

**ANTENNA PRODUCTS**

**DATA SHEET**


**2012 Ceramic Chip Antenna  
for Bluetooth/WLAN Application**

Feb, 2007 V1

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## 2012 Ceramic Chip Antenna for Bluetooth/WLAN Application

### Quick Reference Data

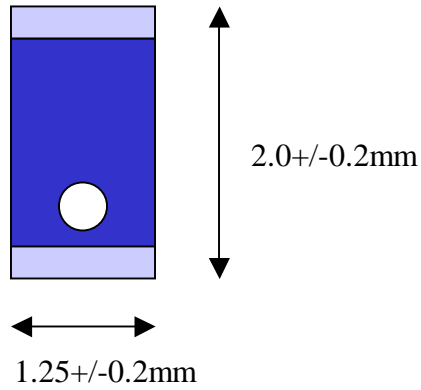
Centre Frequency	2.45 GHz* <sup>1</sup>	
Bandwidth	at least 70 MHz* <sup>2</sup>	
VSWR	2.5 (Max.)* <sup>2</sup>	
Polarization	Linear	
Azimuth Beamwidth	Omni-directional	
Peak Gain	4.0 dBi* <sup>2</sup>	
Impedance	50Ω	
Operating Temperature	-55~125 °C	
Termination	Ni / Sn (Environmentally-Friendly Leadless)	
Resistance to soldering heats	260°C , 10sec.	
Maximum Power	1W	

<sup>1</sup> All the technical data and information contained herein are subject to change without prior notice

<sup>2</sup> Testing under evaluation board of page 4

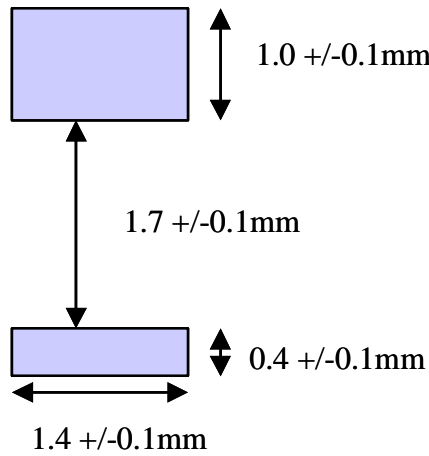
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**1. Mechanical Data (2.0 x 1.25 x 1.1 mm)**



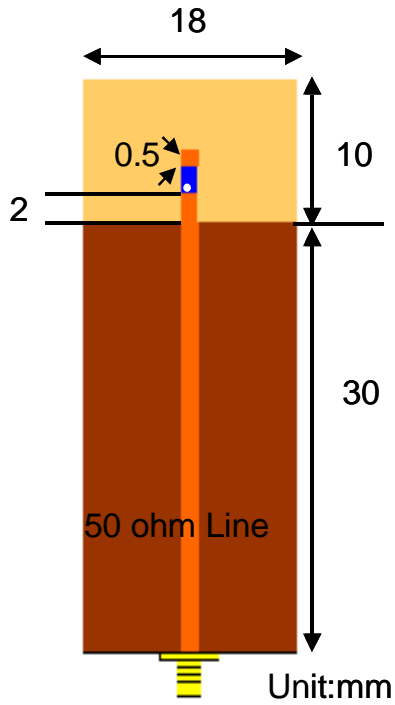
**Unit: mm**

**2. Layout of Soldering Pads**



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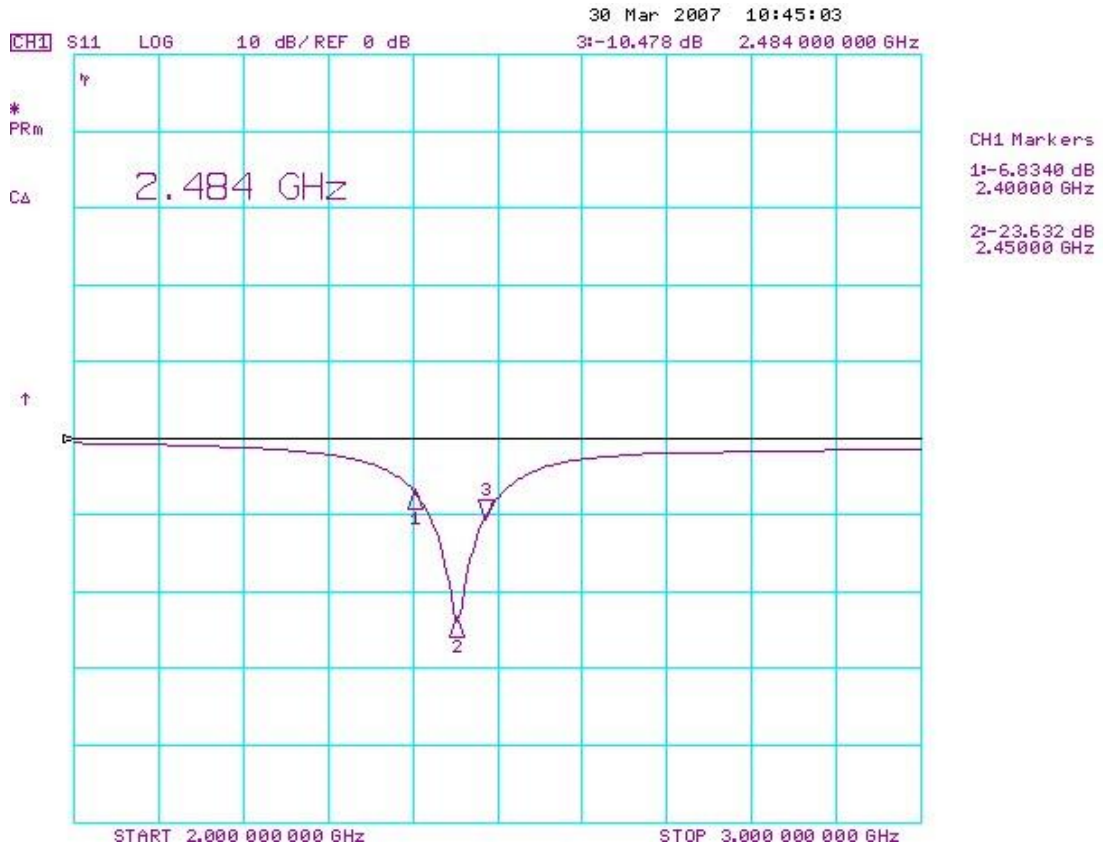
### 3. Dimension and Outlook of Evaluation Board



Unit: mm

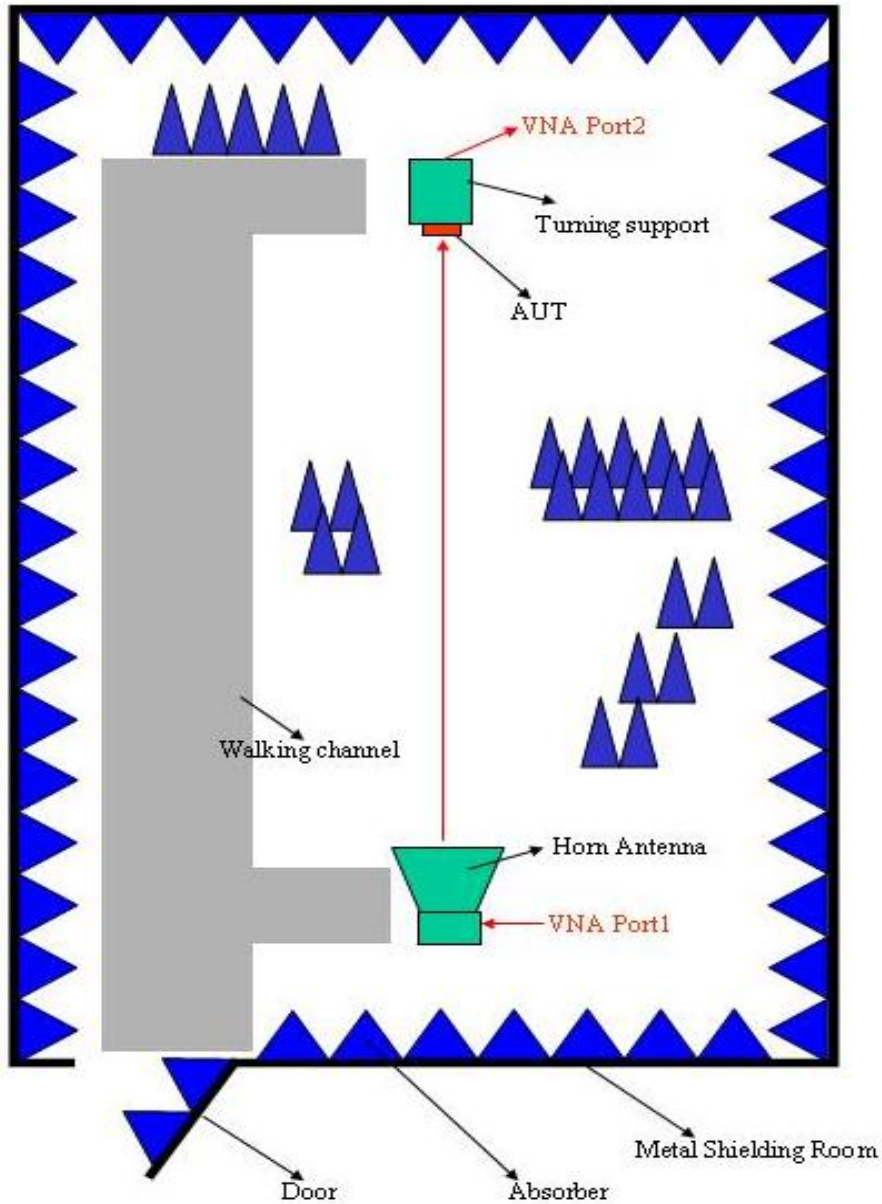
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#### 4. Measurement of S-parameter



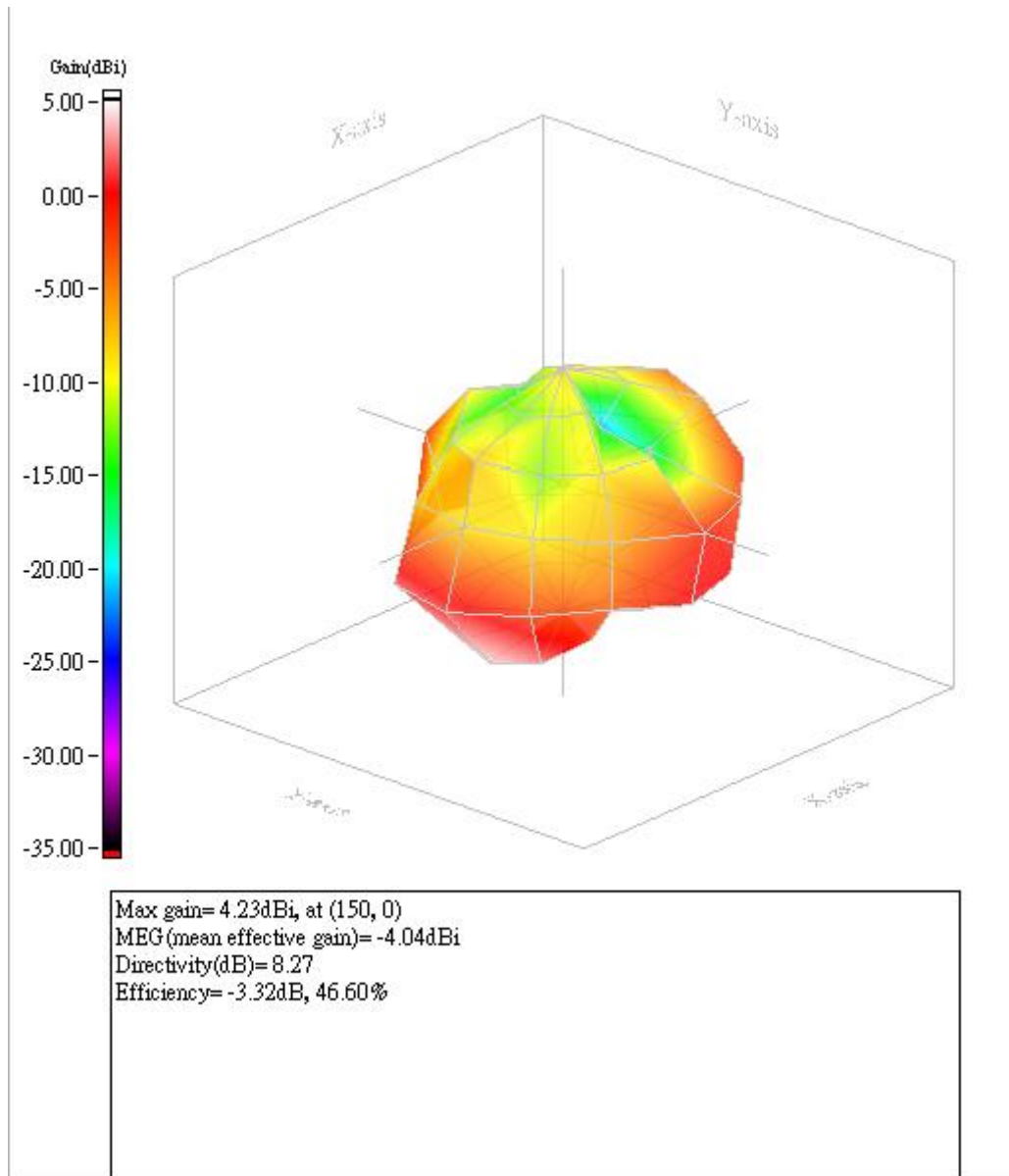
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**5.The Environment of Antenna Radiation Pattern**  
**Anechoic Chamber Dimension=8(m) × 4(m) × 4(m)**



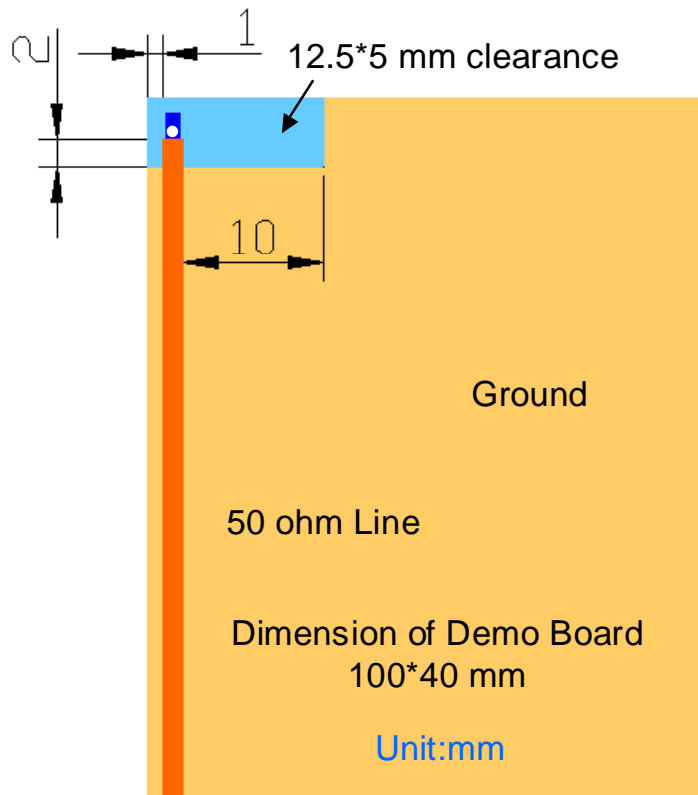
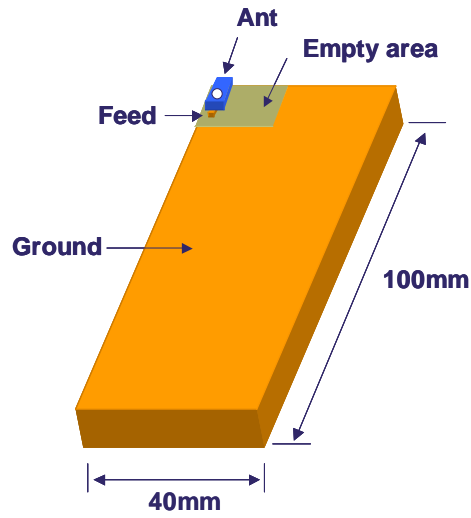
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### 6. 3D Radiation Pattern ( 40x18 mm demo board)



### 7. Layout Recommendation in Application

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IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.4		Mounting	The antenna can be mounted on printed-circuit boards or ceramic substrates by applying wave soldering, reflow soldering (including vapour phase soldering) or conductive adhesive	No visible damage
4.5		Visual inspection and dimension check	Any applicable method using $\times 10$ magnification	In accordance with specification (chip off 4mm)
4.6.1		Antenna	Central Frequency at 20 °C	Standard test board in page 4
4.8		Adhesion	A force of 3 N applied for 10 s to the line joining the terminations and in a plane parallel to the substrate	No visible damage
4.9		Bond strength of plating on end face	Mounted in accordance with CECC 32 100, paragraph 4.4	No visible damage
			Conditions: bending 0.5 mm at a rate of 1mm/s, radius jig. 340 mm, 2mm warp on FR4 board of 90 mm length	No visible damage
4.10	20(Tb)	Resistance to soldering heat	260 $\pm$ 5 °C for 10 $\pm$ 0.5 s in a static solder bath	The terminations shall be well tinned after recovery and Central Freq. Change $\pm$ 6%
		Resistance to leaching	260 $\pm$ 5 °C for 30 $\pm$ 1 s in a static solder bath	Using visual enlargement of $\times 10$ , dissolution of the termination shall not exceed 10%

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IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.11	20(Ta)	Solderability	Zero hour test, and test after storage (20 to 24 months) in original atmosphere; un-mounted chips completely immersed for $2 \pm 0.5$ s in $235 \pm 5^\circ\text{C}$ .	The termination must be well tinned, at least 75% is well tinned at termination
4.12	4(Na)	Rapid change of temperature	$-25^\circ\text{C}$ (30 minutes) to $+85^\circ\text{C}$ (30 minutes); 100 cycles	No visible damage Central Freq. Change $\pm 6\%$
4.14	3(Ca)	Damp heat	$500 \pm 12$ hours at $60^\circ\text{C}$ ; 90 to 95 % RH	No visible damage 2 hours recovery Central Freq. Change $\pm 6\%$
4.15		Endurance	$500 \pm 12$ hours at $85^\circ\text{C}$ ;	No visible damage 2 hours recovery Central Freq. Change $\pm 6\%$

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## Ordering Information

The antennas may be ordered by using the Yageo ordering code. These code numbers can be determined by the following rules:

### CAN43 11 7 14 XX 245 4K

#### Family Code

**CAN 43** = Yageo Part No. for Antenna

#### Packing Type Code

**11** = 180 mm/ 7" reel , blister taping

#### Materials Code

**7** = High Frequency Material

#### Size Code

**11** = 3.2 \* 2.5

**12** = 3.2 \* 1.6

**13** = 2.5 \* 2.0

**14** = 2.0 \* 1.2

**15** = 1.6 \* 0.8

#### Antenna type

**00** = normal type

02 = Type 2

03 = Type 3

04 = Type 4

05 = Type 5

06 = Type 6

07 = Type 7

08 = Type 8

09 = Type 9

#### Working Frequency

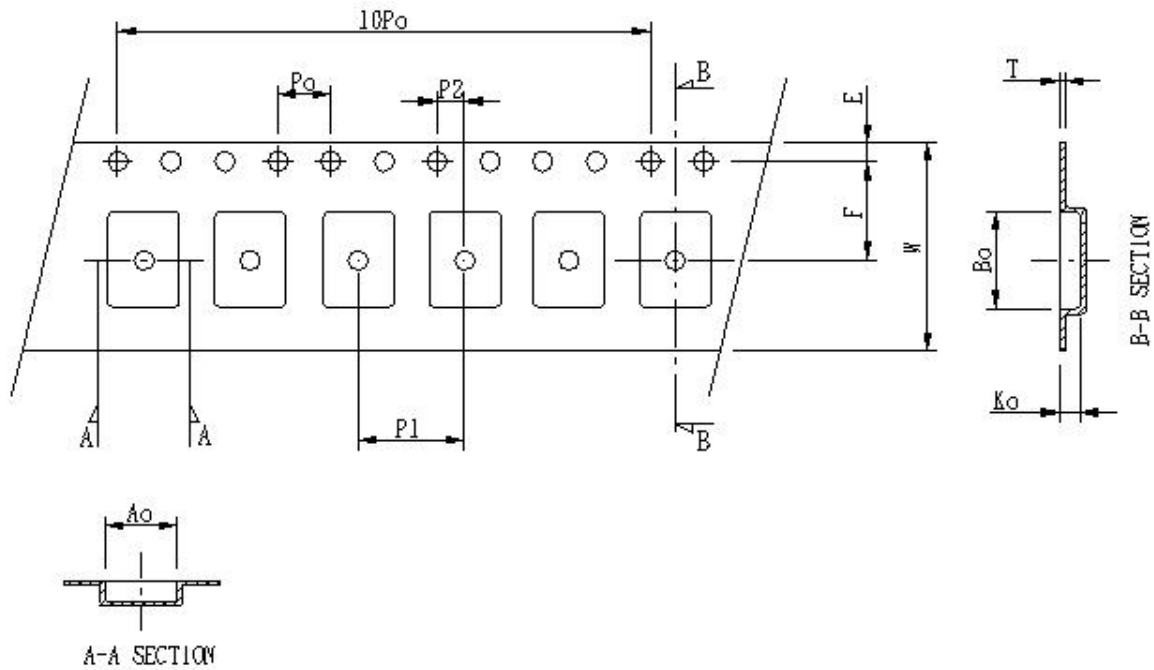
**245** = 2.45 GHz

#### Packing Type Code

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4K = 4000 pcs for taping per reel

## Taping Blister Tape



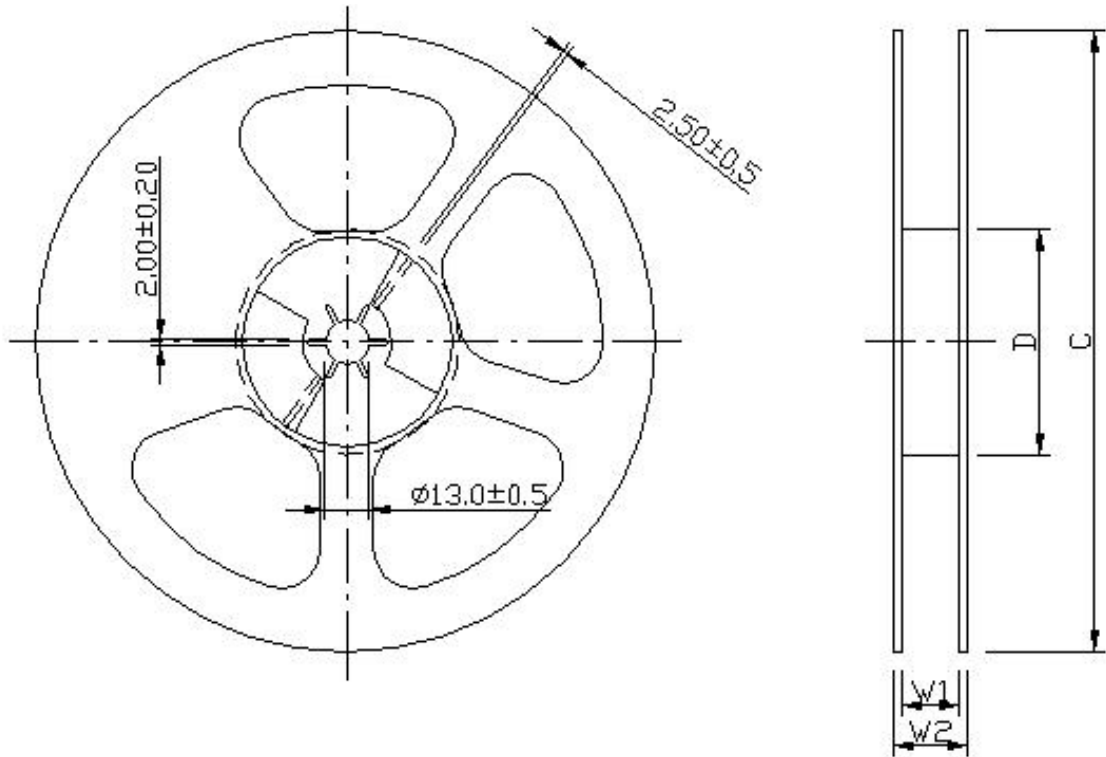
### DIMENSION:

Serial no	Checking note	Index	Spec(mm)
1	Sprocket hole	Do	1.50±0.10
2	Pocket hole	D1	≥1
3	Distance sprocket hole/sprocket hole	Po	4.0±0.10
4	Distance pocket/pocket	P1	4.0±0.10
5	Distance sprocket hole/pocket	P2	2.0±0.10
6	Tape width	W	8.1±0.20
7	Distance sprocket hole/outside	E	1.75±0.10
8	Distance sprocket hole/pocket	F	3.5±0.05
9	Pocket length nominal clearance	Ao	1.42±0.10
10	Pocket length nominal clearance	Bo	2.24±0.10
11	Pocket depth minimum clearance	Ko	1.2±0.10
12	Thickness of tape	T	0.22±0.05
13	10x sprocket hole pitch	10Po	40.0±0.20

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## 7"(180mm) Reel Specifications



Product size code	Units per Reel	Tape Width (mm)	C (mm)	D (mm)	W <sub>1</sub> (mm)	W <sub>2</sub> (mm)
Antenna	4000	8	180.0±1.0	62±1.5	8.4+/-0.15	14.4 max

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**Revision Control:**

Revision	Date	Content	Remark
V1	Feb, 2007	New Issued	

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