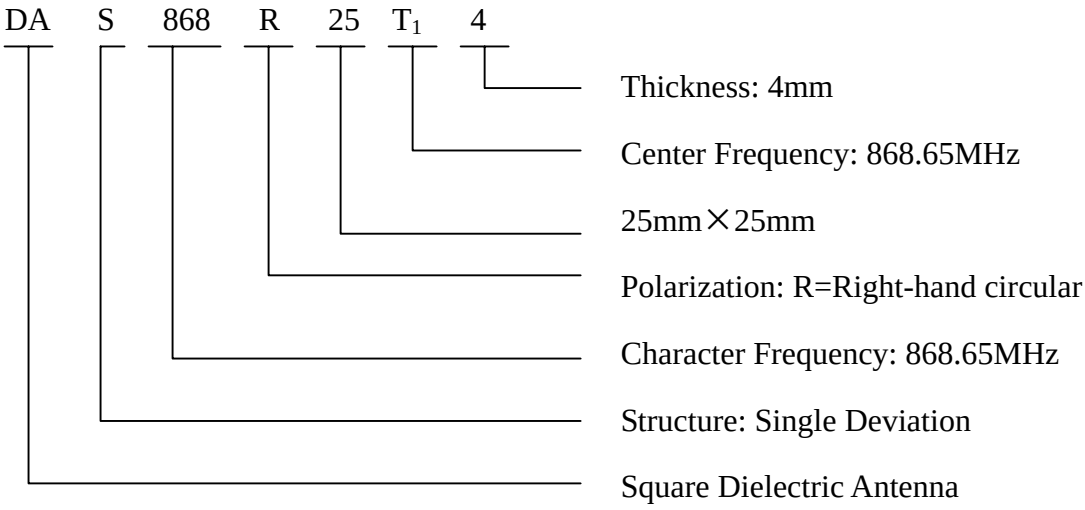
# MICROWAVE DIELECTRIC ANTENNA SPECIFICATION

## Part Number : DAS868R25T$_1$4

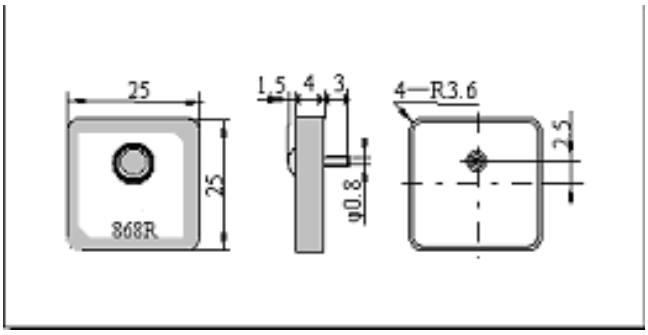
### 1. INTRODUCTION

"SBtron" microwave dielectric antenna elements and its series are designed to be used for GPS and WLAN. The patch antenna with compact size incorporates a rectangular micro-strip design for GPS C/A right-hand circular polarization wave reception, featuring low RL, low Axial Ratio but high gain, etc.

### 2. Part Number




### 3. Dimension（Unit：mm）



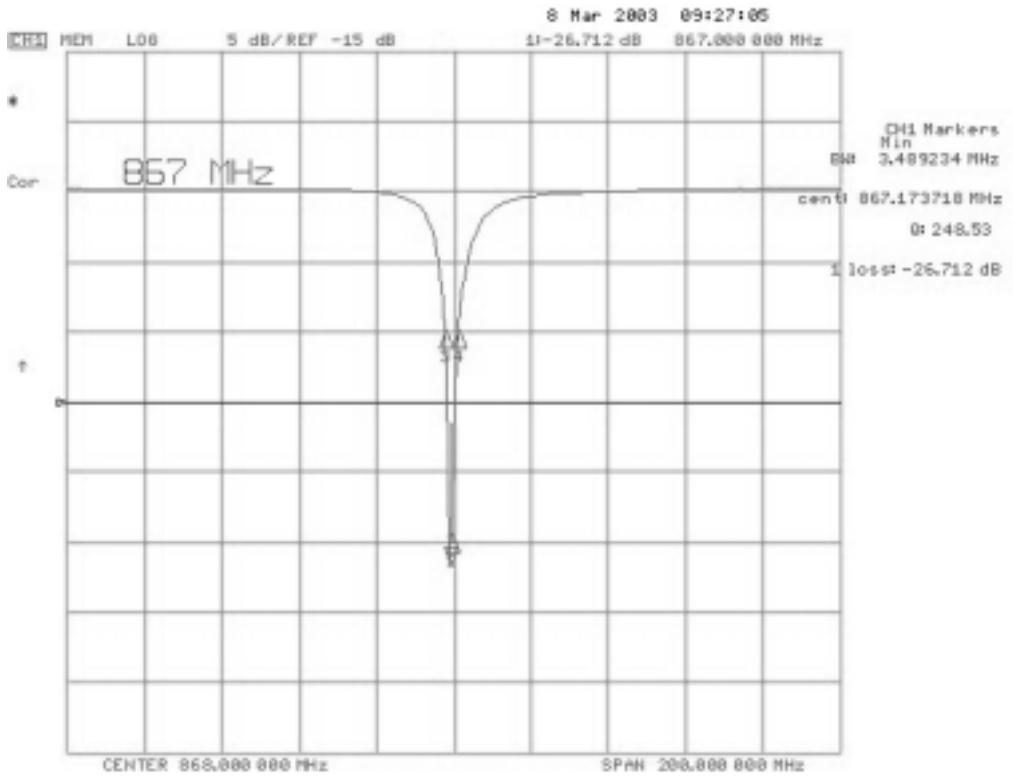

### 4. Structure and Material

| No. | Description | Structure and material |
|---|---|---|
| 4.1 | Antenna Substrate | Dielectric Ceramics |
| 4.2 | Pin | Copper, lead and tin plated |
| 4.3 | Electrode | Ag Plated |
| 4.4 | Ground Base | Ag Plated |

## 5. Electrical Characteristics

| No. | Item | Specifications | Post Environmental Tolerance |
|---|---|---|---|
| 5.1 | Range of Receiving Frequency (MHz) | 868.65 | ±2.5MHz |
| 5.2 | Center Frequency (MHz)<br>(with 30mm Square GND Plane) | 868.65 | ±2.0MHz |
| 5.3 | Band Width (MHz) | ±1.5min | ±0.5MHz |
| 5.4 | V.S.W.R (in BW) | ±1.5max | ±0.5 |
| 5.5 | Gain (Zenith) (dBi tye) | 1.0min | ±0.5 |
| 5.6 | Axial Ratio (0~90 ° ) | 3.0dB max | ±0.2 |
| 5.7 | Polarization | Right-Handed Circular | — |
| 5.8 | Impedance (ohm) | 50 ±5.0 | — |
| 5.9 | Frequency Temperature Coefficient<br>(PPM/deg. ℃) | 20max | — |

## 6. Characteristic curve




7. Reliability: MTBF=1×10$^{-6}$/pc.hr

Temperature: 40±5℃

Load: DC=5V±0.5 V

Quantity: 2000pcs

Sustained Time: 480h

8. Environmental specifications

Post Environmental Tolerance (Refer to the table 2 )

Temperature range 25±3℃

Relative Humidity range 55~75%RH

Operating Temperature range -40℃~+85℃

Storage Temperature range -40℃~+100℃

8.1 Moisture Proof

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the temperature 40±2℃and the relative humidity 90~95% RH for 96 hours and 1~2 hours recovery time under normal condition.

8.2 Vibration Resist

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after applied to the vibration of 10 to 55Hz with amplitude of 1.5mm for 2 hours each in X , Y and Z directions.

8.3 Drop Shock

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after dropping onto the hard wooden board from the height of 30cm for 3 times each facet of the 3 dimensions of the device.

8.4 High Temperature Endurance

The device should satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to temperature 80±5℃for 24±2 hours and 1~2 hours recovery time under normal temperature.

8.5 Low Temperature Endurance

The device should also satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the temperature -40℃±5℃for 24±2 hours and to 2 hours recovery time under normal temperature.

8.6 Temperature Cycle Test

The device should also satisfy the electrical characteristics specified in paragraph 5.1~5.6 after exposed to the low temperature -25℃ and high temperature +85℃ for 30±2 min each by 5 cycles and 1 to 2 hours recovery time under normal temperature.