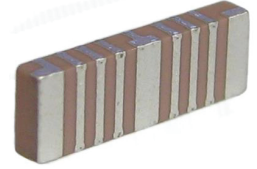


RFID Chip Antenna



9.0 x 3.0 x 1.2 mm

ACAJ-110-T



RoHS / RoHS II Compliant



Moisture Sensitivity Level (MSL) – MSL = 1

FEATURES:

- Passive Dielectric Chip Antenna
- Covering dual ISM bands 868MHz and 915MHz
- SMA mount, Reflowable to 255 degrees C max.
- Compact Dimensions (9.0mm x 3.0mm x 1.2mm)
- Peak Gain – 868MHz -2.5dBi, 915MHz -2.7dBi
- VSWR 3.0:1 Max (measured on matched EV board)
- Impedance 50 Ohms
- Linear Polarization / Omni-directional azimuth pattern
- RoHS/RoHS II compliant

APPLICATIONS:

- ISM 868 / 915MHz
- Low power radio links
- Sensor networks
- For use with ultra low power transceiver IC's

STANDARD SPECIFICATIONS

| ITEM | | SPECIFICATION | |
|-----------------------|---------|------------------|------|
| Frequency Range | | 868/915MHz | |
| VSWR | | 3.0: 1 Max | |
| Polarization | | Linear | |
| Azimuth Beam Pattern | | Omni-directional | |
| Impedance | | 50Ω | |
| Operating Temperature | | -35°C to + 85°C | |
| Frequency [MHz] | | 868 | 915 |
| Gain [dBi] | Peak | -2.5 | -2.7 |
| | Average | -3.4 | -1.8 |
| Efficiency [%] | | 34 | 37 |

The results are measured on the 100x50mm² evaluation board.

PART IDENTIFICATION:

ACAJ-110-□

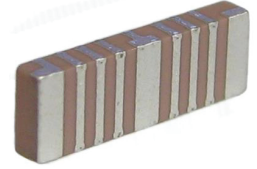


| Packaging | |
|-------------|-------------------------------|
| Blank: Bulk | |
| T: | Tape and Reel (1000 per reel) |

RFID Chip Antenna

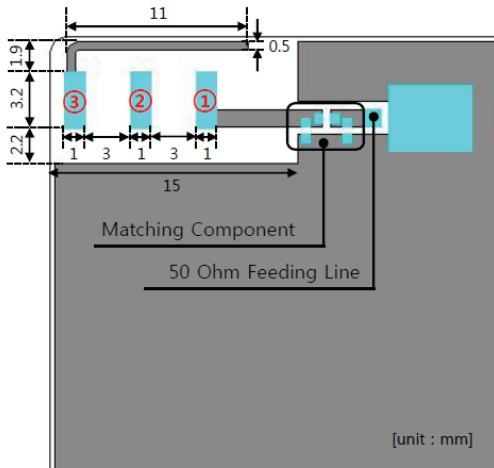
ACAJ-110-T

Pb RoHS / RoHS II Compliant



9.0 x 3.0 x 1.2 mm

PCB DESIGN GUIDE



Antenna Top



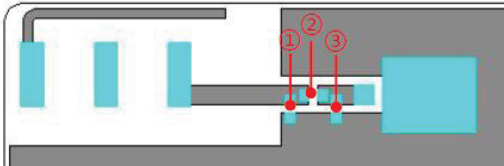
Antenna Bottom



| NO | Pin Assignment |
|----|---------------------------|
| ① | Feeding |
| ② | N/C |
| ③ | N/C (Connected Stub line) |

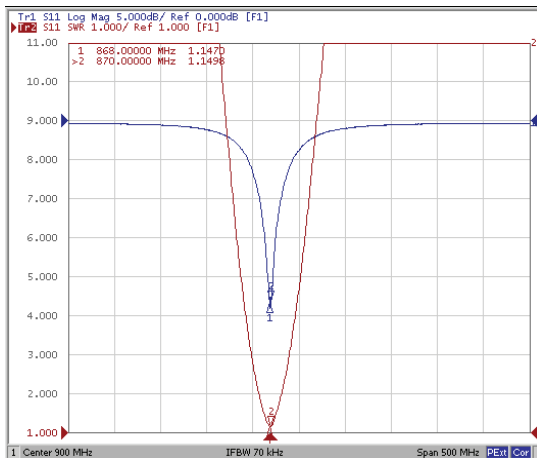
MEASUREMENT GUIDE

Typical Measurement Result (VSWR, RL & Smith Chart) @ 868MHz

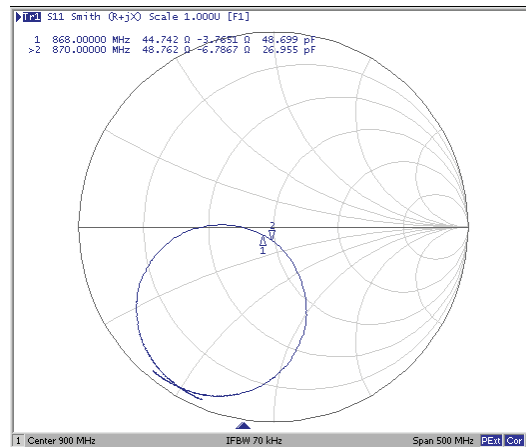


| NO | Matching Value |
|----|----------------|
| ① | N/C |
| ② | 15 nH |
| ③ | 5.0 pF |

Measured VSWR & Return-loss @868MHz



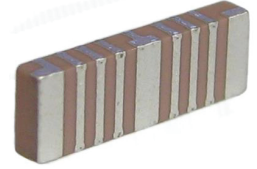
Measured Smith Chart @868MHz



RFID Chip Antenna

ACAJ-110-T

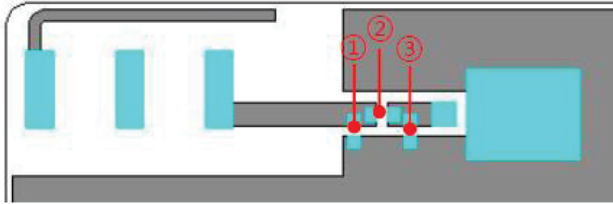
Pb RoHS / RoHS II Compliant



9.0 x 3.0 x 1.2 mm

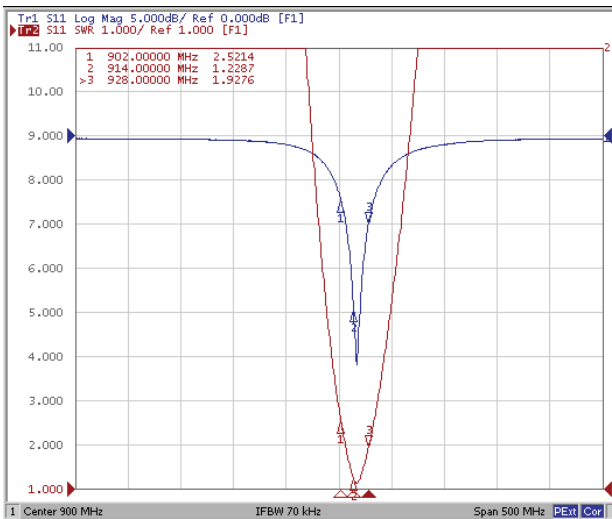
S11 (VSWR)- Penta Band (GSM850&900, DCS, PCS, U

Typical Measurement Result (VSWR, RL & Smith Chart) @ 915MHz

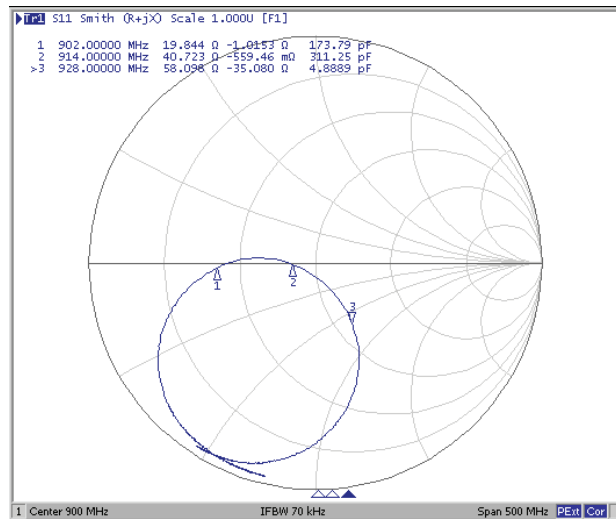


| NO | Matching Value |
|----|----------------|
| ① | N/C |
| ② | 8.2 nH |
| ③ | 4.3 pF |

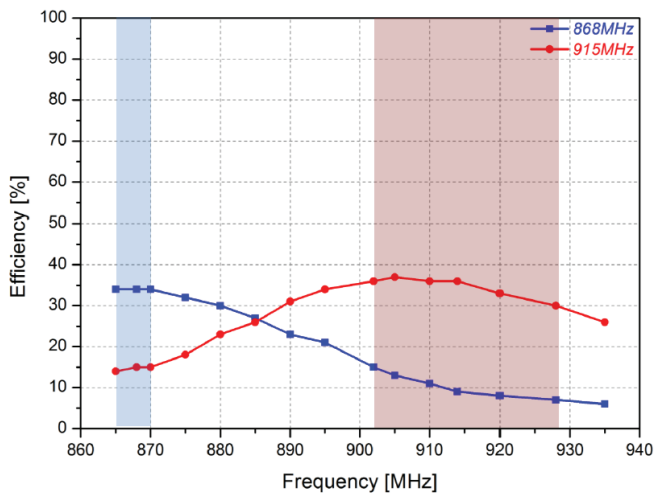
Measured VSWR & Return-loss @915MHz



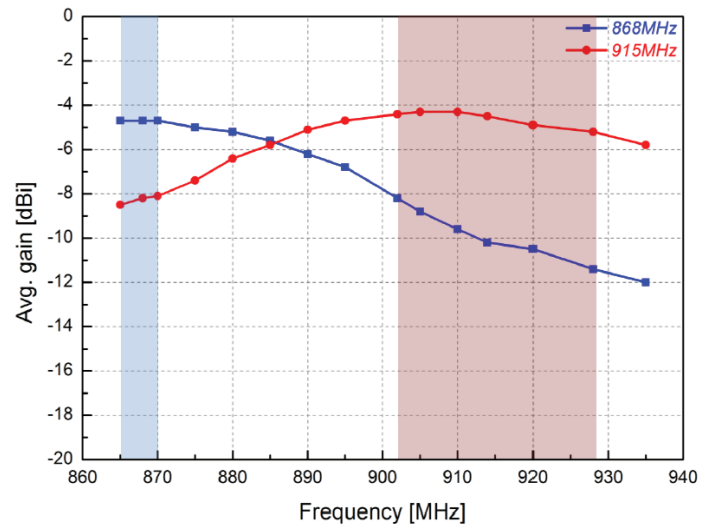
Measured Smith Chart @ 915 MHz



Measured Antenna Efficiency



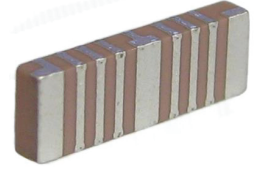
Measured Average Gain



RFID Chip Antenna

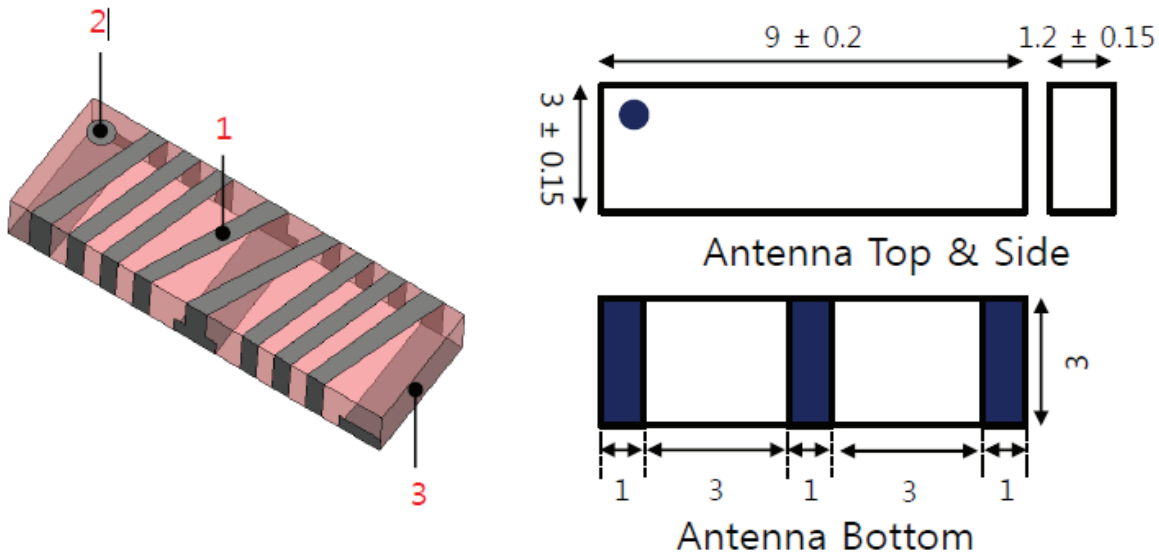
ACAJ-110-T

RoHS / RoHS II Compliant



9.0 x 3.0 x 1.2 mm

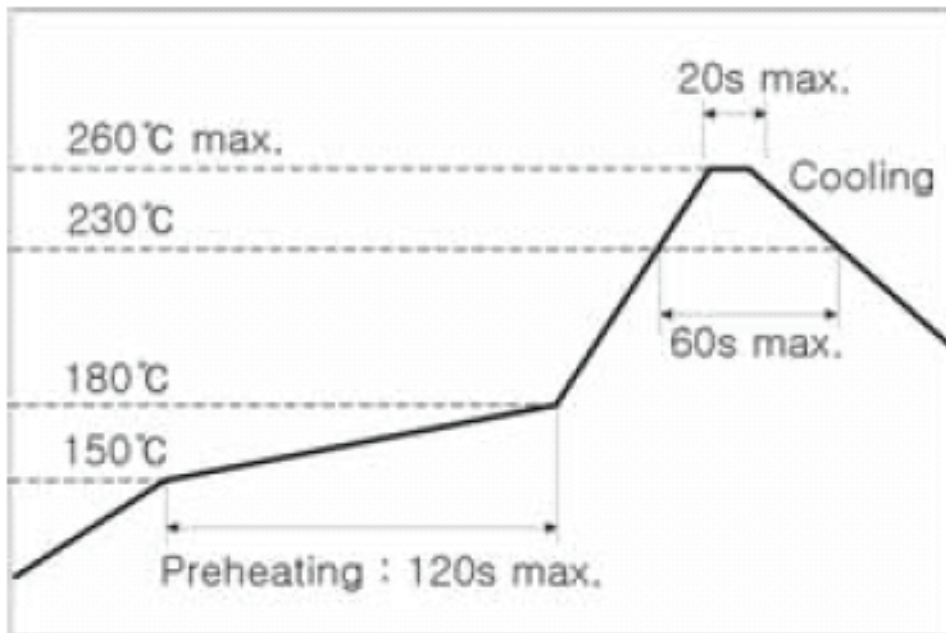
OUTLINE DIMENSION:



| No | Name | Function | Material |
|----|-----------|---------------------|----------|
| 1 | Electrode | Radiation Element | Ag |
| 2 | Electrode | Identification Mark | Ag |
| 3 | Body | Dielectric Material | Ceramic |

Unit: mm

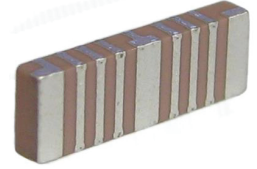
REFLOW PROFILE:



RFID Chip Antenna

ACAJ-110-T

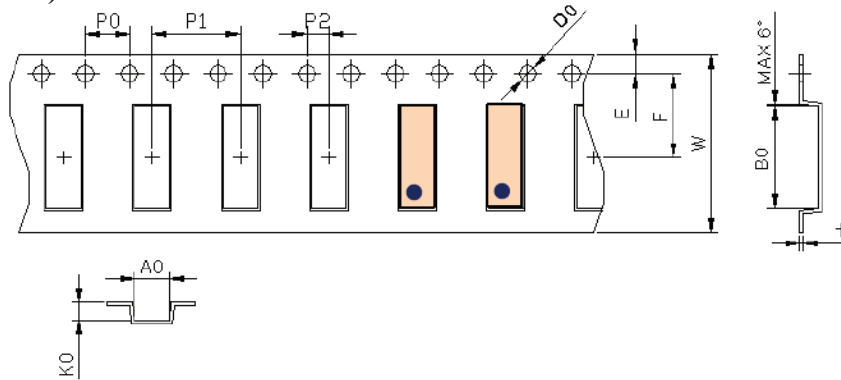
 RoHS / RoHS II Compliant 



9.0 x 3.0 x 1.2 mm

TAPE & REEL:

Tape Dimensions (mm)



| | | | | | |
|----|------------|----|------------|---|-------------|
| A0 | 3.20 ±0.10 | P0 | 4.00 ±0.10 | E | 1.75 ±0.10 |
| B0 | 9.20 ±0.10 | P1 | 8.00 ±0.10 | F | 7.50 ±0.10 |
| K0 | 1.65 ±0.10 | P2 | 2.00 ±0.10 | W | 16.00 ±0.30 |
| D0 | 1.55 ±0.05 | - | - | t | 0.30 ±0.05 |

Packing Quantity

| Item | Quantity | Dimension |
|------|----------|------------|
| Reel | 1,000 ea | Φ7" * 16mm |

CAUTION:

Static voltage

Static voltage between signal & ground may cause deterioration & destruction of the component. Please avoid static voltage.

Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning.

Soldering

Only leads of the component may be soldered. Please avoid soldering to any other part of the component, such as the Ag patterning as this will change the performance of the antenna.

NOTES:

- The parts are manufactured in accordance with this specification. If other conditions and specifications which are required for this specification, please contact ABRACON for more information.
- ABRACON will supply the parts in accordance with this specification unless we receive a written request to modify prior to an order placement.
- In no case shall ABRACON be liable for any product failure from in appropriate handling or operation of the item beyond the scope of this specification.
- When changing your production process, please notify ABRACON immediately.
- ABRACON LLC's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. ABRACON's products are not specifically designed for Military, Aviation, Aerospace, Lifedependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from ABRACON LLC is required. Please contact ABRACON LLC for more information.
- All specifications and Marking will be subject to change without notice.

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ABRACON IS
ISO9001:2008
CERTIFIED

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