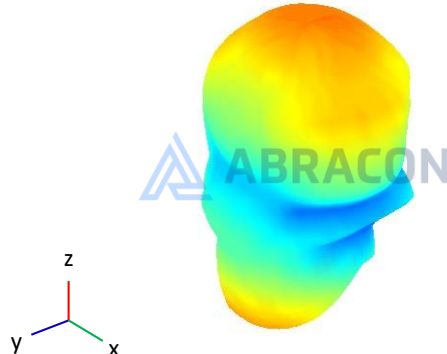
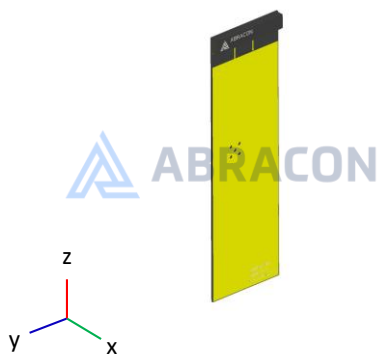


ACR4006X

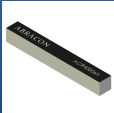
Request Samples  Check Inventory 

40 x 6 x 5 mm
RoHS/RoHS II Compliant
MSL Level = N/A

2690MHz



5G NR/ 4G/ LTE Ceramic Chip Antenna

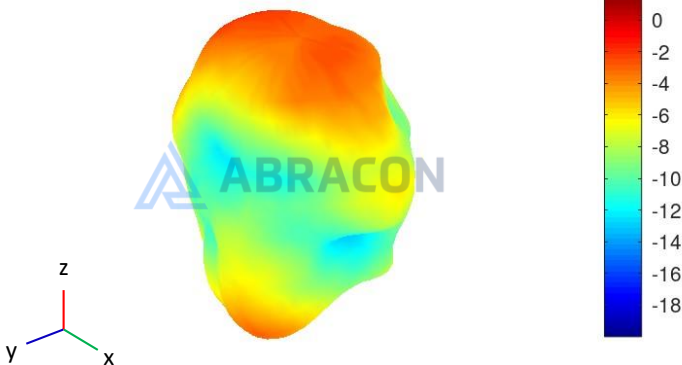


ACR4006X

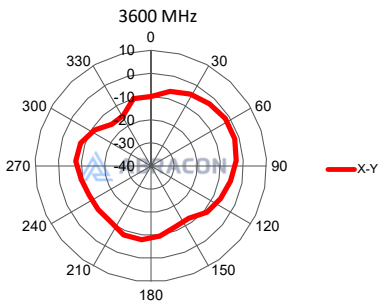
Request Samples  Check Inventory 

40 x 6 x 5 mm
RoHS/RoHS II Compliant
MSL Level = N/A

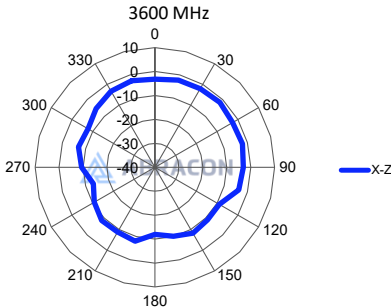
3600MHz



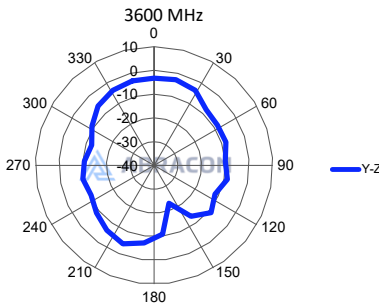
XY plane



XZ plane



YZ plane

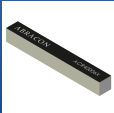


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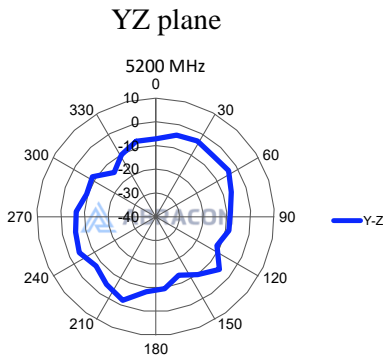
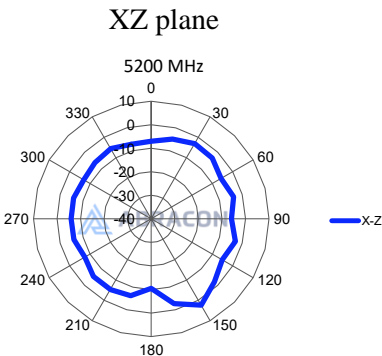
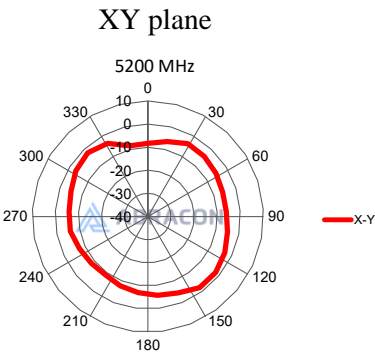
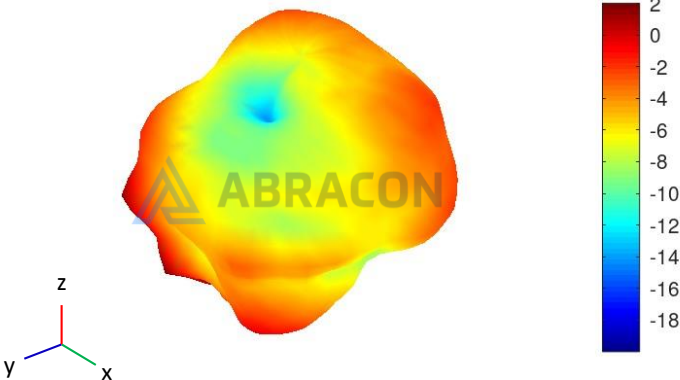
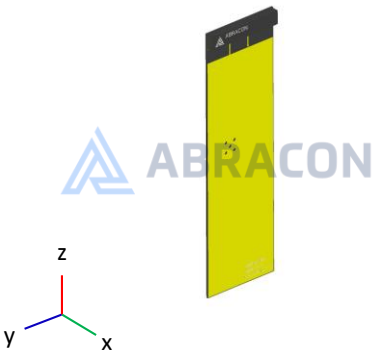


ACR4006X

Request Samples  Check Inventory 

40 x 6 x 5 mm
RoHS/RoHS II Compliant
MSL Level = N/A

5200MHz

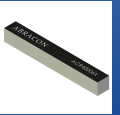


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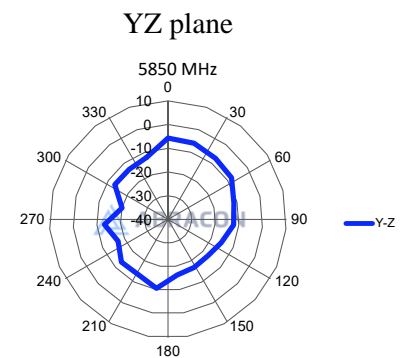
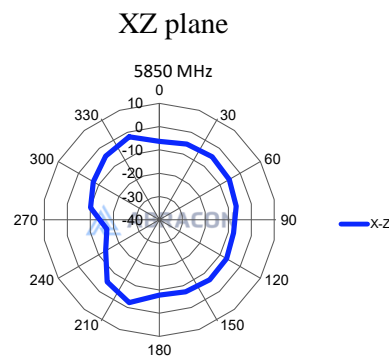
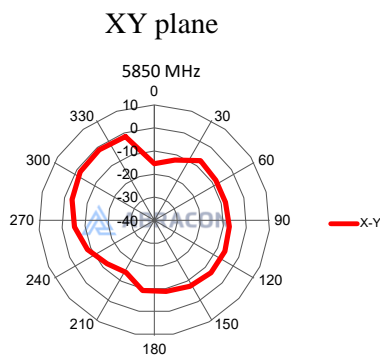
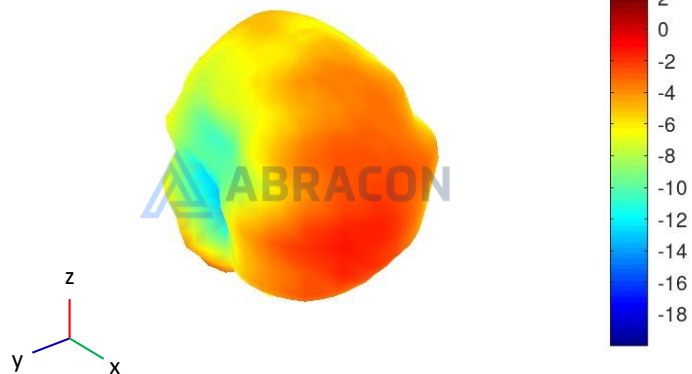


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

5850MHz

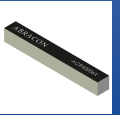


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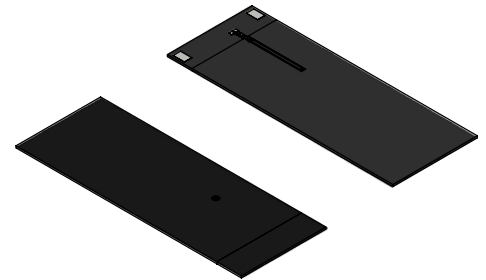
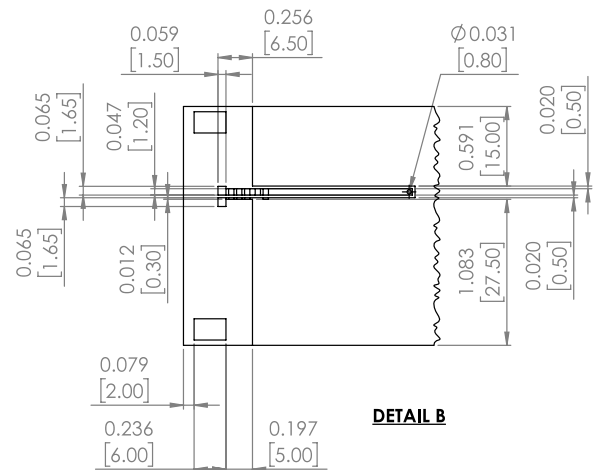
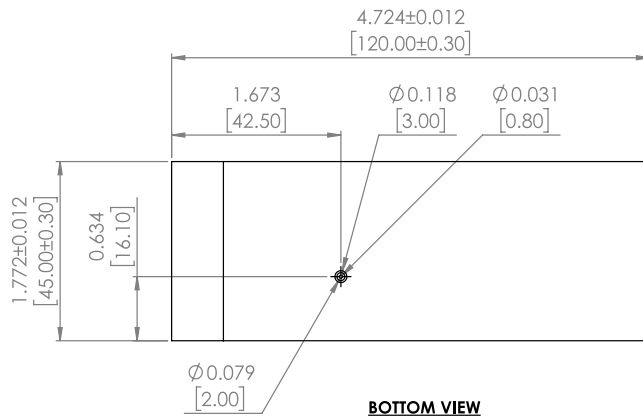
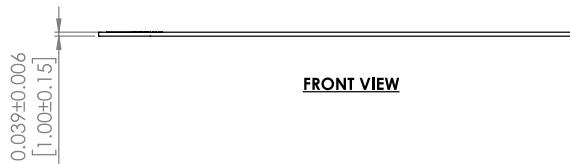
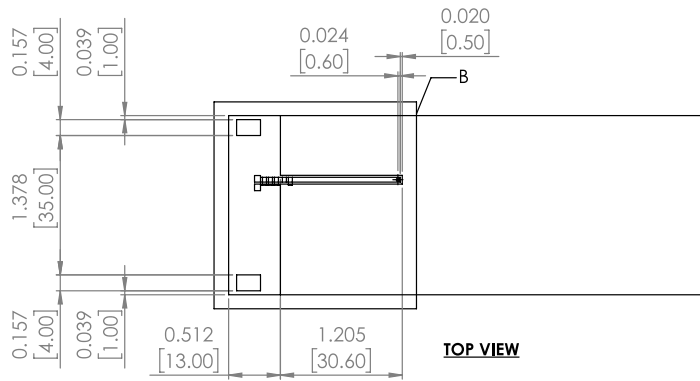


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Evaluation Board Dimensions



Unit: inches[mm]

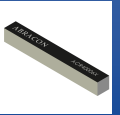


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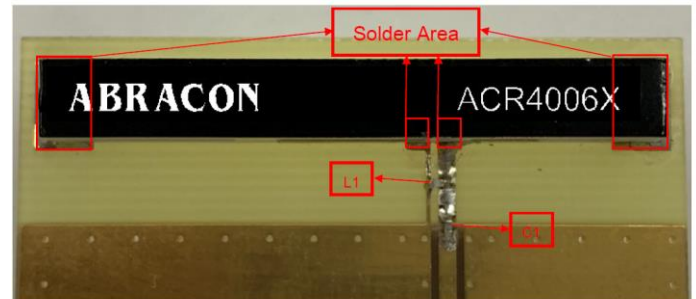
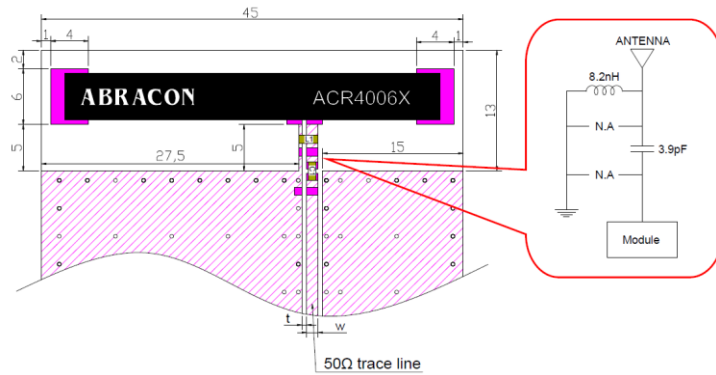


40 x 6 x 5 mm

RoHS/RoHS II Compliant

MSL Level = N/A

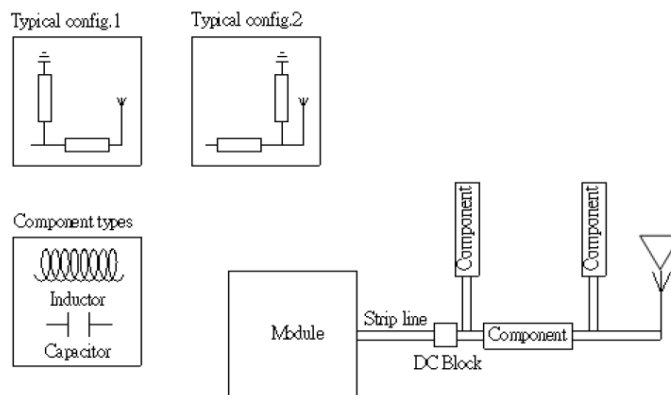
Recommended Layout Dimensions & Matching Circuit



Circuit Symbol	Size	Description
L1	0402	8.2nH Inductor
C1	0402	3.9pF Capacitor

Transmission Line and Matching

Transmission line and matching



The matching network has to be individually designed using one, two or three components.

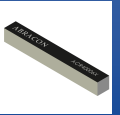


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Reflow Profile [JEDEC J-STD-020]

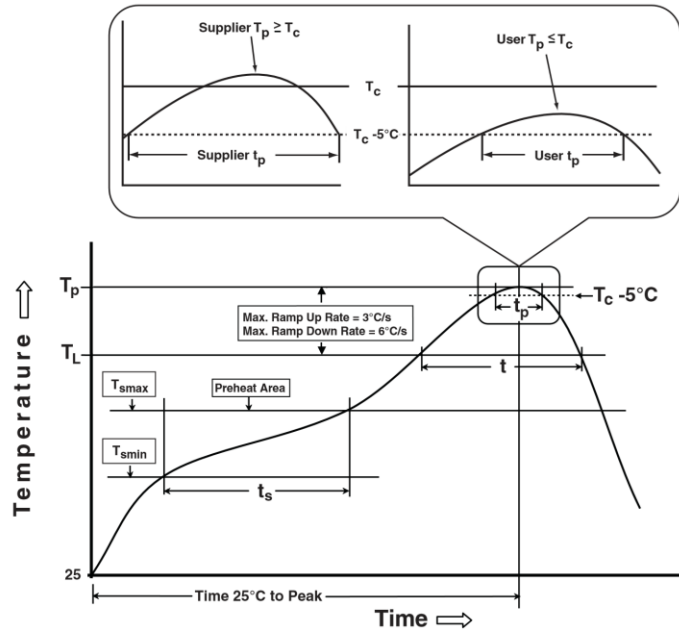


Table 1

SnPb Eutectic Process

Classification Temperatures (T_c)

Package Thickness	Volume mm^3 <350	Volume mm^3 ≥ 350
<2.5mm	235°C	220°C
$\geq 2.5\text{mm}$	220°C	220°C

Table 2

Pb-Free Process

Classification Temperatures (T_c)

Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >2000
<1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	130°C
Temperature maximum (T_{smax})	150°C	175°C
Time (T_{smin} to T_{smax}) (t_s)	60 – 120 sec.	60 – 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at Liquidous (T_L)	60 – 150 sec.	60 – 150 sec.
Peak package body temperature (T_p)*	See Table 1	See Table 2
Time (T_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

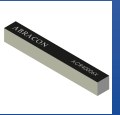


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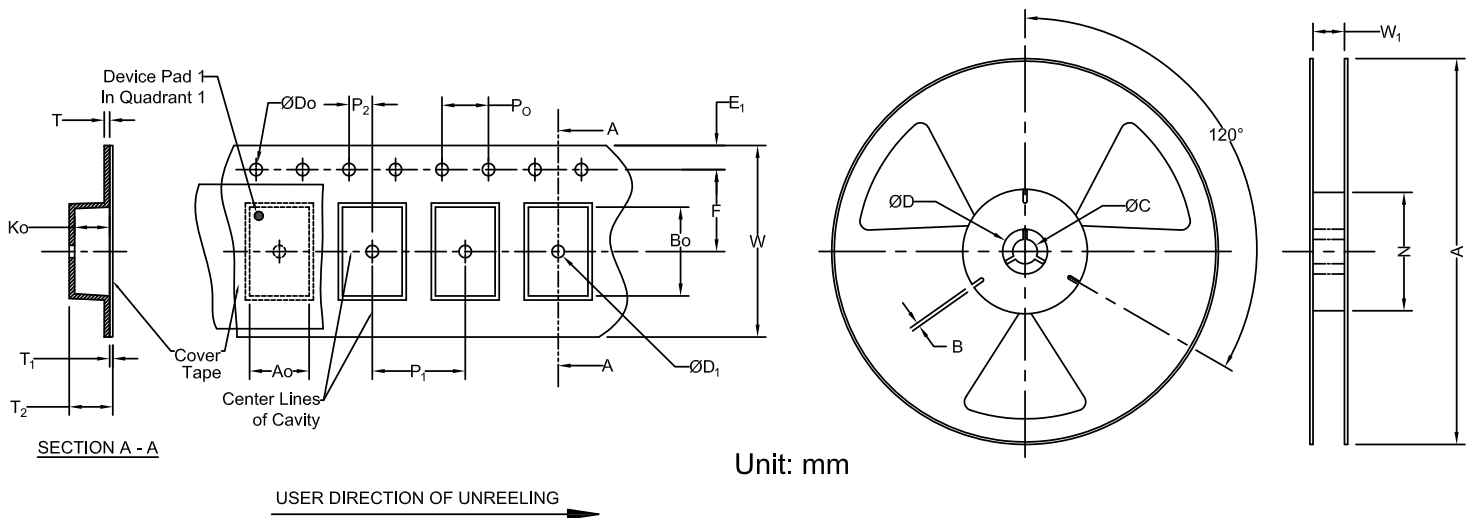
RoHS/RoHS II Compliant

MSL Level = N/A

Packaging

1. Blister tape to IEC 286-3, polyester.
2. Number of pieces per tape: 450
3. Number of pieces per carton: 1350

Tape & Reel Dimension



Carrier Tape Specifications (mm)

Do	K ₀	E ₁	P ₀	P ₂	T	F	P ₁	W	Reel Qty
1.50 ± 0.1	5.40 ± 0.1	1.75 ± 0.1	4.0 ± 0.1	2.0 ± 0.10	0.4 ± 0.05	26.2 ± 0.10	12.0 ± 0.1	56.0 ± 0.3	450

Reel Specifications (mm)

A	W ₁	N	C
330 ± 1.0	56.0 ± 1.0	100 ± 1.0	13 ± 0.5

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