# SPECIFICATION

**SPEC NO.** : **SP03AE07000-0010**

**PART NO.** : **43A3AG03000011T**

**PRODUCT NAME** : **DCAO0S00**

**DESCRIPTION** : **Dielectric Chip Antenna (12.0x3.0x1.95 mm) RoHS Compliant Product**

**REVISION STATUS**

| VERSION | DATE | PAGE | REVISION DESCRIPTION | PREPARED | CHECKED | APPROVED |
|---|---|---|---|---|---|---|
| d01 | 2021.08.18 | Whole | New Issued | 翁秀惠 | 馬得淞 | 張敦信、吳佳宗 |

| Prepared By | Checked By | Approved By |
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# CIROCOMM TECHNOLOGY .

## *PART NUMBER: 43A3AG03000011T*

### 1. Scope

This specification covers the dielectric chip antenna for LTE Applications.

### 2. Name of the product

This product is named "Dielectric Chip Antenna".

### 3. Electrical characteristics

#### 3-1 Electrical characteristics of antenna

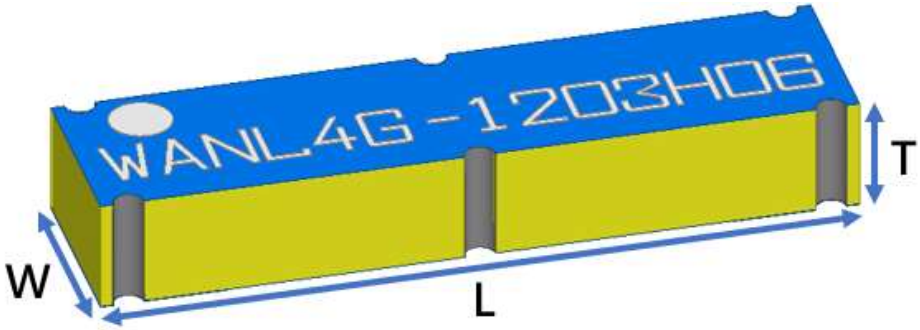
The antenna has the electrical characteristics given in Table 1 under the *cirocomm* standard installation conditions shown in the figure of Evaluation Board.

**Table 1**

| No | Parameter | Specification |
|---|---|---|
| 1 | Working Frequency | 824~960MHz<br>1700~2700MHz |
| 3 | Return Loss | -6 dB (Max) |
| 4 | Peak Gain | 2.8 / 1.8 dBi |
| 5 | Impedance | 50 Ohm |
| 6 | Operating Temperature | -40℃ ~ +110℃ |
| 7 | Maximum Power | 4 W |
| 8 | Resistance to Soldering Heats | 10 sec. ( @ 260℃) |
| 9 | Polarization | Linear |
| 10 | Azimuth | Omni-directional |
| 11 | Termination | Cu / Sn (Leadless) |

* Actual performance will depend on customer device environment.

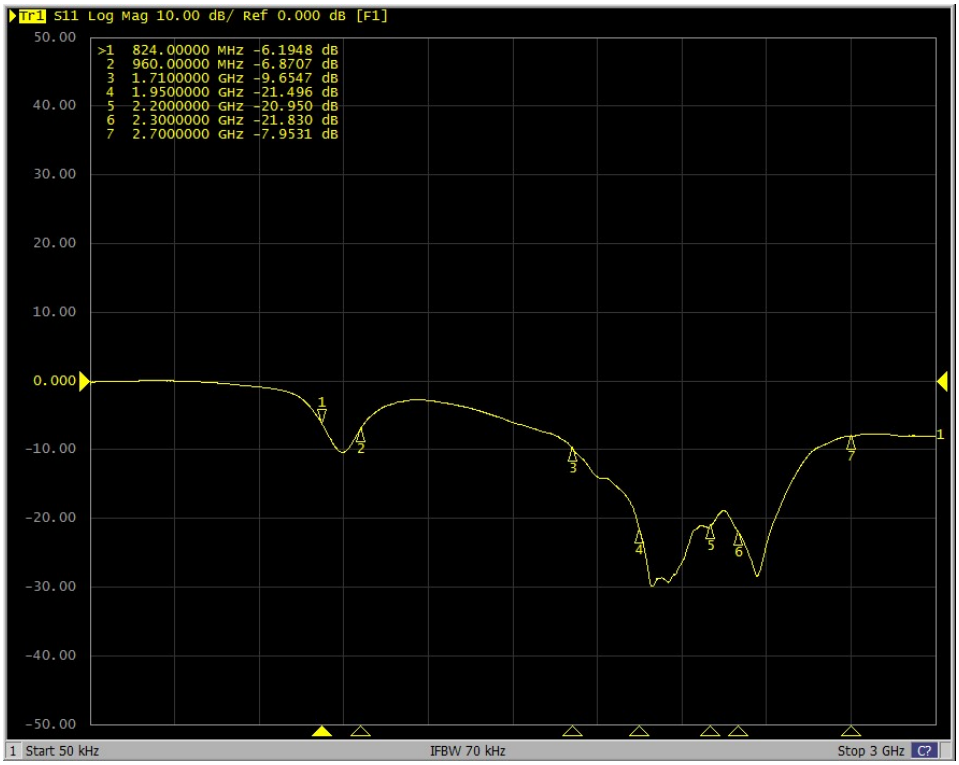
## 4. Antenna Dimension



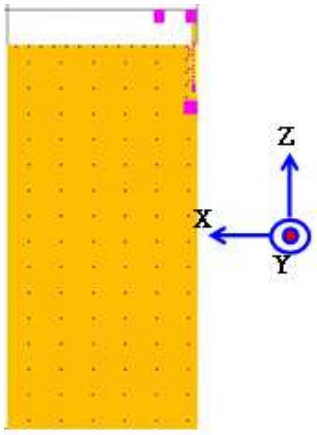

| | Dimension (mm) |
|---|---|
| L | 12.0 ± 0.20 |
| W | 3.0 ± 0.20 |
| T | 1.95 ± 0.20 |

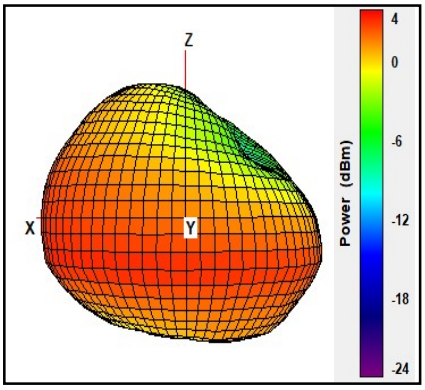
## 5.Measurement Results

### Return Loss

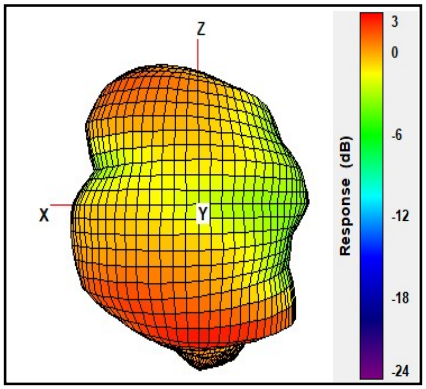


## Radiation Pattern

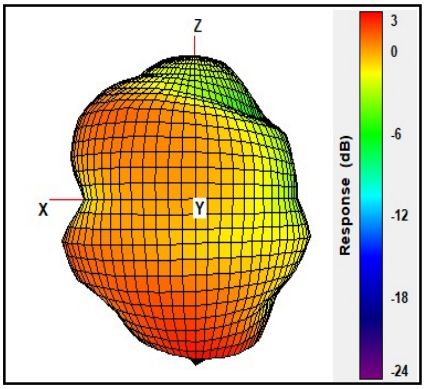



960MHz




1950MHz

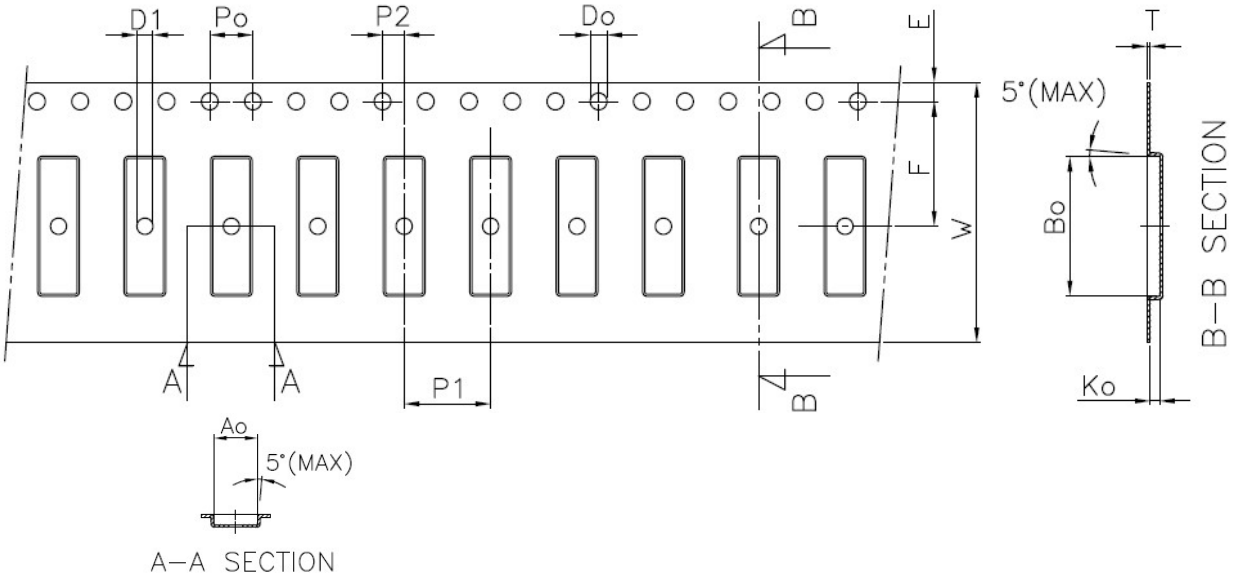



2300MHz

| | Efficiency | Peak Gain |
|---|---|---|
| 824 MHz | 66.76 % | 2.72 dBi |
| 960 MHz | 70.65 % | 2.85 dBi |
| 1700 MHz | 72.45 % | 1.69 dBi |
| 1950 MHz | 75.75 % | 1.83 dBi |
| 2200 MHz | 76.86 % | 1.85 dBi |
| 2300 MHz | 75.59 % | 1.87 dBi |
| 2700 MHz | 73.98 % | 1.84 dBi |

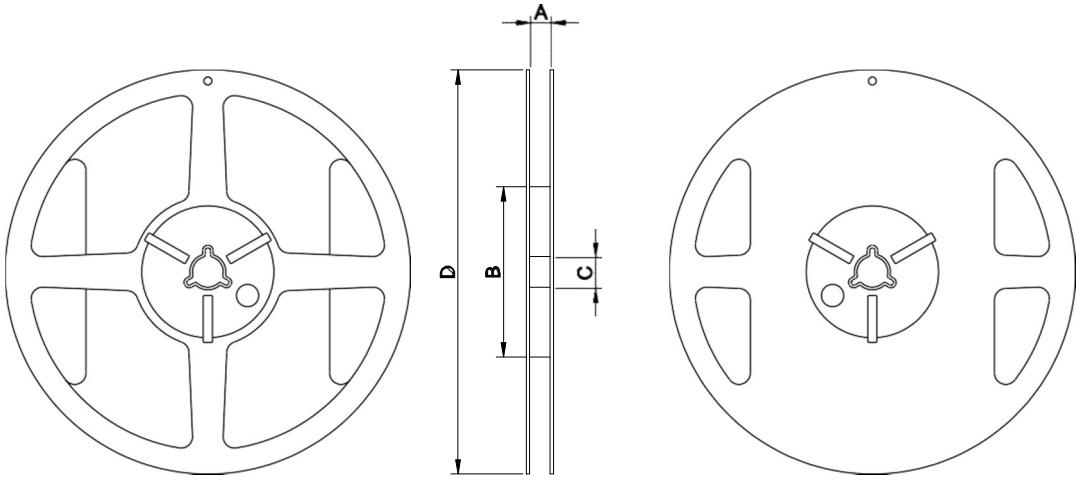
## 6. Packaging Information

### Tape Specification:




| W | Ao | Bo | Ko | F | E | Do | D1 | Po | P1 | P2 | t |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24.0 ±0.30 | 3.45 ±0.10 | 12.5 ±0.10 | 2.35 ±0.10 | 11.5 ±0.10 | 1.75 ±0.10 | 1.50 ±0.10 | 1.50 ±0.15 | 4.00 ±0.15 | 8.00 ±0.10 | 2.00 ±0.10 | 0.30 ±0.02 |

**Reel Specification: (7'', Φ180 mm)**




**7''x 24 mm**

| Tape Width(mm) | A(mm) | B(mm) | C(mm) | D(mm) | Chip/Reel(pcs) |
|---|---|---|---|---|---|
| 24 | 25±0.5 | 60±1.0 | 13.5±0.5 | 178±1.0 | 500 |

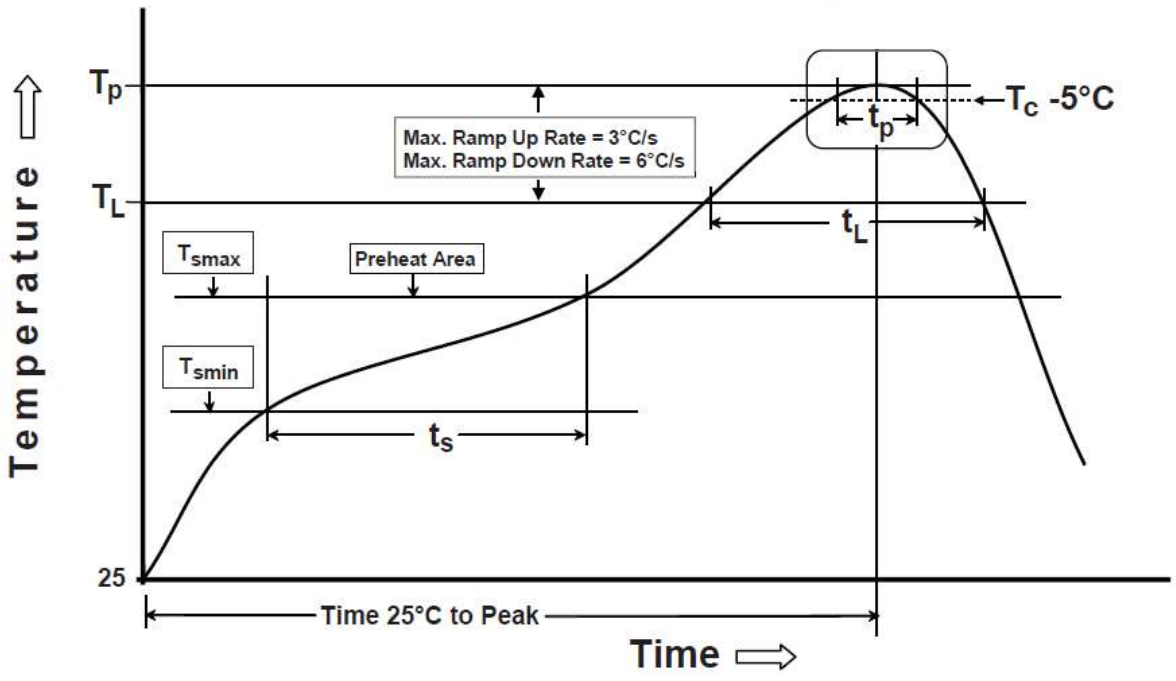
## 7. Recommended Reflow Temperature Profile

Cirocomm products can be assembled following Pb-free assembly. According to the Standard **IPC/JEDEC J-STD-020C**, the temperature profile suggested is as follow:

| Phase | Profile features | Pb-Free Assembly (SnAgCu) |
|---|---|---|
| PREHEAT | -Temperature Min(Tsmin)<br>-Temperature Max(Tsmax)<br>-Time(ts) form (Tsmin to Tsmax) | 150℃<br>200℃<br>60-120 seconds |
| RAMP-UP | Avg. Ramp-up Rate (Tsmax to TP) | 3℃/second(max) |
| REFLOW | -Temperature(TL)<br>-Total Time above TL (t L) | 217℃<br>30-100 seconds |
| PEAK | -Temperature(TP)<br>-Time(tp) | 260℃<br>10 second |
| RAMP-DOWN | Rate | 6℃ / second max. |
| Time from 25℃ to Peak Temperature | | 8 minutes max. |
| Composition of solder paste | | 96.5Sn/3Ag/0.5Cu |
| Solder Paste Model | | SHENMAO PF606-P26 |

Note：All the temperature measure point is on top surface of the component, if temperature over recommend, it will make component surface peeling or damage.

The graphic shows temperature profile for component assembly process in reflow ovens



## Soldering With Iron:

Soldering condition : Soldering iron temperature 270±10 ℃.

Apply preheating at 120℃ for 2-3 minutes. Finish soldering for each terminal within 3 seconds, if soldering iron over temperature 270±10 ℃ or 3 seconds, it will make component surface peeling or damage.

Soldering iron can not leakage of electricity.