

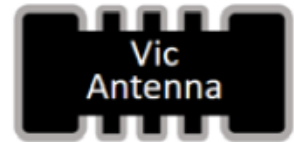
# VIC SEMICONDUCTOR CO.,LIMITED

## SPECIFICATION FOR APPROVAL



### Features

- Higher Reliability
- SMT Process
- Meet RoHS Spec
- Thick/Thin Film and Newly Patent Process
- Higher Gain and Higher Radiation Efficiency



### VCA3216K24M -----Chip Antenna

### Electrical Characteristics (@TA=25 °C Unless Otherwise Noted)

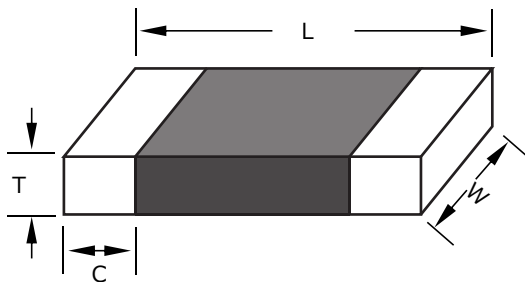
| Parameter        | Specification |              |
|------------------|---------------|--------------|
| Frequency        | 2400-2500MHz  | 5150-5850MHz |
| Bandwidth        | 100MHz        | 700MHz       |
| *Peak Gain       | 2.2dBi        | 2.8dBi       |
| *Peak Efficiency | 85.30%        | 76.4%        |
| Impedance        | 50Ω           | 50Ω          |
| Maximum Power    | 3.5           | 2.8W         |
| VSWR             | $\leq 2$      |              |
| Polarization     | Linear        |              |

\* Test condition: Test board size 98\*65 mm; Matching circuit: Pi matching circuit will be required

### Absolute Maximum Ratings

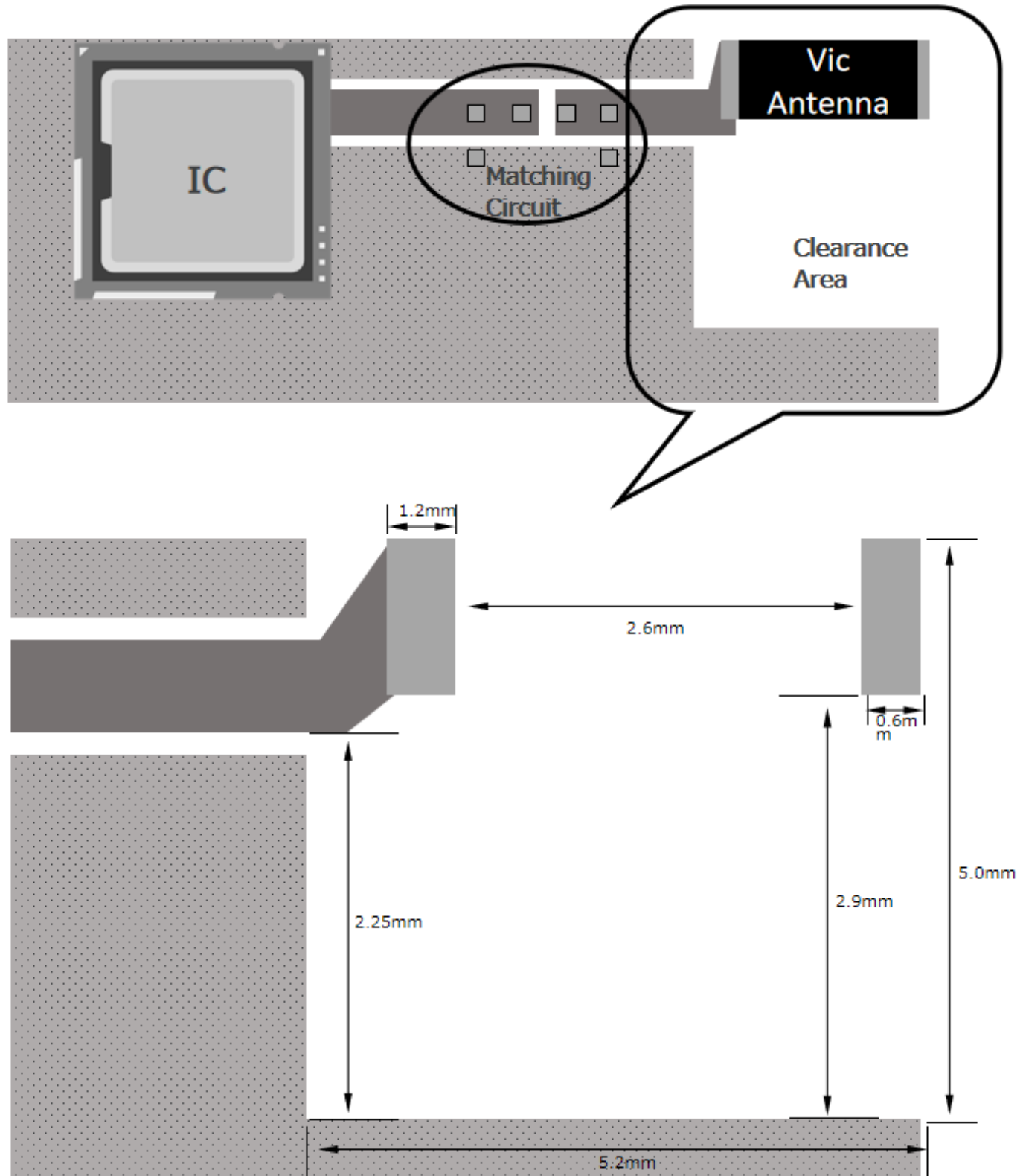
| Parameter                                         | Symbol            | Value       | Unit |
|---------------------------------------------------|-------------------|-------------|------|
| Maximum Operating temperature                     | T <sub>OPER</sub> | -40 to +90  | °C   |
| Maximum Storage temperature                       | T <sub>STG</sub>  | -55 to +125 | °C   |
| Maximum lead temperature for soldering during 10s | T <sub>L</sub>    | 260         | °C   |

### Product Dimension



| Dimension | MM<br>(INCHES)                   |
|-----------|----------------------------------|
| L         | $3.2 \pm 0.2$<br>(0.126 ± 0.008) |
| W         | $1.6 \pm 0.2$<br>(0.063 ± 0.008) |
| T         | $0.9 \pm 0.2$<br>(0.035 ± 0.008) |
| C         | $0.5 \pm 0.3$<br>(0.02 ± 0.012)  |

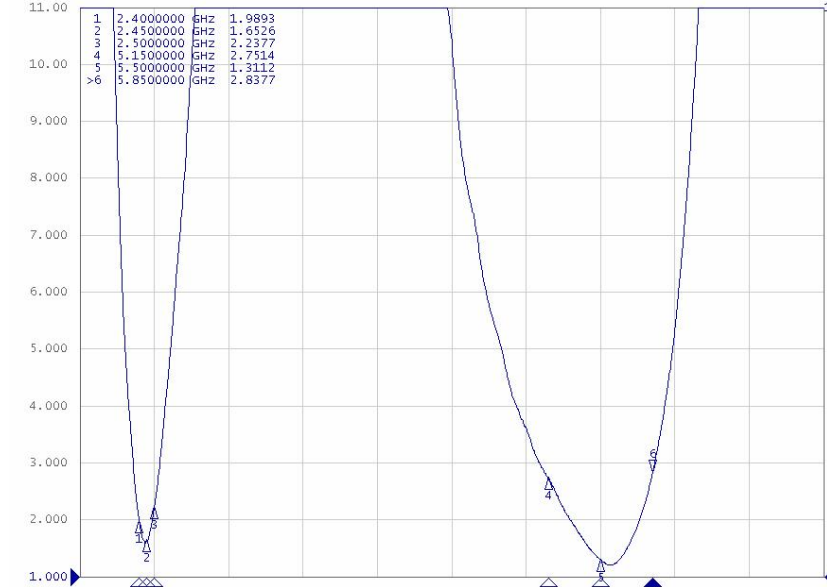
## Recommended PCB layout



## Characteristics

**Fig.1 VSWR**

S22 SWR 1.000/ Ref 1.000 [F1 D/M]

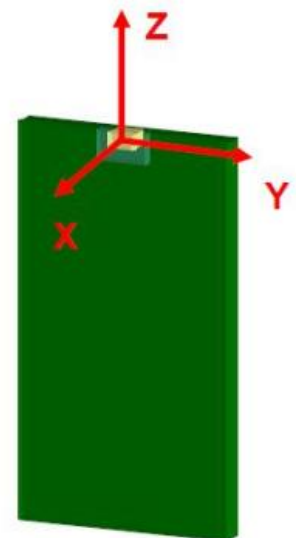
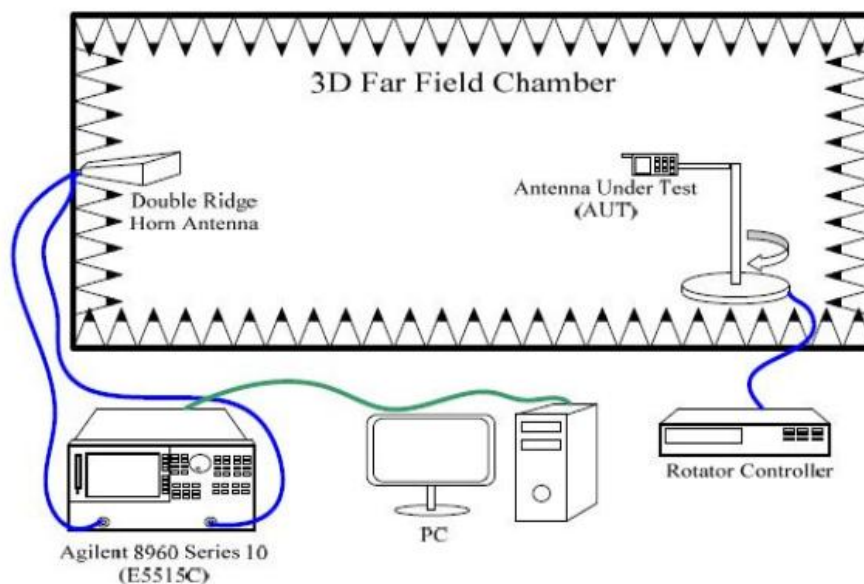


| Frequency (MHz) | VSWR |
|-----------------|------|
| 2400            | 2.0  |
| 2450            | 1.7  |
| 2500            | 2.2  |
| 5150            | 2.8  |
| 5500            | 1.3  |
| 5850            | 2.8  |

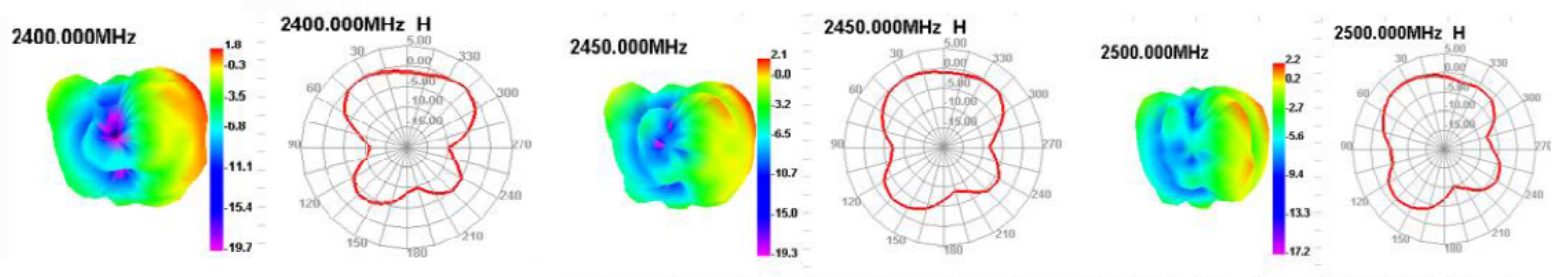
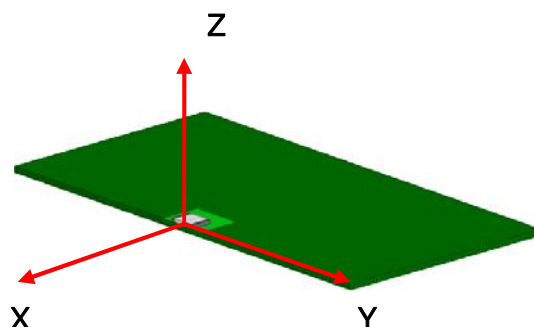
## Radiation Pattern

The Gain pattern is measured in Xunjing's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.

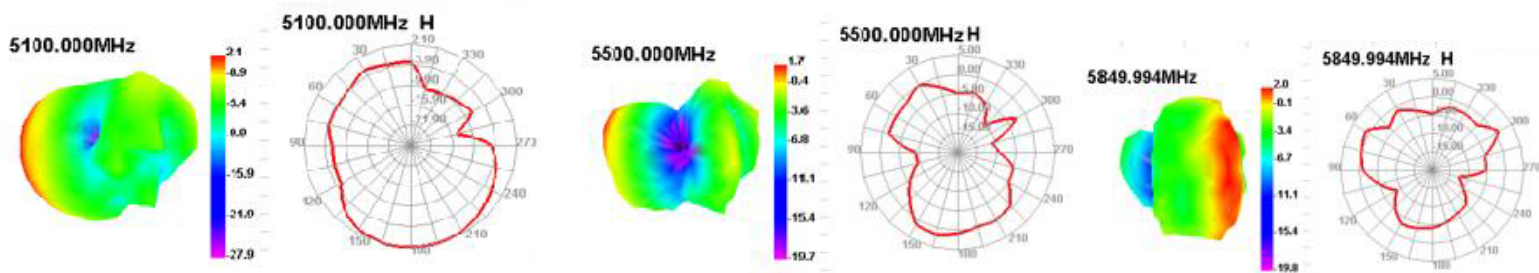
**Fig.2 FAR-field Chamber**



### 3D Gain Pattern (2400 -2500MHz)



### 3D Gain Pattern (5100-5850 MHz)

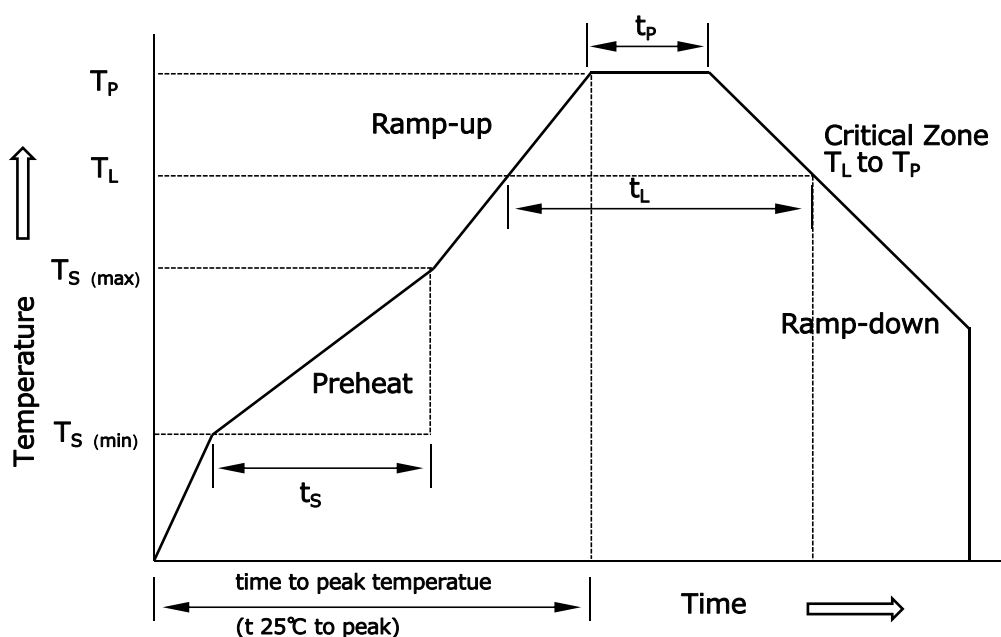




## VCA3216Y25TB ----- Multilayer chip Antenna

### Recommendable reflow soldering

| Profile Feature                                                                                                                           | Pb-Free Assembly                  |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Average Ramp-UP Rate<br>(T <sub>smax</sub> to T <sub>p</sub> )                                                                            | 3 °C/secondmax.                   |
| Preheat<br>-Temperature Min(T <sub>smin</sub> )<br>-Temperature Max(T <sub>smax</sub> )<br>-Time(T <sub>smin</sub> to T <sub>smax</sub> ) | 150 °C<br>200 °C<br>60-180seconds |
| Time maintained above:<br>-Temperature(T <sub>L</sub> )<br>-Time(t <sub>L</sub> )                                                         | 217 °C<br>60-150 seconds          |
| Peak/Classification Temperature(T <sub>p</sub> )                                                                                          | 260°C                             |
| Time within 5°C of actual Peak<br>Temperature(t <sub>p</sub> )                                                                            | 20-40 seconds                     |
| Ramp-Down Rate                                                                                                                            | 6°C/secondmax.                    |
| Time 25°C to Peak Temperature                                                                                                             | 8 minutes max.                    |

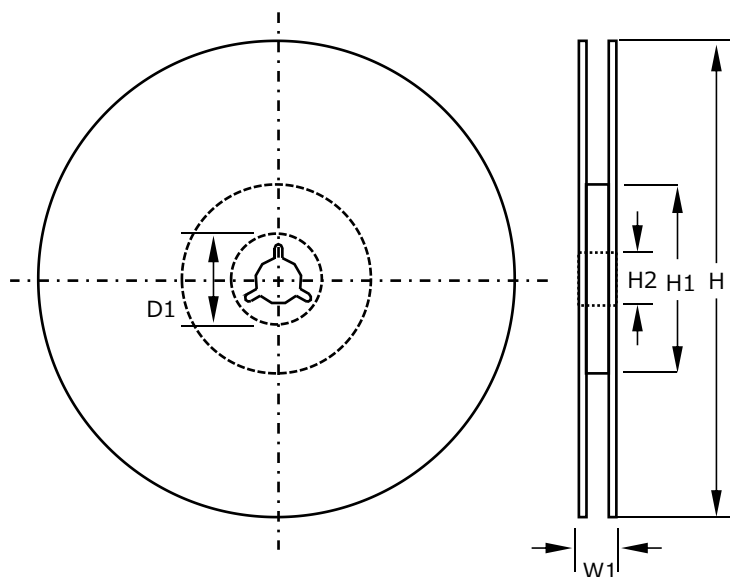
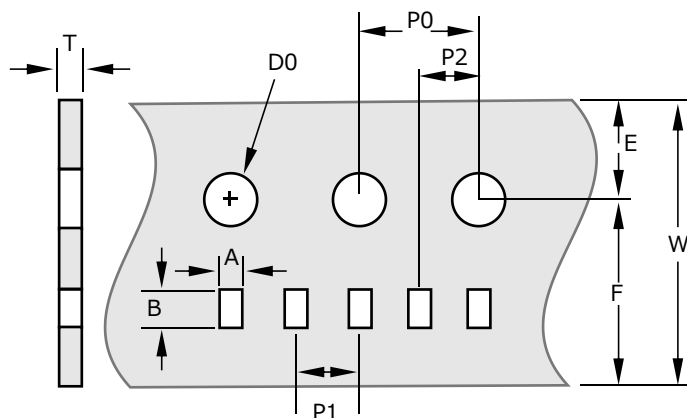




# VCA3216Y25TB ----- Multilayer chip Antenna

## Packaging Information

| Symbol | 1206(3216)                                 |
|--------|--------------------------------------------|
| A      | $1.88 \pm 0.03$<br>( $0.074 \pm 0.001$ )   |
| B      | $3.50 \pm 0.03$<br>( $0.138 \pm 0.001$ )   |
| E      | $1.75 \pm 0.10$<br>( $0.069 \pm 0.004$ )   |
| F      | $3.5 \pm 0.05$<br>( $0.138 \pm 0.002$ )    |
| P0     | $4.00 \pm 0.10$<br>( $0.157 \pm 0.004$ )   |
| P1     | $4.00 \pm 0.10$<br>( $0.157 \pm 0.004$ )   |
| P2     | $2.00 \pm 0.05$<br>( $0.079 \pm 0.002$ )   |
| D0     | $1.50 \pm 0.10$<br>( $0.059 \pm 0.004$ )   |
| W      | $8.00 \pm 0.30$<br>( $0.315 \pm 0.012$ )   |
| T      | $1.5 \pm 0.03$<br>( $0.059 \pm 0.001$ )    |
| D1     | $21.00 \pm 0.80$<br>( $0.827 \pm 0.032$ )  |
| H      | $180.00 \pm 2.00$<br>( $7.087 \pm 0.079$ ) |
| H1     | $62.0 \pm 1.5$<br>( $2.44 \pm 0.059$ )     |
| H2     | $13.00 \pm 1.00$<br>( $0.512 \pm 0.039$ )  |
| W1     | $13.0 \pm 1.00$<br>( $0.512 \pm 0.039$ )   |



DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

### Quantity of products in the taping package

- (1) Standard quantity : 5,000 pcs/Reel for the Series.
- (2) Shipping quantity is a multiple of standard quantity.
- (3) For additional information, please contact your local Sales Representative.