

ACAR0301-SG3



3.05 x 1.6 x 0.55 mm
 RoHS/RoHS II Compliant
 MSL - N/A

FEATURES

- Multiband 1561~1610 MHz ceramic chip
- Low VSWR
- Linear polarization

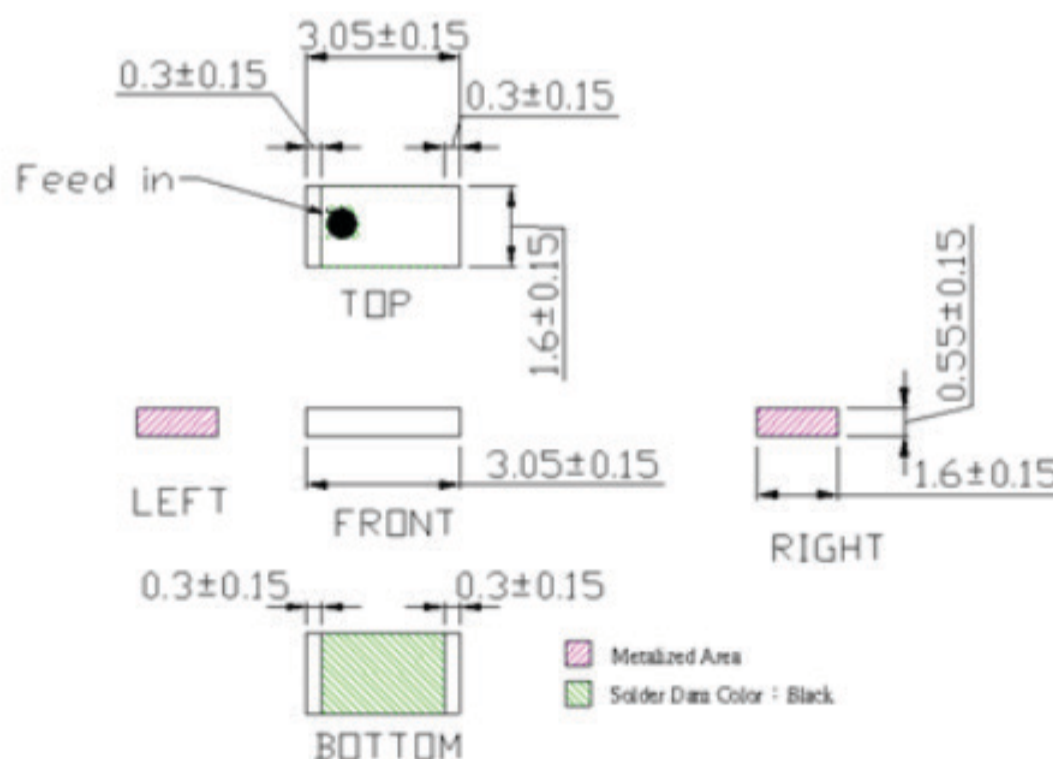
APPLICATIONS

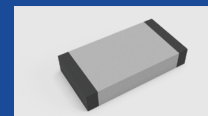
- Tracking, Geolocation
- IoT sensors
- Wearables

Electrical Characteristics

| Item | Spec |
|-----------------------------------|-------------------------|
| Center Frequency (After matching) | 1561~1610 MHz |
| Bandwidth | 49 MHz typ |
| VSWR | ≤ 2.0 |
| Impedance | 50Ω |
| Peak Gain | 1.69 dBi @ 1561 MHz |
| | -1.81 dBi @ 1575.42 MHz |
| | 1.43 dBi @ 1602 MHz |
| Polarization | Linear |

Dimensions



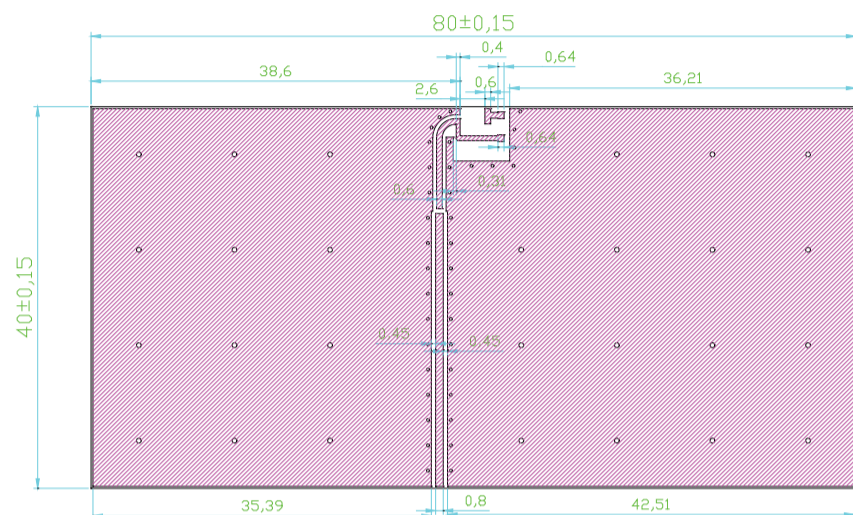


ACAR0301-SG3

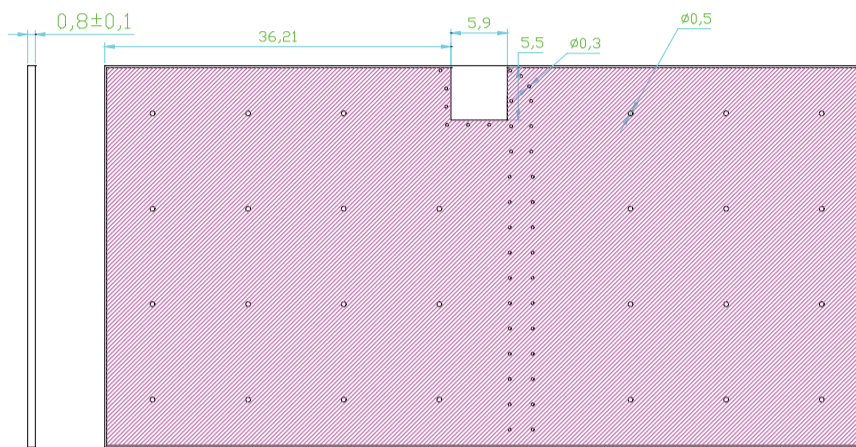


3.05 x 1.6 x 0.55 mm
 RoHS/RoHS II Compliant
 MSL - N/A

Evaluation Board and Matching Circuits



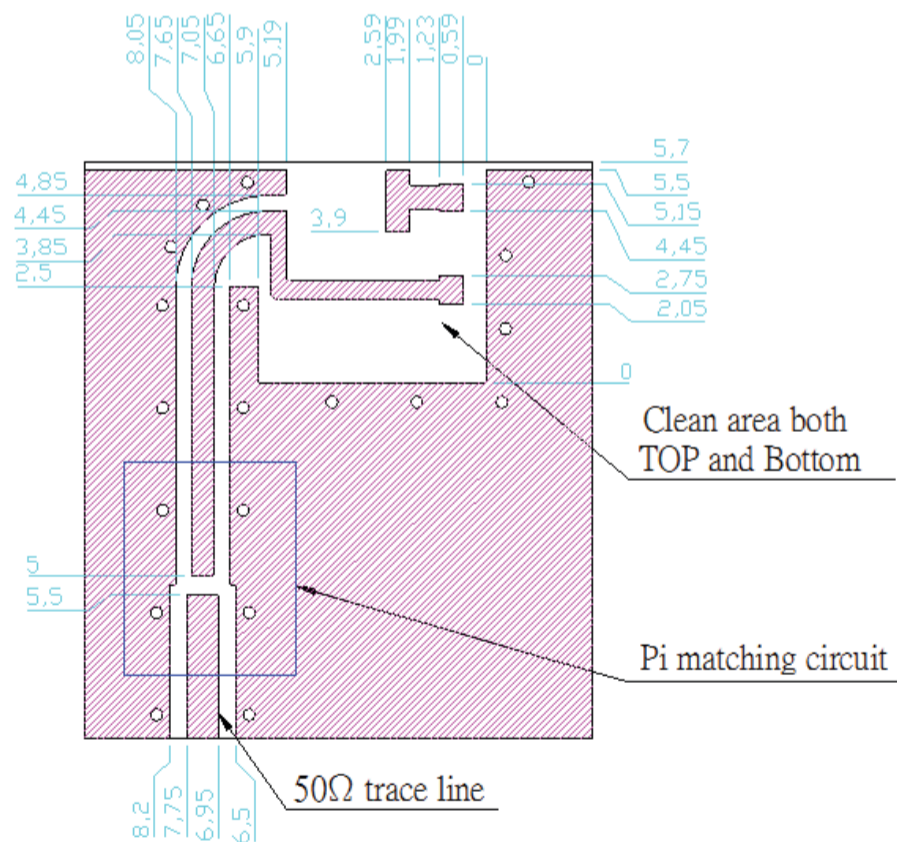
Top View



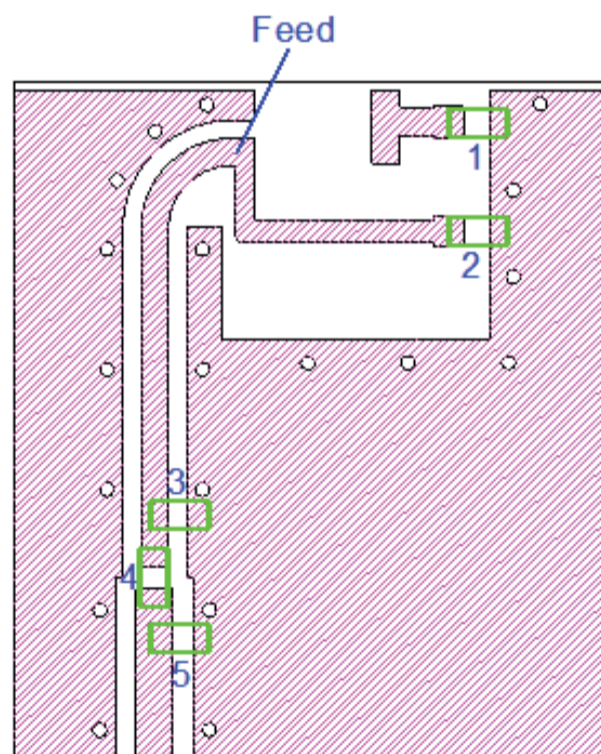
Bottom View

Unit: mm

Recommended Layout

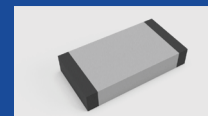


Matching Circuit



| Matching Circuit Component | | | | | |
|----------------------------|-----|-----|-------|----|-----|
| NO. | 1 | 2 | 3 | 4 | 5 |
| Description | 2pF | 1pF | 3.3pF | 0Ω | N.A |

GNSS/GPS/GLONASS/BEIDOU SMD Chip Antenna

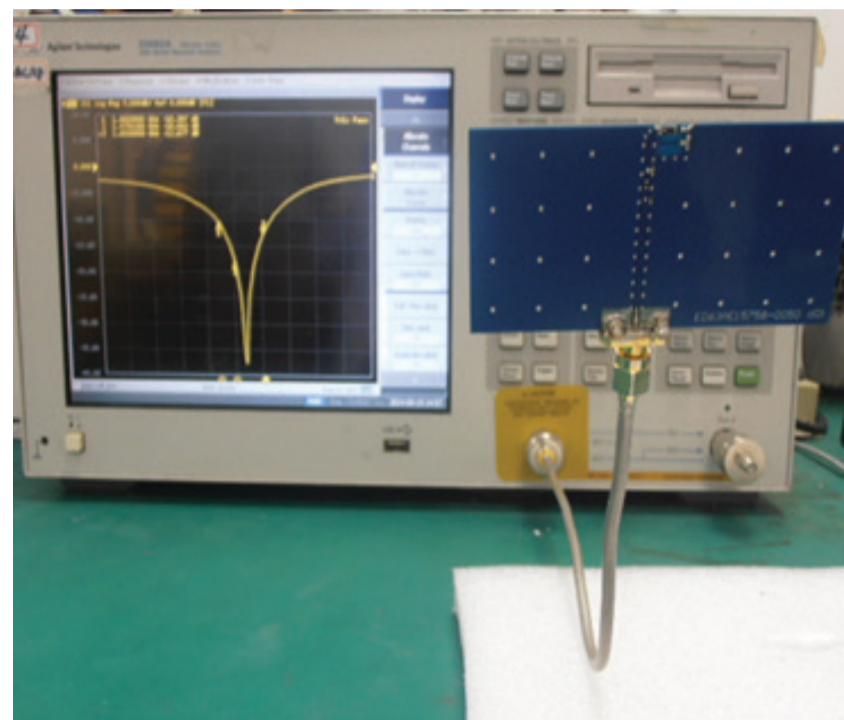
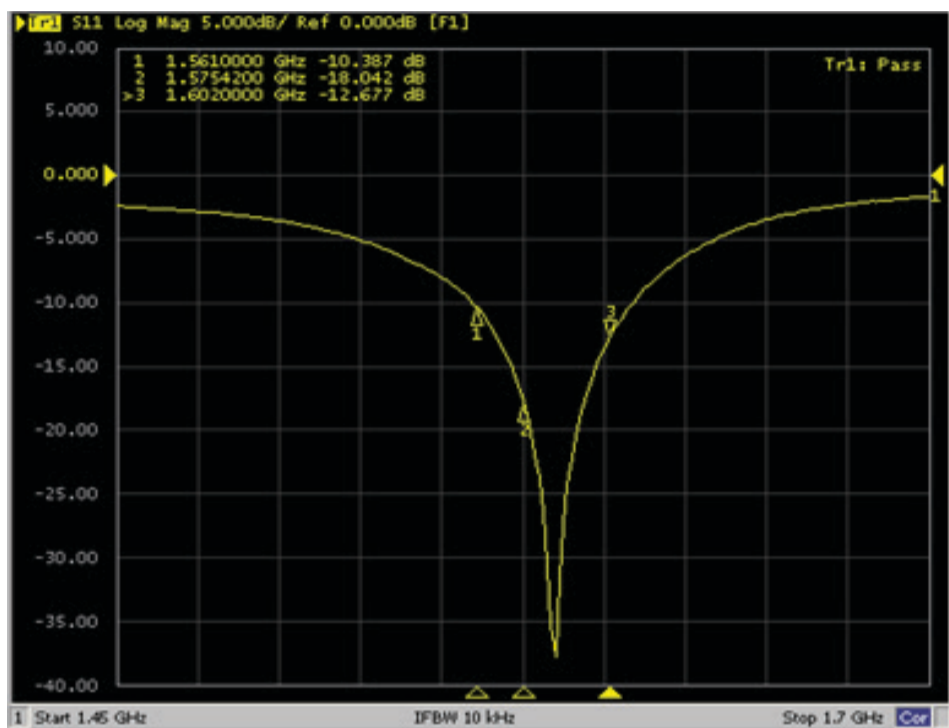


ACAR0301-SG3



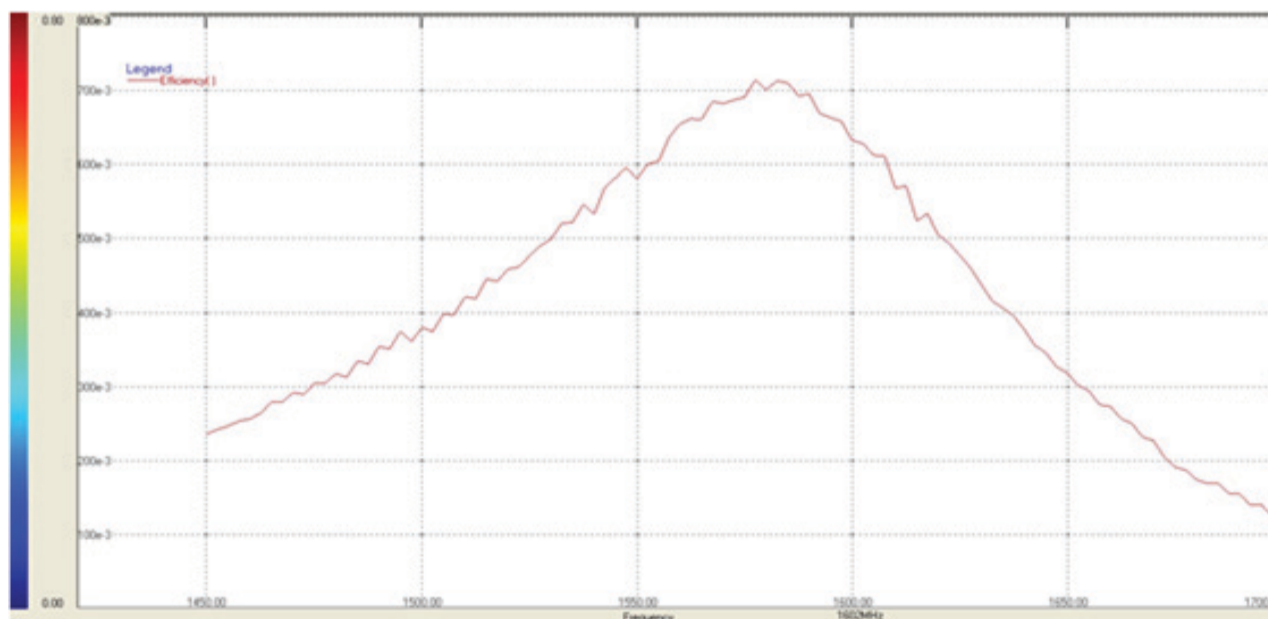
3.05 x 1.6 x 0.55 mm
RoHS/RoHS II Compliant
MSL - N/A

Antenna Response –Return Loss S11



| Frequency(MHz) | 1561 | 1575.42 | 1602 |
|----------------|--------|---------|--------|
| S11(dB) | -10.38 | -18.04 | -12.67 |

Efficiency



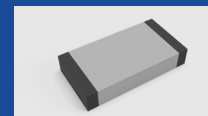
| Frequency(MHz) | Efficiency (%) |
|----------------|----------------|
| 1561.00 | 65.74 |
| 1575.42 | 70.06 |
| 1602.00 | 63.27 |



5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 08.15.2018

ABRACON IS
ISO9001-2015
CERTIFIED



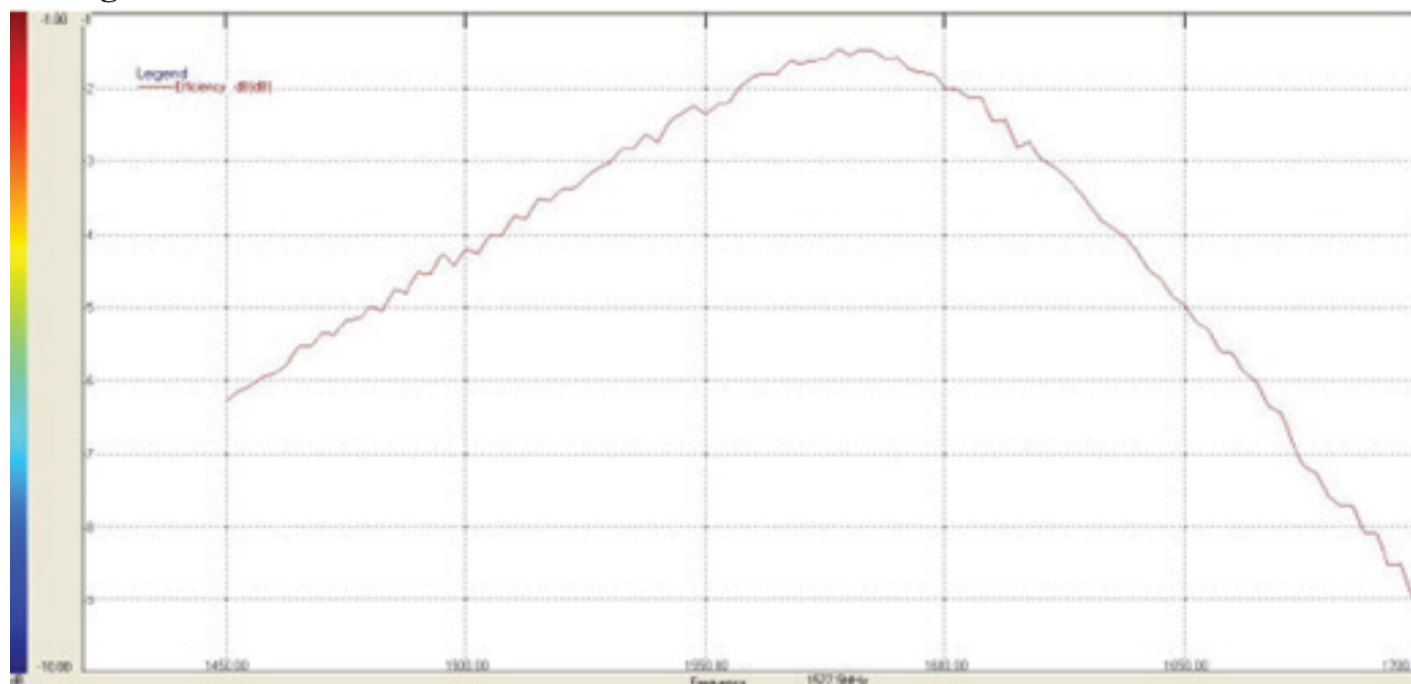
ACAR0301-SG3



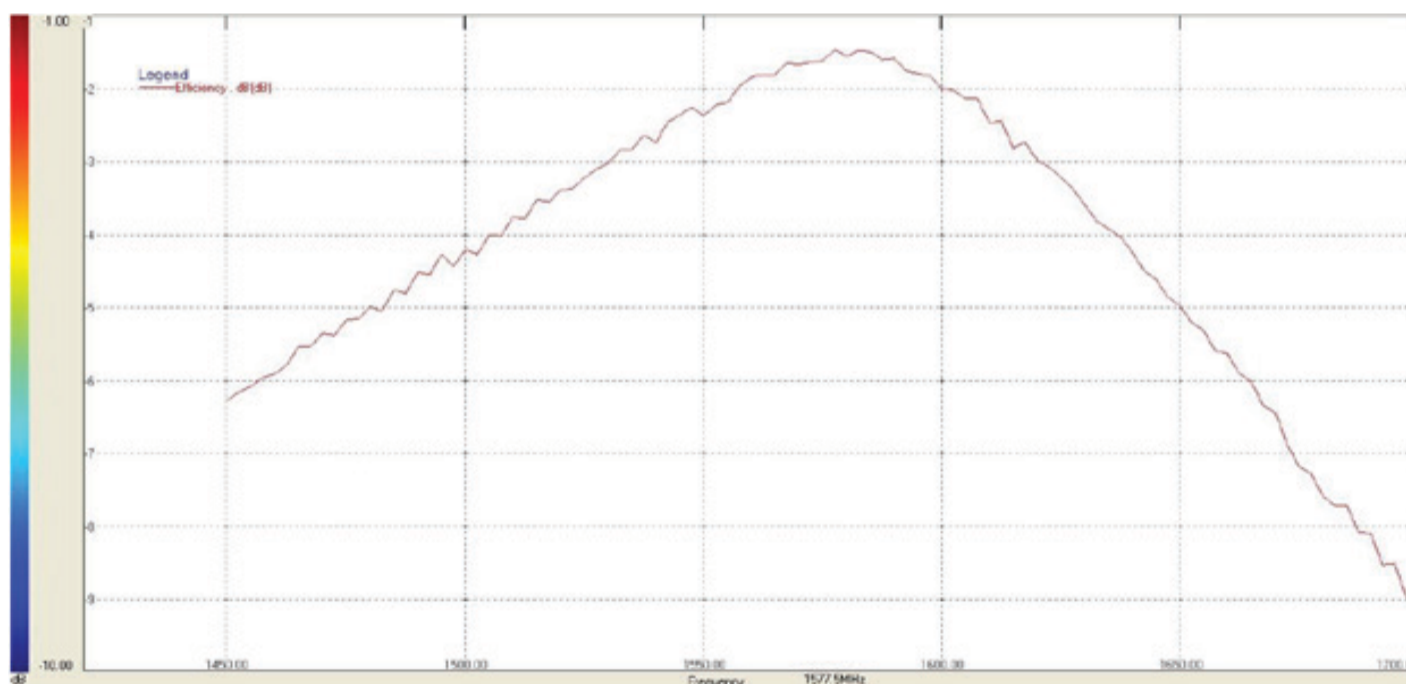
3.05 x 1.6 x 0.55 mm
 RoHS/RoHS II Compliant
 MSL - N/A

Gain

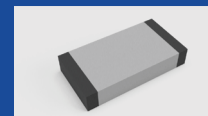
Average Gain



Peak Gain



| Frequency(MHz) | Avg. Gain | Peak Gain |
|----------------|-----------|-----------|
| 1561.00 | -1.82 | 1.69 |
| 1575.42 | -1.54 | -1.81 |
| 1602.00 | -1.98 | 1.43 |



ACAR0301-SG3



3.05 x 1.6 x 0.55 mm
RoHS/RoHS II Compliant
MSL - N/A

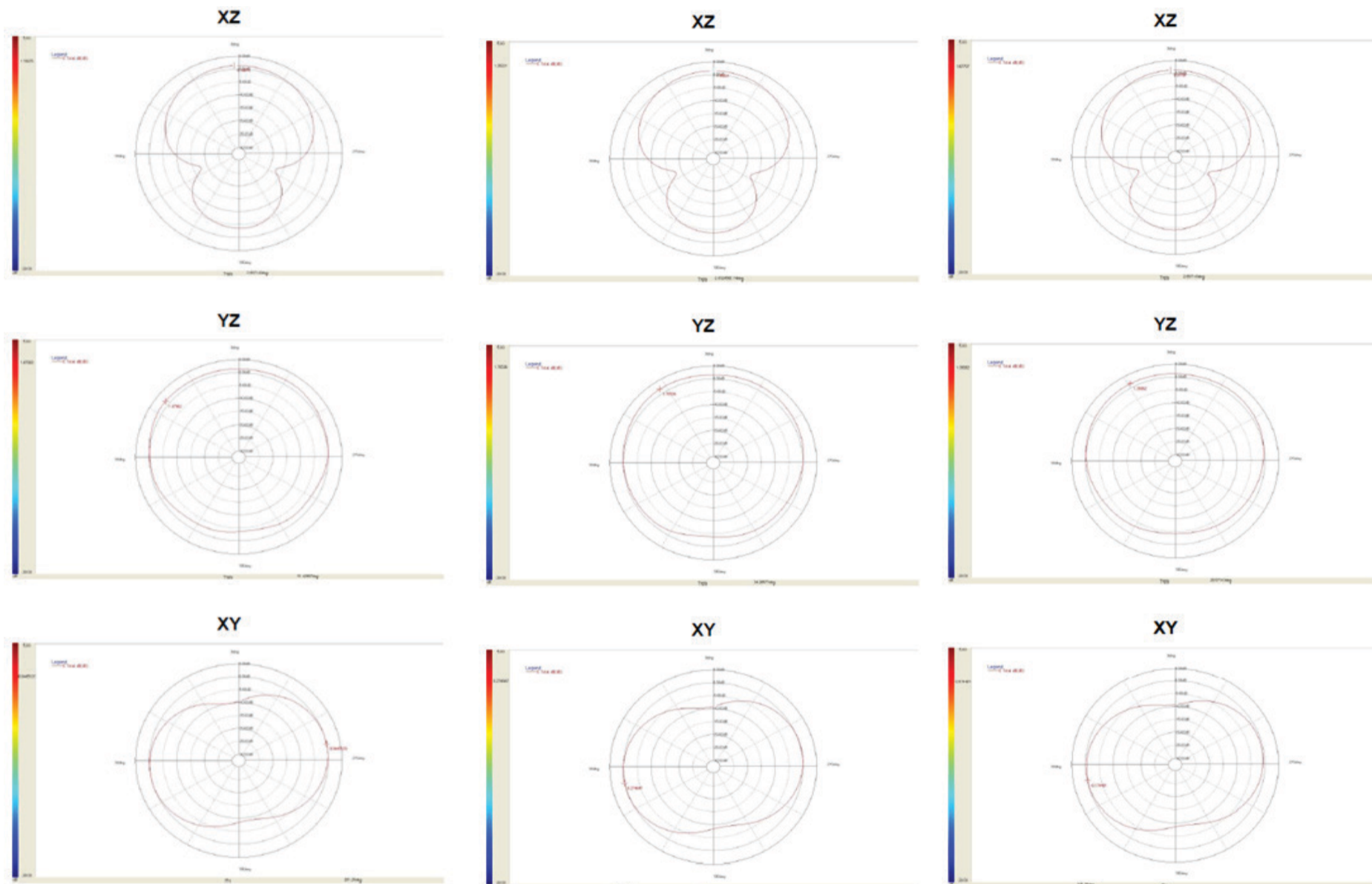
Radiation Pattern

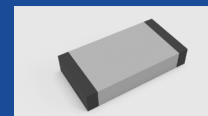
2D Radiation Patterns

1561 MHz

1575.42MHz

1602 MHz





ACAR0301-SG3

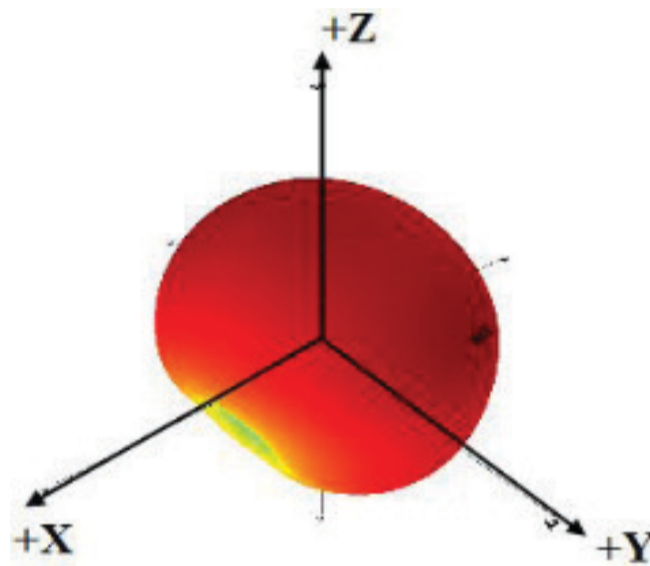
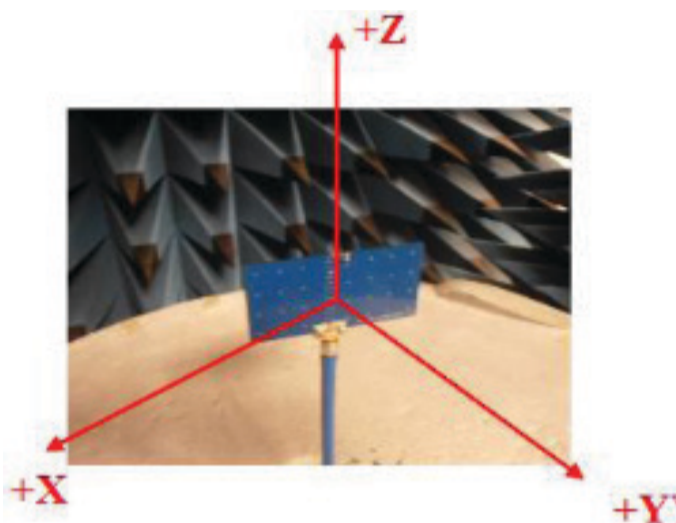


3.05 x 1.6 x 0.55 mm
RoHS/RoHS II Compliant
MSL - N/A

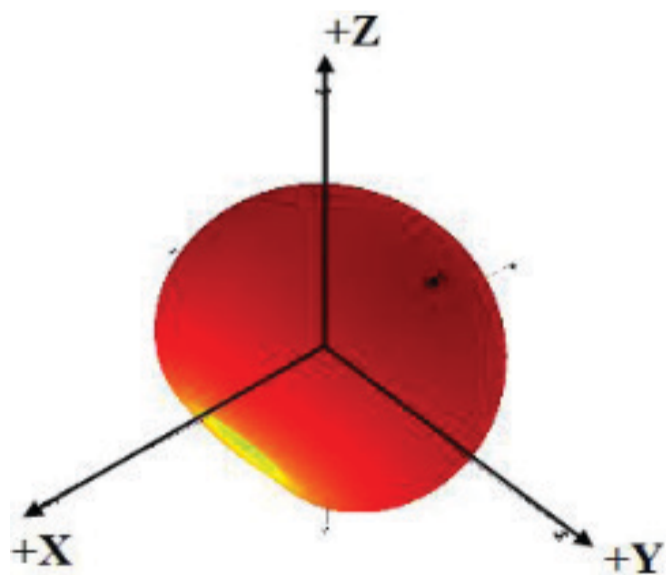
Radiation Pattern

3D Radiation Patterns

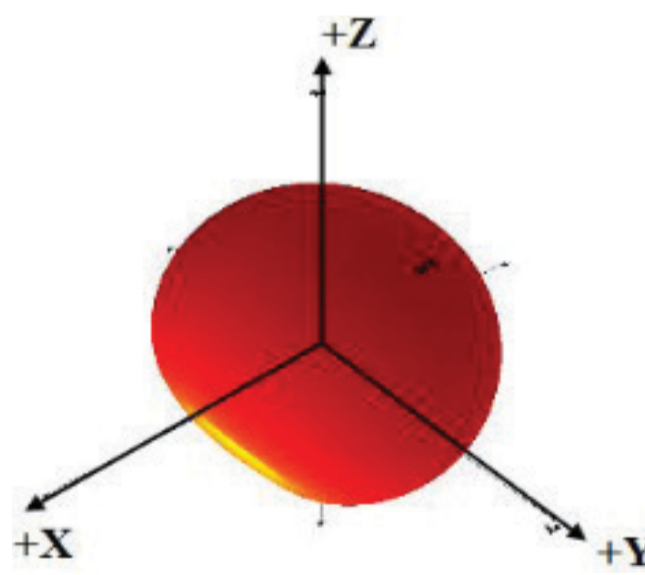
1561 MHz

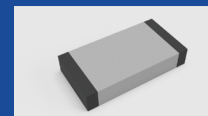


1575.42MHz



1602 MHz



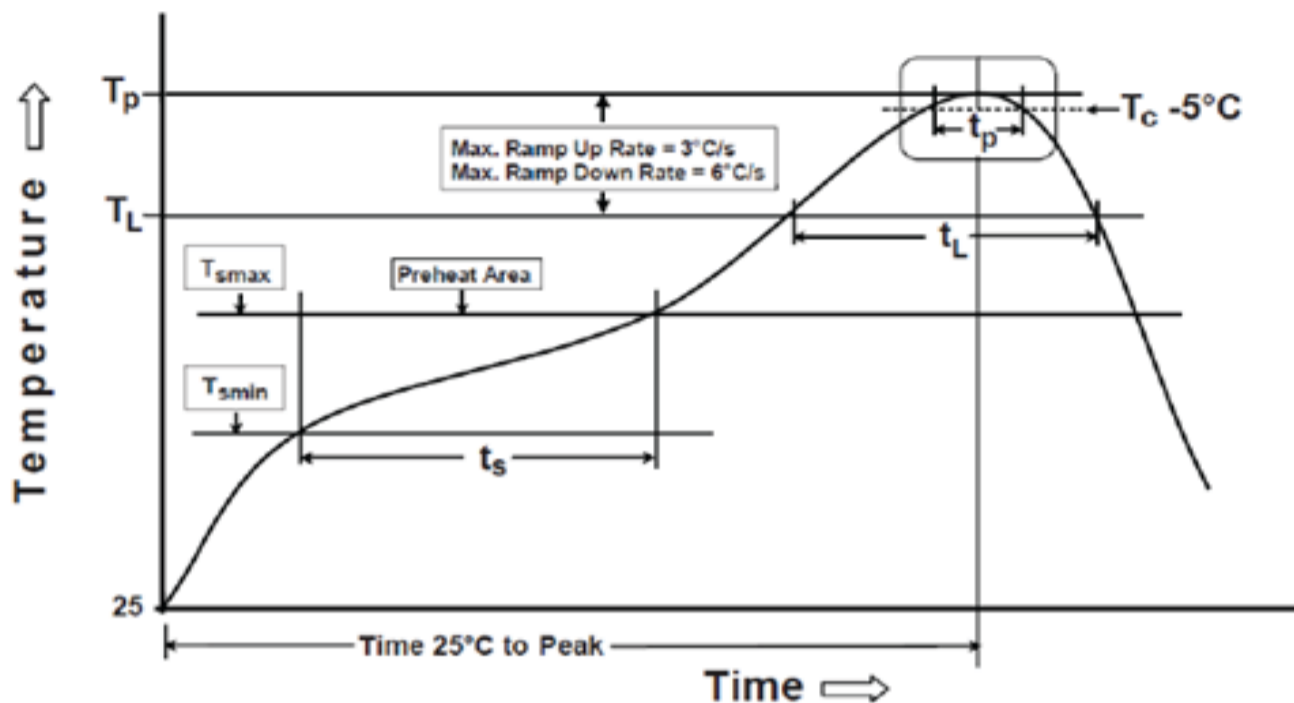


ACAR0301-SG3



3.05 x 1.6 x 0.55 mm
RoHS/RoHS II Compliant
MSL - N/A

Reflow Profile



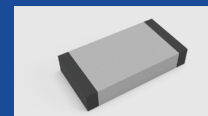
| Phase | Profile Feature | Pb-Free Assembly (SnAgCu) |
|---|---|----------------------------------|
| Preheat | -Temperature Min (T_{Smin}) -Temperature Max (T_{Smax}) -Time(ts) form (T_{Smin} to T_{Smax}) | 150°C 200°C 60-120 seconds |
| Ramp-Up | Avg. Ramp-up Rate (T_{Smax} to TP) | 3°C/second(max) |
| Reflow | -Temperature (TL) -Total Time above TL (tL) | 217°C 300-100 seconds |
| Peak | -Temperature(TP) -Time(tp) | 260°C 5-10 seconds |
| Ramp-Down | Rate | 6°C/second max. |
| Temperature at 25°C to Peak Temperature | | 8 minutes max. |
| Composition of Solder Paste | | 96.5Sn/3Ag/0.5Cu |
| Solder Paste Model | | SHENMAO PF606-P26 |

NOTE:

If the temperature is over what is recommended, the component surface will peel or damage.

SOLDERING CONDITION:

Soldering iron temperature: 270±10 °C. Apply preheating at 120°C for 2-3 minutes. Finish soldering each terminal within 3 seconds. If the soldering iron is over 270±10 °C or 3 seconds, the component surface will peel or damage.



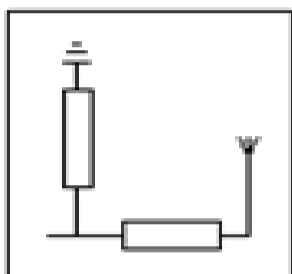
ACAR0301-SG3



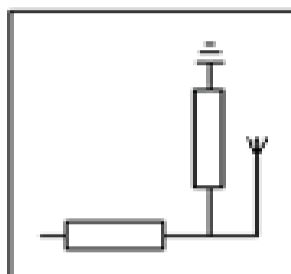
3.05 x 1.6 x 0.55 mm
 RoHS/RoHS II Compliant
 MSL - N/A

Transmission Line and Matching

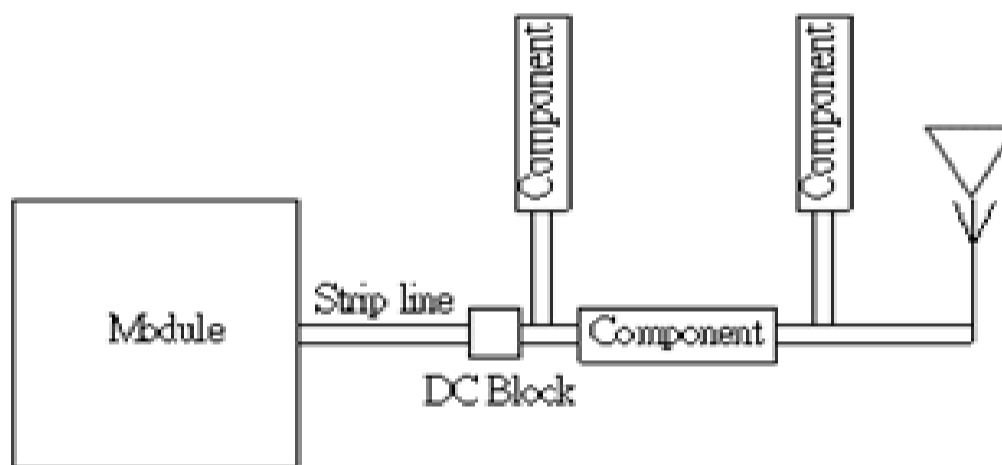
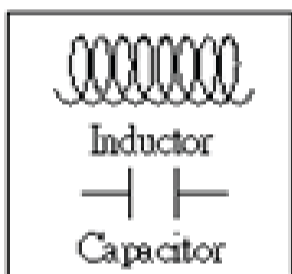
Typical config.1



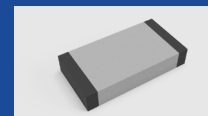
Typical config.2



Component types



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



ACAR0301-SG3

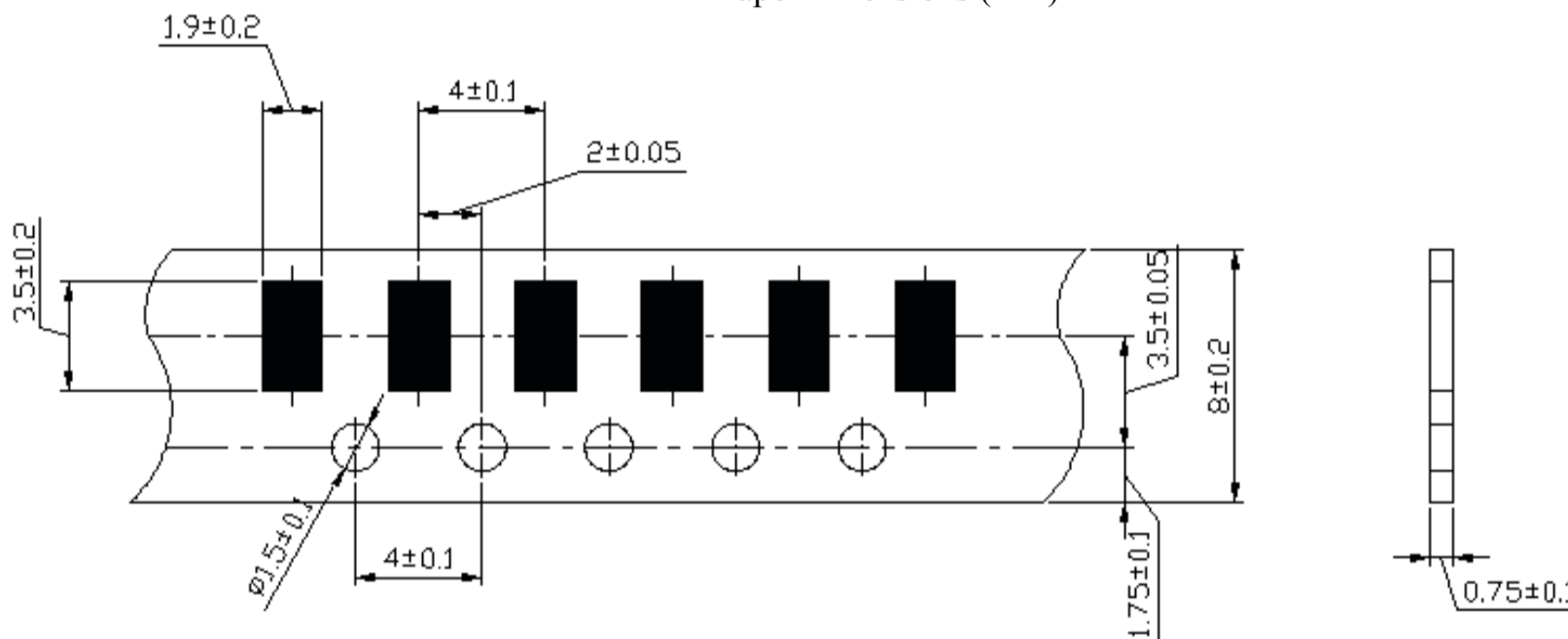


3.05 x 1.6 x 0.55 mm
 RoHS/RoHS II Compliant
 MSL - N/A

Packaging

1. Quantity per reel: 5,000pcs
2. Dimensions of inner box: 350*350*47mm
3. Quantity per outer carton: 140,000pcs
4. Weight of outer carton: 5.5 KG

Tape Dimensions (mm)



Reel Dimensions (mm)

