



# **SMD CERAMIC ANTENNA**

## **Data Sheet**

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# **TS3216E245D05**

For 2400-2484MHz  
3.2x1.6mm [EIA1206]

## ■ FEATURES

- Light weight,compact
- Wide bandwidth,lowcost
- Built-in antenna with high gain

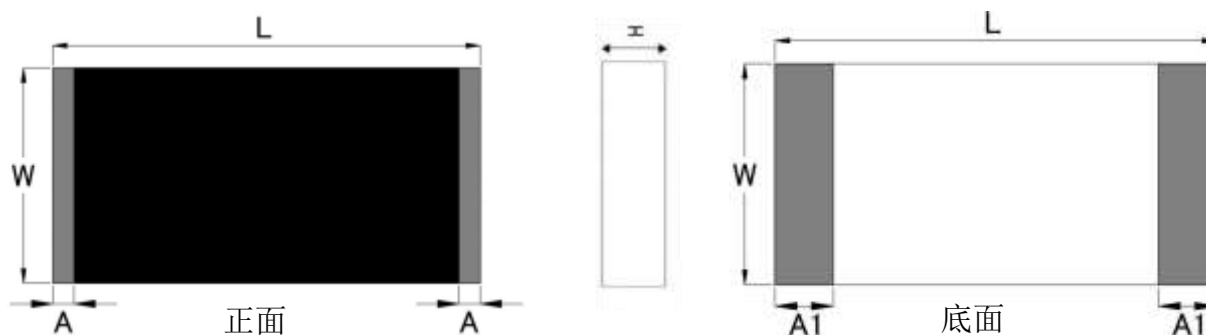
## ■ APPLICATIONS

- Bluetooth
- IEEE802.11g/b
- Zigbee systems,etc...



**TS3216E245D05**

## ■ SHAPES AND DIMENSIONS Dimensions in mm



L	W	A	A1	<a href="#">H</a>
3.2 ± 0.1	1.6 ± 0.1	0.15 ± 0.05	0.4 ± 0.15	0.55 ± 0.1

✱Remember: The SMT components should be placed with the black side facing upwards.

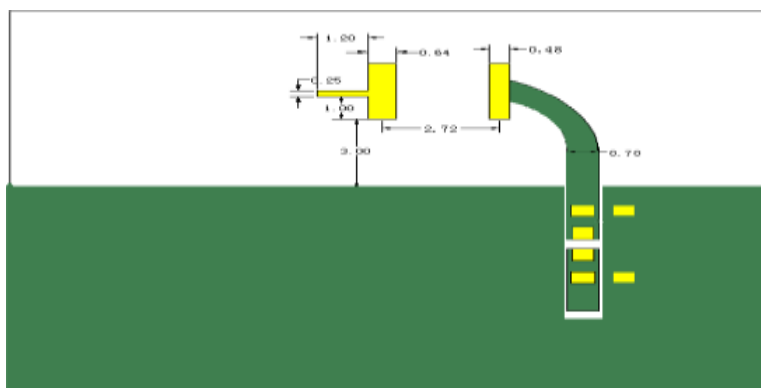
■ **Electrical Characteristics per line(TA=25°C)**

Parameter	Specification	Units
Frequency Band	2400~2483	MHz
Polarization	Linear	
Peak Gain	2.71	dBi
Peak Efficiency	68.8%	%
Impedance	50	$\Omega$

■ **PART NUMBERING SYSTEM**

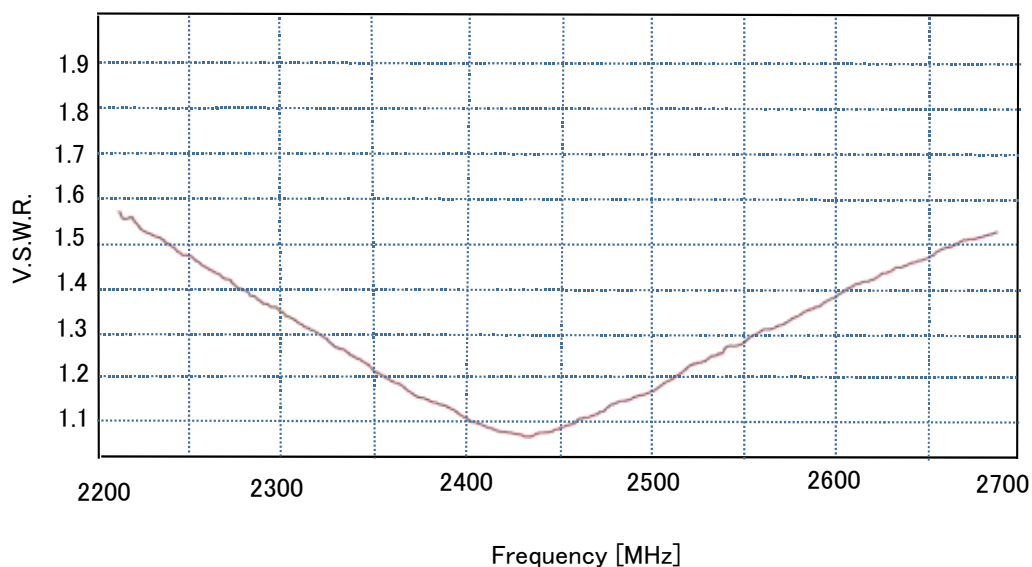
TS - 3216 - E - 2450 - D - 05

Brand      Dimension      Material      Frequency      Feeding mode      Type



**Typical Characteristics**

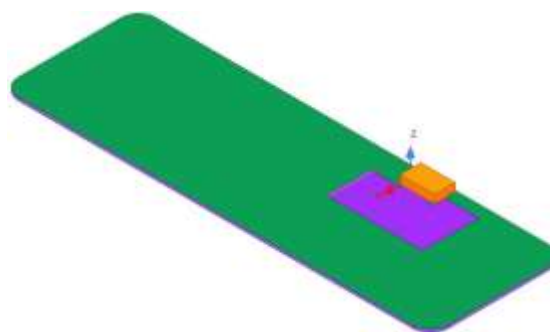
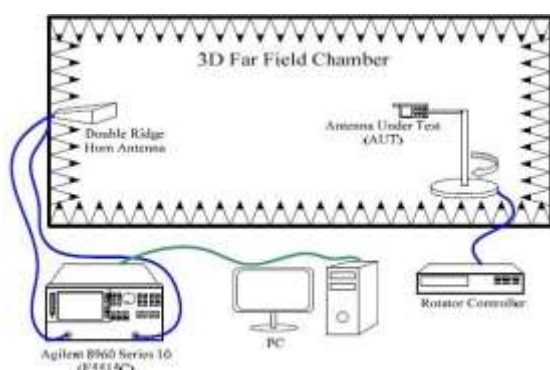
Fig.1 VSWR



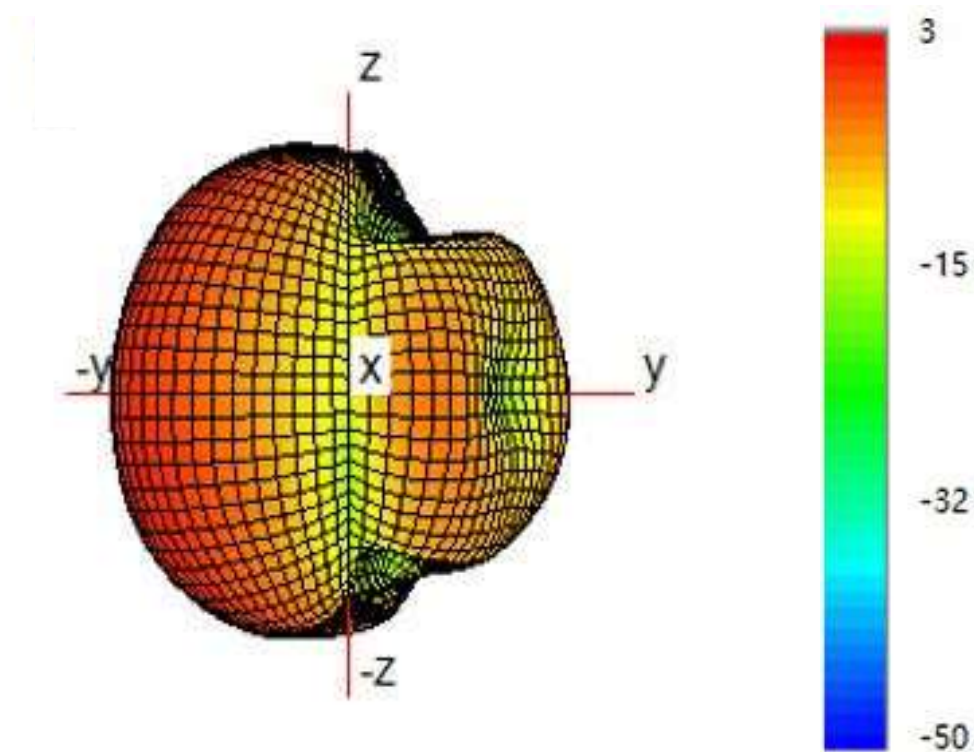
## Radiation Pattern

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

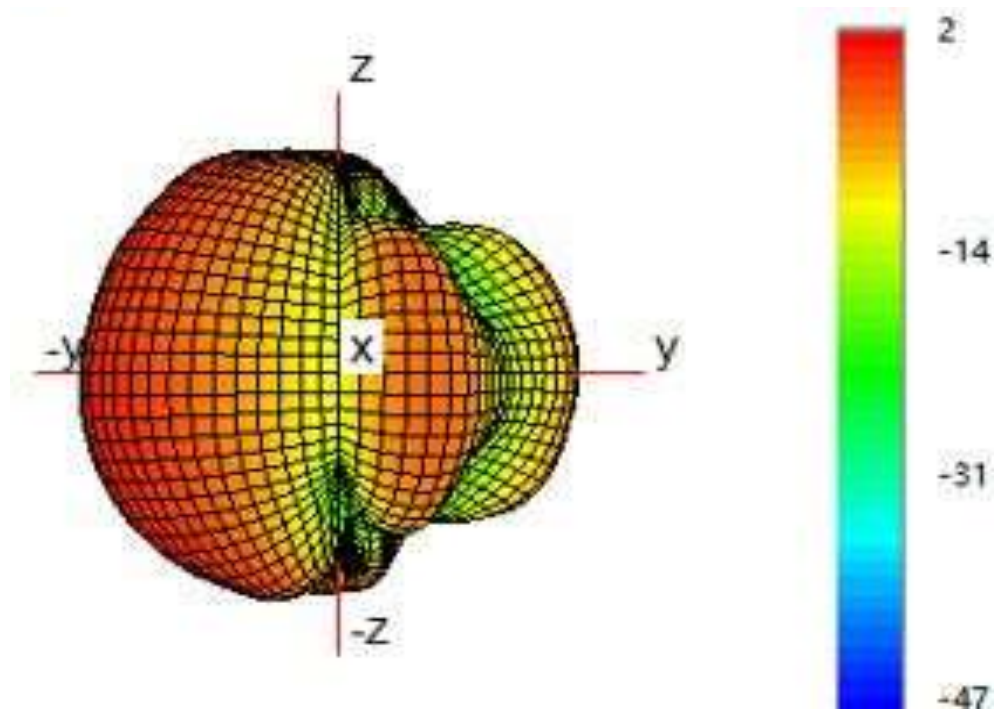
Fig.2 FAR-field Chamber



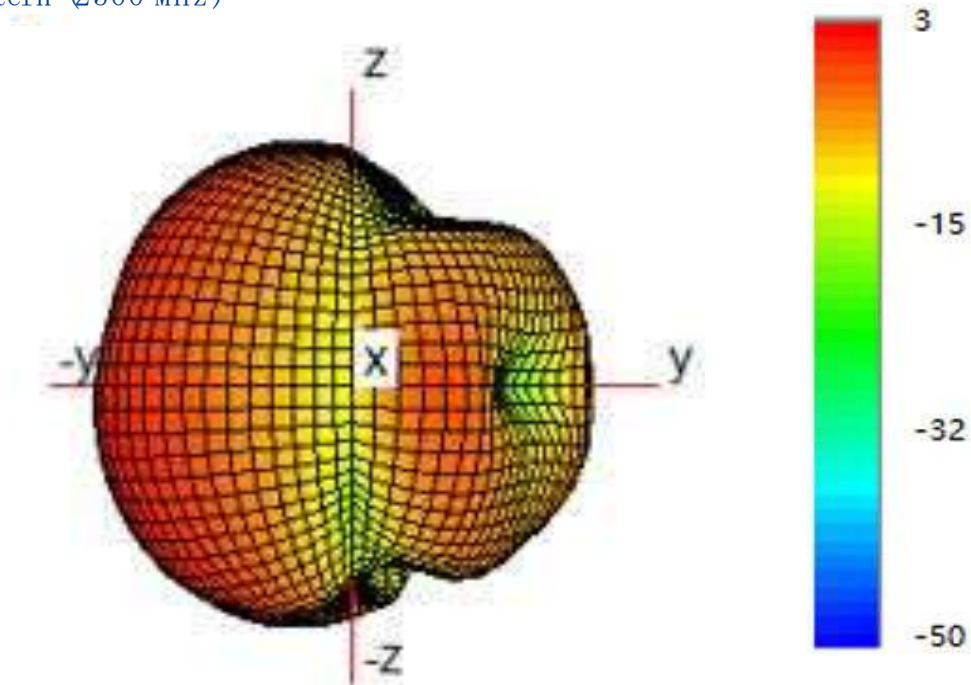
3D Gain Pattern (2400 MHz)



3D Gain Pattern (2450 MHz)



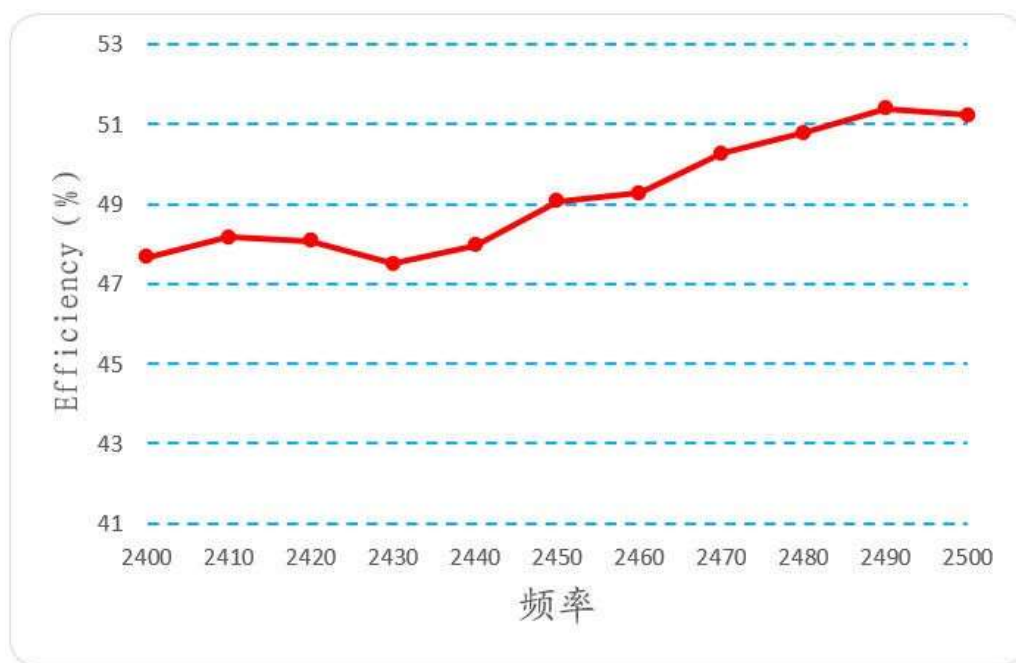
3D Gain Pattern (2500 MHz)



Gain (dB)



Efficiency (%)



Item	Condition	Specification
Thermal shock	1. 30±3 minutes at -40°C±5°C, 2. Convert to +105°C (5 minutes) 3. 30±3 minutes at +105°C±5°C, 4. Convert to -40°C (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	1. Humidity: 85% R.H. 2. Temperature: 85±5°C 3. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	No apparent damage Fulfill the electrical spec. after test.	1. Temperature: 150°C±5°C 2. Time: 1000 hours.
Low temperature resistance	1. Temperature: -40°C±5°C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : 260±5°C 2. Bathing time: 10±1 seconds	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5°C for 3±1 seconds.	No apparent damage

## (2) ) Storage Condition

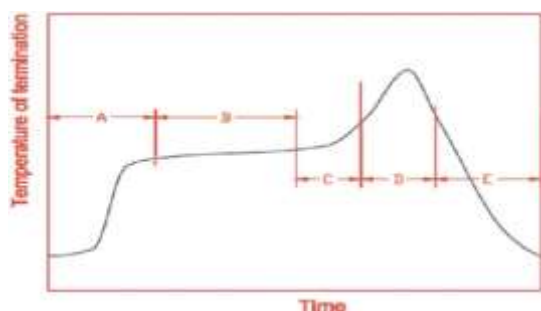
(a) At warehouse: The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH. The product should be used within 1 year from the time of delivery.

(b) On board: The temperature should be within -40~85°C and humidity should be less than 85% RH.

## (3) Operating Temperature Range

Operating temperature range : -40°C to +85°C.

## Recommended Reflow Solder curve



A	1 <sup>st</sup> rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 <sup>nd</sup> rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C	50s~60s
		if 230°C	40s~50s
		if 240°C	30s~40s
		if 250°C	20s~40s
		if 260°C	20s~40s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

\*reference: J-STD-020C



## (1) ) Soldering Gun Procedure

Note the follows, in case of using solder gun for replacement.

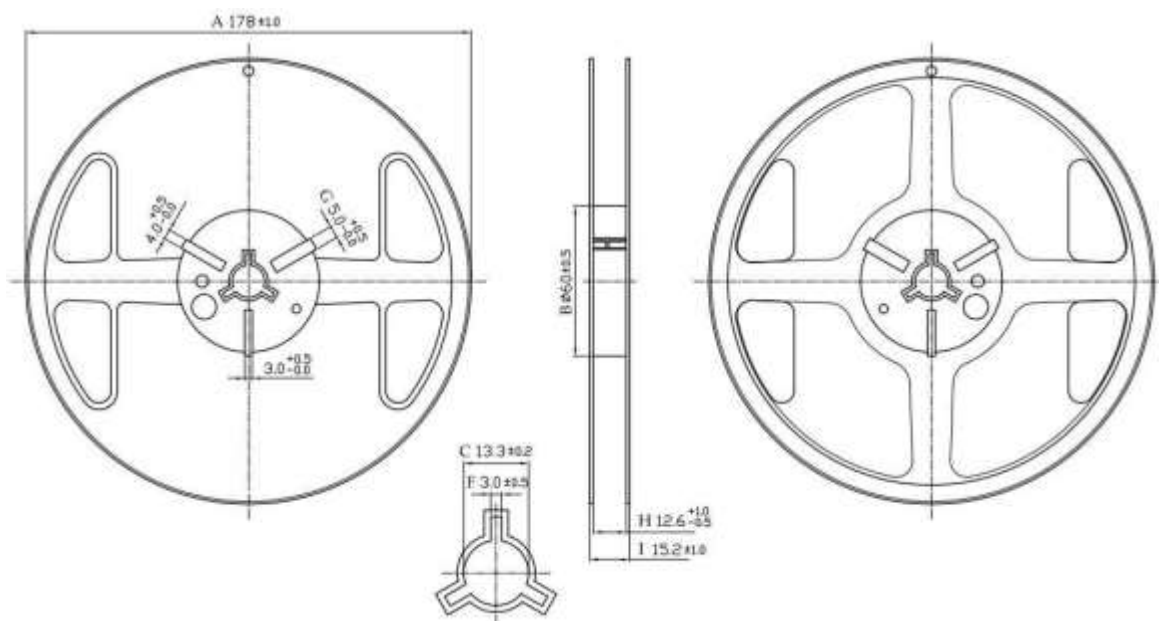
- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- (b) The soldering gun tip shall not touch this product directly.

## (2) Soldering Volume

Note that excess of soldering volume will easily get crack the body of this product.

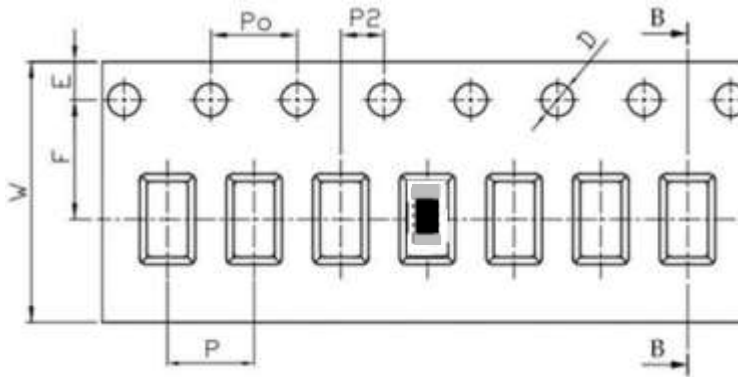
### ■ PACKAGING STYLE

#### □ REEL DIMENSIONS





□ TAPE DIMENSIONS



Feature	Specifications	Tolerances
W	8.00	±0.30
P	4.00	±0.10
E	1.75	±0.10
F	3.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
P0	4.00	±0.10
10P0	40.00	±0.20

Typing Quantity: 5000 pieces per 7" reel

## Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
TS3216E245D05	3216	0.0089g	Tape&Reel	5000pcs	RoHS compliant

## Revision history

Date	Revision	Description of changes
2018-11-5	1.0	First Version
2022-12-9	1.1	Update the package information

The contents of this data sheet are subject to change without notice.  
Please confirm the specifications and delivery conditions when placing your order.

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