

# SMD CERAMIC ANTENNA

## Data Sheet

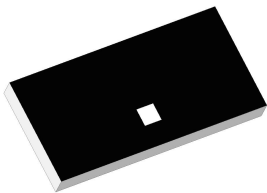
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# KH-5025-52-A

For 6000-8000MHz  
4.9x2.4mm [EIA5025]

Feature

- Light weight, compact
- Wide bandwidth, low cost
- Built-in antenna with high gain
- Operating Temp. : -40°C~+85°C



Application

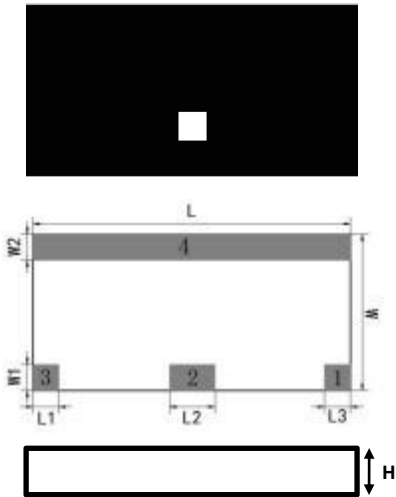
- Automotive sensors
- Precision surveying
- Smart home and entertainment systems
- Centimeter Level Positioning

Electrical Characteristics per line(TA=25°C)

| Parameter        | Specification | Units |
|------------------|---------------|-------|
| Frequency Band   | 6000~8500     | MHz   |
| Polarization     | Linear        |       |
| *Peak Gain       | 4.09          | dBi   |
| *Peak Efficiency | 79.9%         | %     |
| Impedance        | 50            |       |

\*Test condition: Test board size 50\*40 mm;  
Matching circuit: Pi matching circuit will be required

Product Dimension



|    |           |
|----|-----------|
| L  | 4.90±0.30 |
| W  | 2.40±0.30 |
| W1 | 0.40±0.15 |
| W2 | 0.40±0.15 |
| L1 | 0.40±0.15 |
| L2 | 0.70±0.15 |
| L3 | 0.40±0.15 |

| Layout |                  |
|--------|------------------|
| Pin    | Function         |
| 1      | NC               |
| 2      | Connection point |
| 3      | NC               |
| 4      | NC               |

Typical Characteristics

Fig.1 VSWR

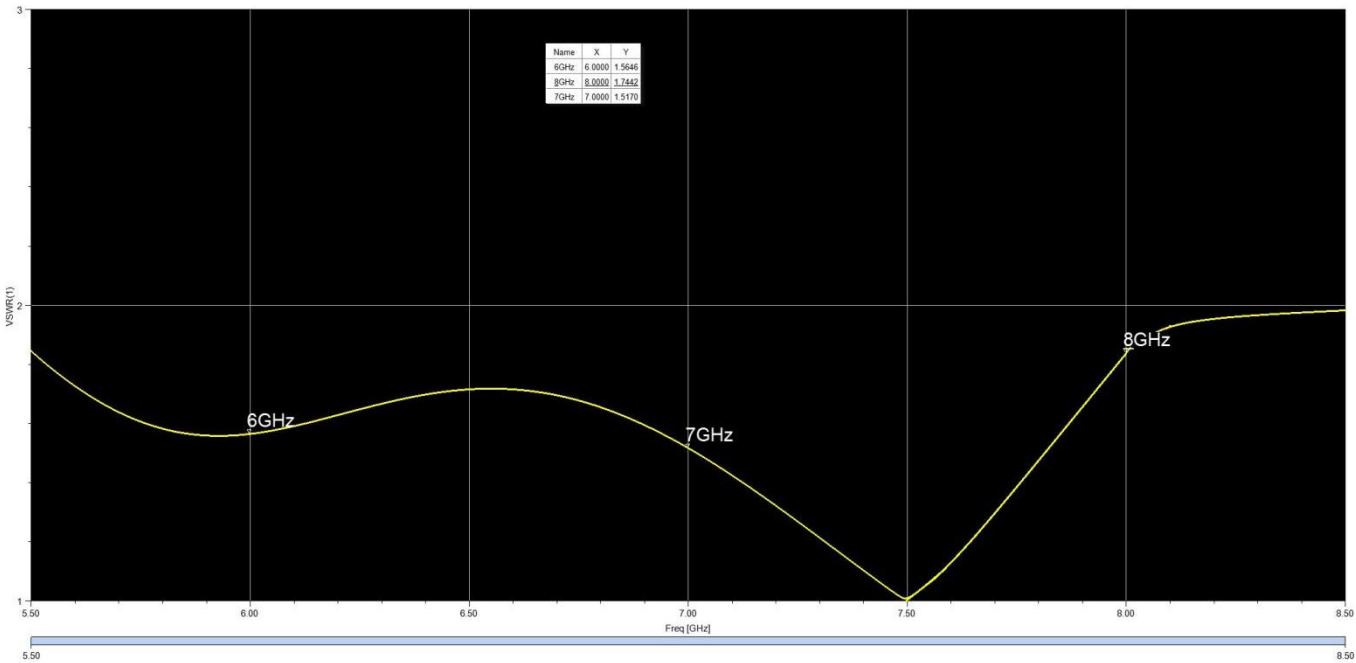
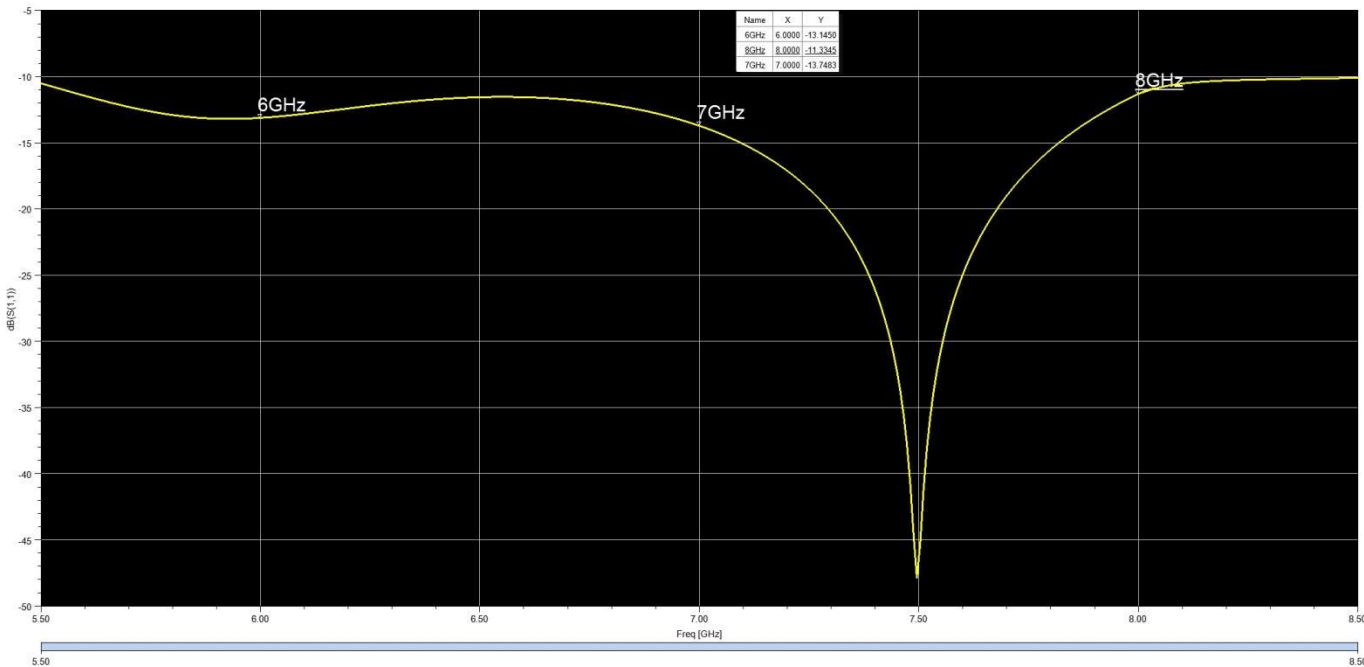


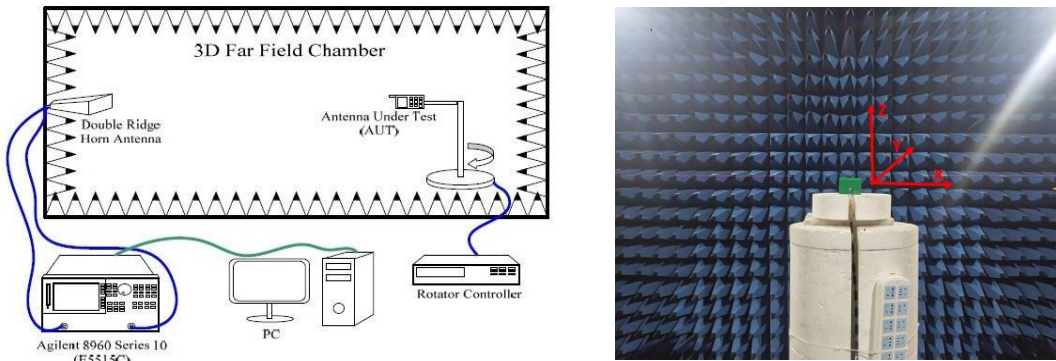
Fig.2 Return Loss



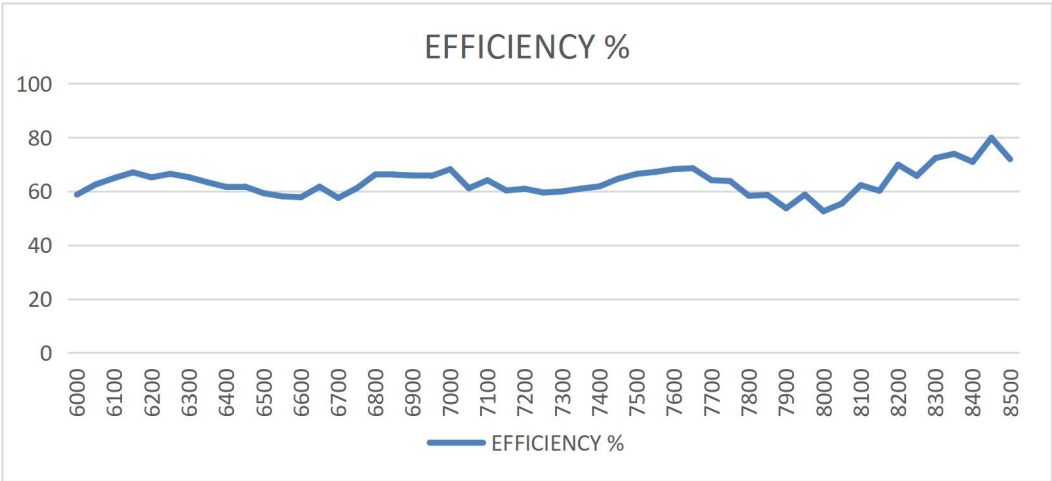
Radiation Pattern

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

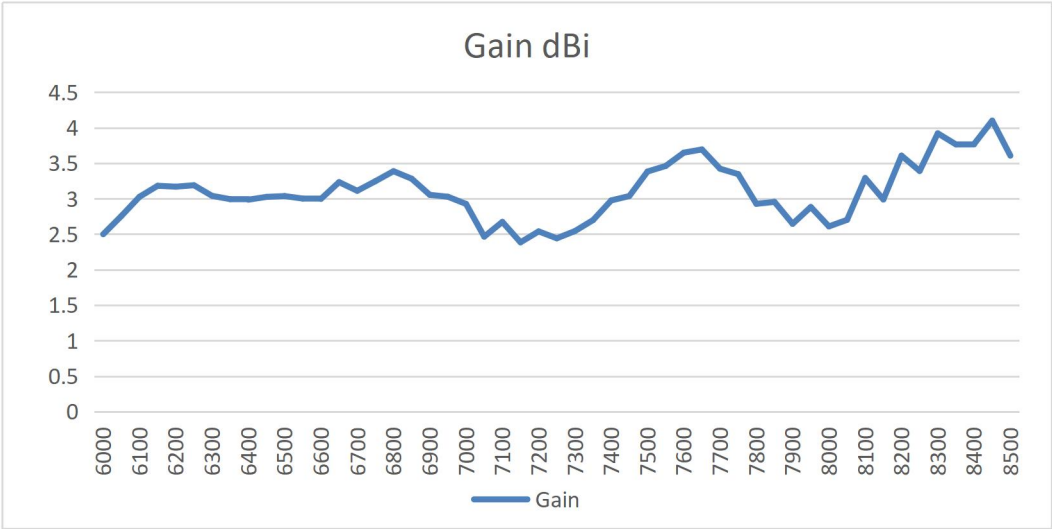
Fig.3 FAR-field Chamber



EFFICIENCY

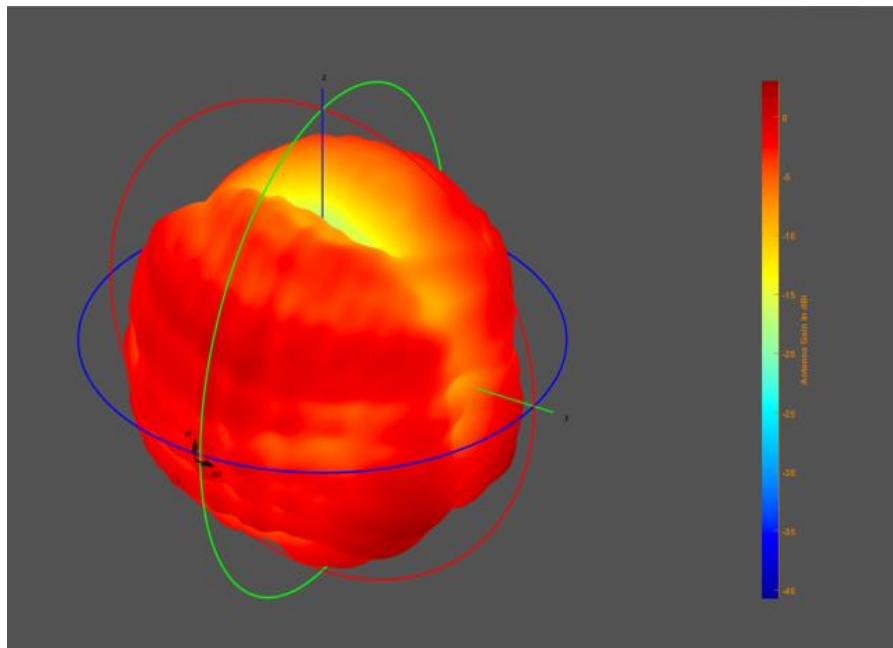


Gain



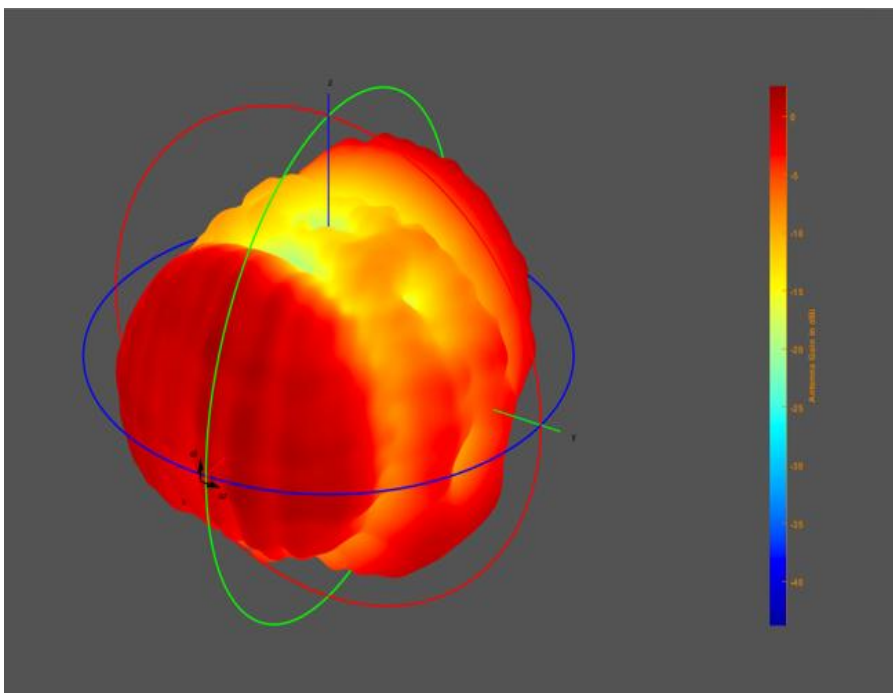
3D Gain Pattern

(6500 MHz)



3D Gain Pattern

(8000 MHz)





| Item                        | Condition                                                                                                                                                               | Specification                                                  |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Thermal shock               | 1. 30±3 minutes at -40°C±5°C,<br>2. Convert to +105°C (5minutes)<br>3. 30±3 minutes at +105°C±5°C,<br>4. Convert to -40°C (5 minutes)<br>5. Total 100 continuous cycles | No apparent damage<br>Fulfill the electrical spec. after test. |
| Humidity resistance         | 1. Humidity:85% R.H.<br>2. Temperature:85±5°C<br>3. Time:1000 hours.                                                                                                    | No apparent damage<br>Fulfill the electrical spec. after test. |
| High temperature resistance | No apparent damage<br>Fulfill the electrical spec. after test.                                                                                                          | 1. Temperature: 150°C±5°C<br>2. Time: 1000 hours.              |
| Low temperature resistance  | 1. Temperature: -40°C±5°C<br>2. Time: 1000 hours.                                                                                                                       | No apparent damage<br>Fulfill the electrical spec. after test. |
| Soldering heat resistance   | 1. Solder bath temperature : 260±5°C<br>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

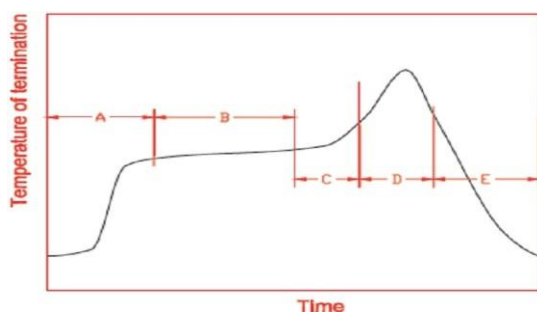
(a) At warehouse: The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH. The product should be used within 1 year from the time of elivery

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

## (3) Operating Temperature Range

-40°C to +85°C。 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

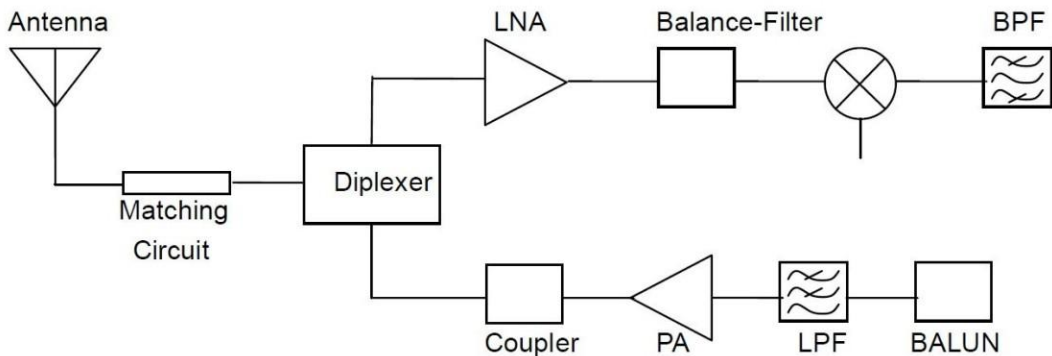
Note the follows, in case of using solder gun for replacement.

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

(2) Soldering Volume

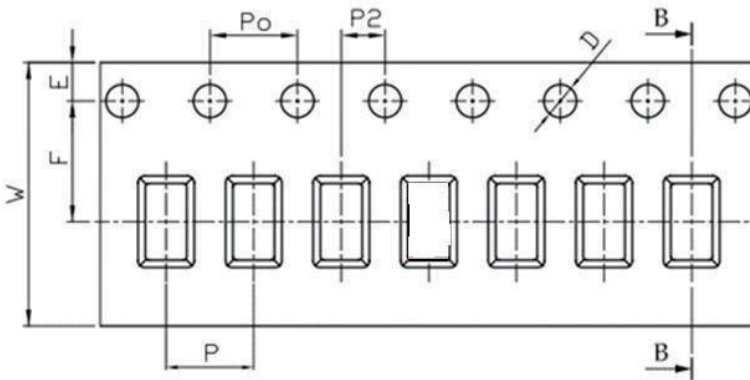
Note that excess of soldering volume will easily get crack the body of this product.

Application Guide



Package Information

5025 Typing Quantity: 2000 pieces per 13 reel



| Feature | Specifications | Tolerances |
|---------|----------------|------------|
| W       | 12.00          | ±0.30      |
| P       | 4.00           | ±0.10      |
| E       | 1.75           | ±0.10      |
| F       | 5.50           | ±0.10      |
| P2      | 2.00           | ±0.10      |
| D       | 1.50           | ±0.10      |
| Po      | 4.00           | ±0.10      |
| 10Po    | 40.00          | ±0.20      |



Order Information

| Device       | Package | Net Weighte | Carrier   | Quantity | HSF Status     |
|--------------|---------|-------------|-----------|----------|----------------|
| KH-5025-52-A | 5025    | 0.050g      | Tape&Reel | 2000pcs  | RoHS compliant |

Revision history

| Date      | Revision | Description of changes |
|-----------|----------|------------------------|
| 2022-11-5 | 1.0      | First Version          |