MICROWAVE DIELECTRIC ANTENNA

1. INTRODUCTION

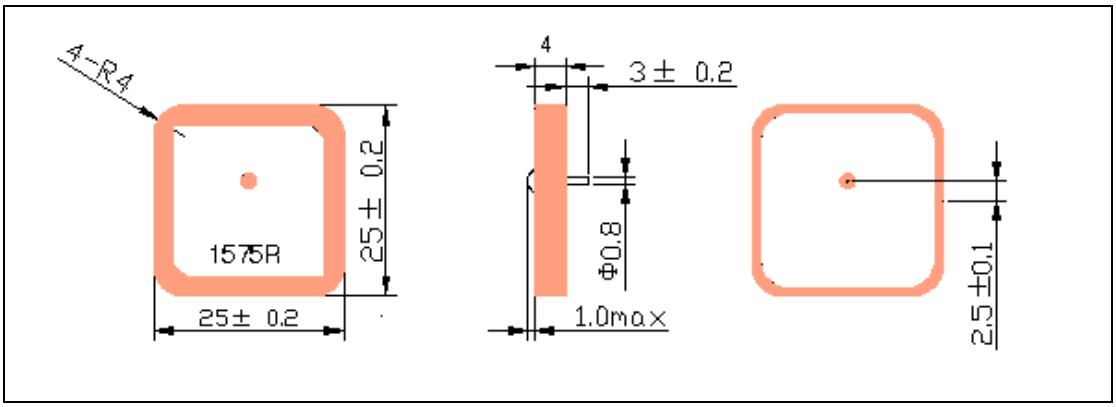
"SBtron" microwave dielectric antenna elements and its series are designed to be used for GPS and WLAN. The patch antenna with compact size incorporates a rectangular micro-strip design for GPS C/A right-hand circular polarization wave reception, featuring low RL, low Axial Ratio but high gain, etc.

2. Part Number

DA S 1575 R 25 D$_1$ 4

- 4 — Thickness: 4mm
- D$_1$ — Center Frequency: 1580.00 MHz
- 25 — Size: 25(L)×25(W)mm
- R — Polarization R : Right Hand Circular
- 1575 — Character Frequency :1575.00 MHz
- S — Structure : Single Deviation
- DA — Square Dielectric Antenna

3. Dimension（Unit：mm）



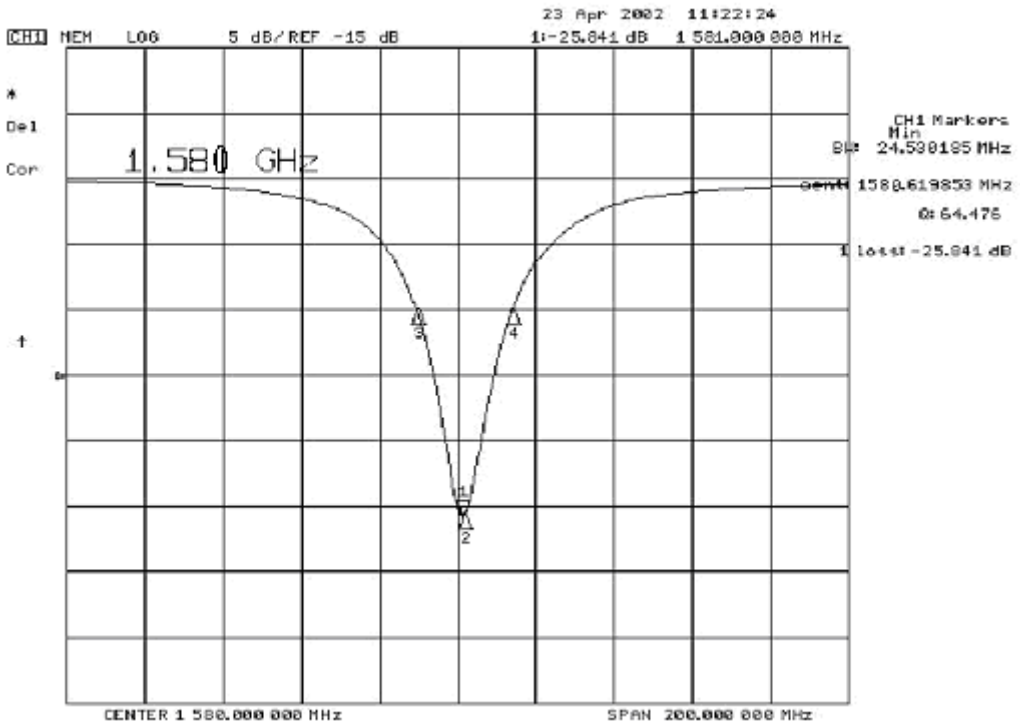
4. Structure and Material

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

Type	DAS1575R25D14
Center Frequency (At 70x70mm GND PLANE)	1580MHz+/-3MHz
Return Loss (At Center Frequency)	Min value＜-20d B
Band With(at-10dB return loss)	20MHz min
Gain @Zenith	+4.5dBi typical
Axial Ratio	3.0 dB max
VSWR	1.5 dB max
Impedance	50 Ω
Operating Temperature	-40℃~+85℃

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 characteractics 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.