

**MULTILAYER CERAMIC ANTENNA (LINEAR POLARIZATION MODE)**  
**1.88 GHz ~2.1 GHz**  
**Product Specification<sup>1</sup> (Preliminary)**

**QUICK REFERENCE DATA**

Dimension	8.8* 6.8 * 0.9 mm
Working Frequency	1.88~2.1 GHz
Gain	2 dBi Max
VSWR	2 max
Polarization	Linear
Azimuth	Omni-directional
Impedance	50Ω
Operating Temperature	-55~125 °C
Termination	Ni/Sn (Environmentally-Friendly Leadless)
Resistance to soldering heat	260°C, 10 sec.



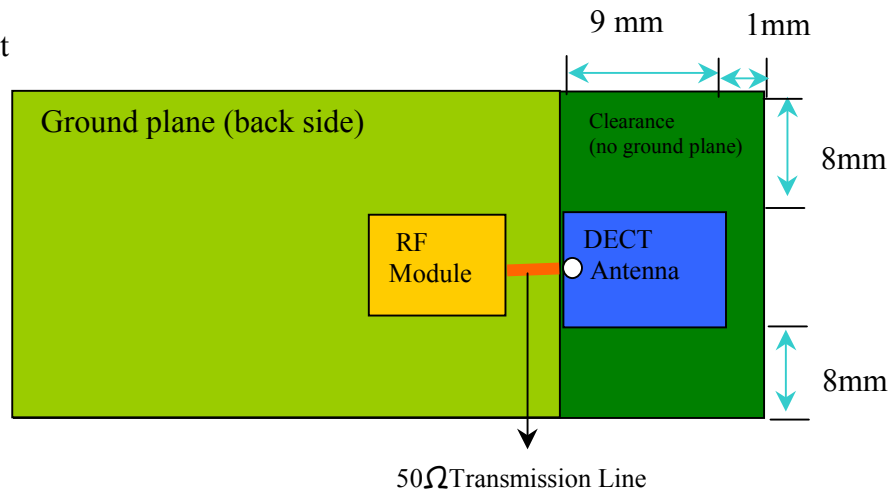
*Special Environmental Concerns- Green Products Design: The foil making process is using environmentally friendly aqueous solvent technology. Termination is lead free and packing materials can be re-cycled*

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

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			Dec. 13, 01 Jan. 7, 02			
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## APPLICATION

Suggested Layout



## DIMENSIONAL DATA

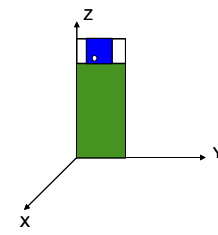
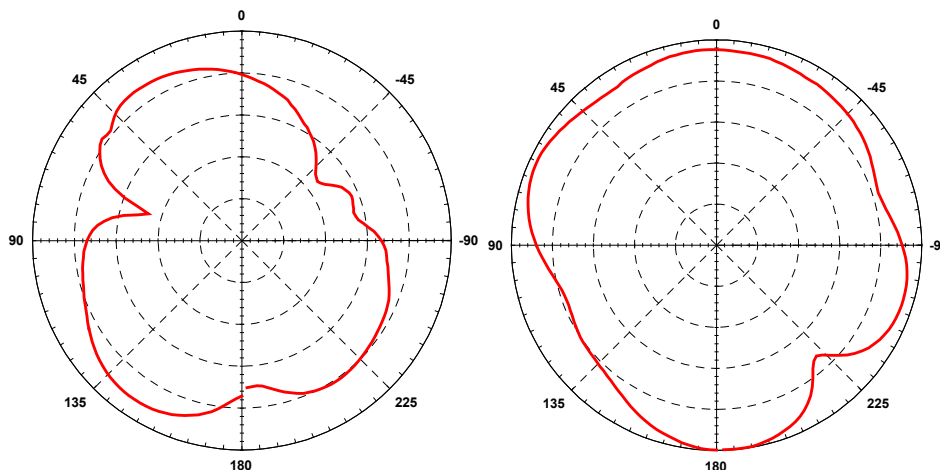
Figure	Dimension	Port	
	L	8.8±0.2mm	-
	W	6.8±0.2mm	-
	T	0.9±0.2mm	-
	F	4.3±0.2mm	Feed termination
	C	0.5±0.3mm	-
	S1	0.5±0.3mm	Solder termination
	S2	1.3±0.2mm	Solder termination
		4.3±0.2mm	

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## SOLDER LAND PATTERN

Figure	Dimensions (mm)	Remark																						
	<table border="1"> <tr> <td>L</td> <td>10.00 ± 0.10</td> </tr> <tr> <td>W</td> <td>7.00 ± 0.10</td> </tr> <tr> <td>F</td> <td>1.40 ± 0.10</td> </tr> <tr> <td>F*</td> <td>1.40 ± 0.10</td> </tr> <tr> <td>C</td> <td>0.90 ± 0.10</td> </tr> <tr> <td>S1</td> <td>1.40 ± 0.10</td> </tr> <tr> <td>S2</td> <td>1.40 ± 0.10</td> </tr> </table>	L	10.00 ± 0.10	W	7.00 ± 0.10	F	1.40 ± 0.10	F*	1.40 ± 0.10	C	0.90 ± 0.10	S1	1.40 ± 0.10	S2	1.40 ± 0.10	<table border="1"> <tr> <td>F</td> <td>Feed Pad</td> </tr> <tr> <td>F*</td> <td>Feed Pad (Optional)</td> </tr> <tr> <td>S1</td> <td>NC Mount Pad Only</td> </tr> <tr> <td>S2</td> <td>NC Mount Pad Only</td> </tr> </table>	F	Feed Pad	F*	Feed Pad (Optional)	S1	NC Mount Pad Only	S2	NC Mount Pad Only
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### Radiation Pattern



E Plane (ZY Plane) & H Plane (XY Plane)

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**RELIABILITY DATA (Reference to IEC Specification)**

IEC 384-10/ CECC 32 100 CLAUSE	IEC 6006868-2 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 (no chip off 3 mm)
4.8		Adhesion	A force of 5 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, 1 mm warp on FR4 board of 90 mm length	No visible damage
4.10	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 $\pm 6\%$

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<b>IEC 384-10/ CECC 32 100 CLAUSE</b>	<b>IEC 6006868-2 TEST METHOD</b>	<b>TEST</b>	<b>PROCEDURE</b>	<b>REQUIREMENTS</b>
		Resistance to leaching	260 ± 5 °C for 30 ± 1 s in a static solder bath	Using visual enlargement of × 10, dissolution of the termination shall not exceed 10%
4.11	Ta	Solderability	Zero hour test, and test after storage (20 to 24 months) in original atmosphere; un-mounted chips completely immersed for 2 ± 0.5 s in 235 ± 5°C.	The termination must be well tinned, at least 75% is well tinned at termination
4.12	Na	Rapid change of temperature	-55 °C (30 minutes) to +125 °C (30 minutes); 100 cycles	No visible damage Central Freq. Change ± 6%
4.14	Ca	Damp heat	500 ± 12 hours at 60 °C; 90 to 95 % RH	No visible damage 2 hours recovery Central Freq. Change ± 6%
4.15		Endurance	500 ± 12 hours at 125 °C;	No visible damage 2 hours recovery Central Freq. Change ± 6%

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**ORDERING INFORMATION: 12NC Ordering Code**

The DECT antennas may be ordered by using the 12 NC ordering code. These code numbers can be determined by the following rules:

4311 1 12 00 188  
 F C MS T A

F. Family Code

**43** = Antenna

M. Materials Code

**1** = High Frequency Material

S. Size Code

**12** = 8.8\*6.8 \* 0.9 mm

T. Tolerance

**00** = 100 M Hz Band Width

A. Working Frequency

**188** = 1.88 GHz~2.1GHz

C. Packing Type Code

**11** = 180 mm/ 7" blister (1000pcs)

**13** = 330 mm/ 13"blister (4000pcs)

**Example: 12NC 4311 112 00188**  
 Product description: Antenna (43) by 1000 pcs (11) of High Frequency Material (1), Size 8.8\*6.8\*0.9 mm (12); Tolerance (00) of 100 MHz (VSWR<2) Working Frequency (188) = 1.88G~2.1GHz Hz

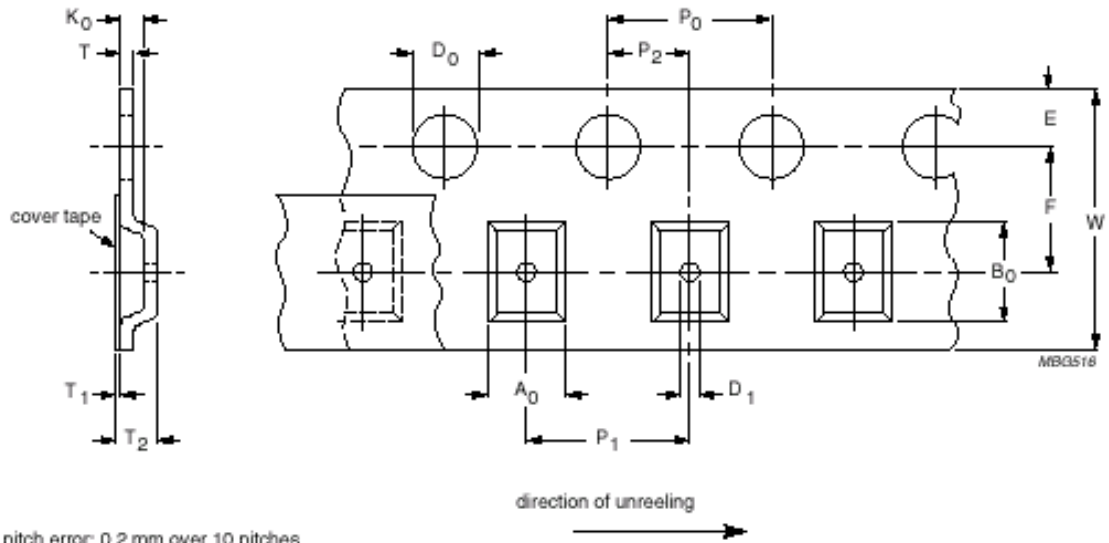
**ORDERING INFORMATION: Method II- by Clear Text Code**

The antennas may be ordered by using the 16-digit clear text ordering code. These code numbers can be determined by the following rules:

AN1880000788681K (Clear Text Code Example)						
AN	1880	00	07	8868	1	K
Product	Central Freq.	Bandwidth	Material	Size	Quantities	Packing
AN= Antenna	1880=1.80GHz ~ 2.1GHz	00= >100MHz	07=K7	8868=8.8*6.8*0.9 mm	1 = 1K	K=7" plastic F =13" plastic B = Bulk

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## Blister Tape Specifications



Cumulative pitch error: 0.2 mm over 10 pitches.

Cumulative tolerance over 10 holes:  $\pm 0.2$  mm.

$K_0$ : chosen so that the orientation of the component cannot change.

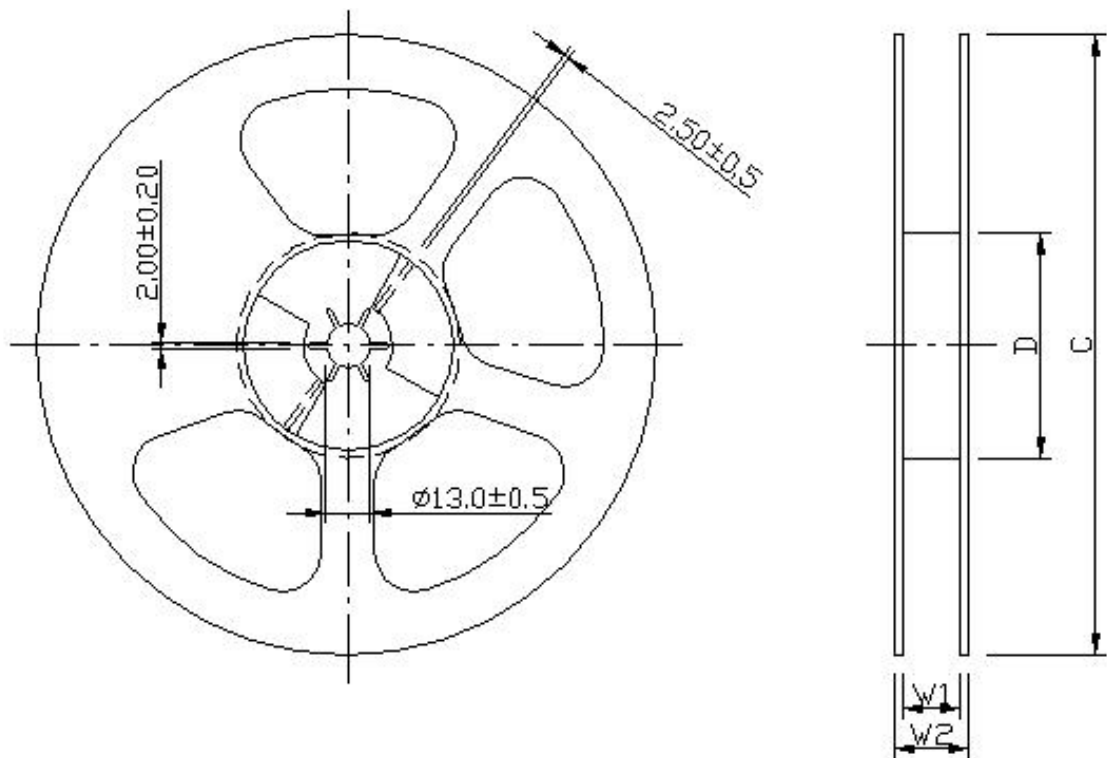
For dimensions see Table 4.

### DIMENSION:

Serial no	Checking note	Index	Spec(mm)
1	Sprocket hole	Do	1.55 $\pm$ 0.10
2	Pocket hole	D1	1.50 $\pm$ 0.10
3	Distance sprocket hole/sprocket hole	Po	4.0 $\pm$ 0.10
4	Distance pocket/pocket	P1	12.0 $\pm$ 0.10
5	Distance sprocket hole/pocket	P2	2.0 $\pm$ 0.10
6	Tape width	W	16.0 $\pm$ 0.30
7	Distance sprocket hole/outside	E	1.75 $\pm$ 0.10
8	Distance sprocket hole/pocket	F	7.50 $\pm$ 0.10
9	Pocket length	Ao	7.45 $\pm$ 0.10
10	Pocket length	Bo	9.30 $\pm$ 0.10
11	Pocket depth	Ko	1.35 $\pm$ 0.10
12	Thickness of tape	T	0.25 $\pm$ 0.10

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## 7”(180mm) Reel Specifications

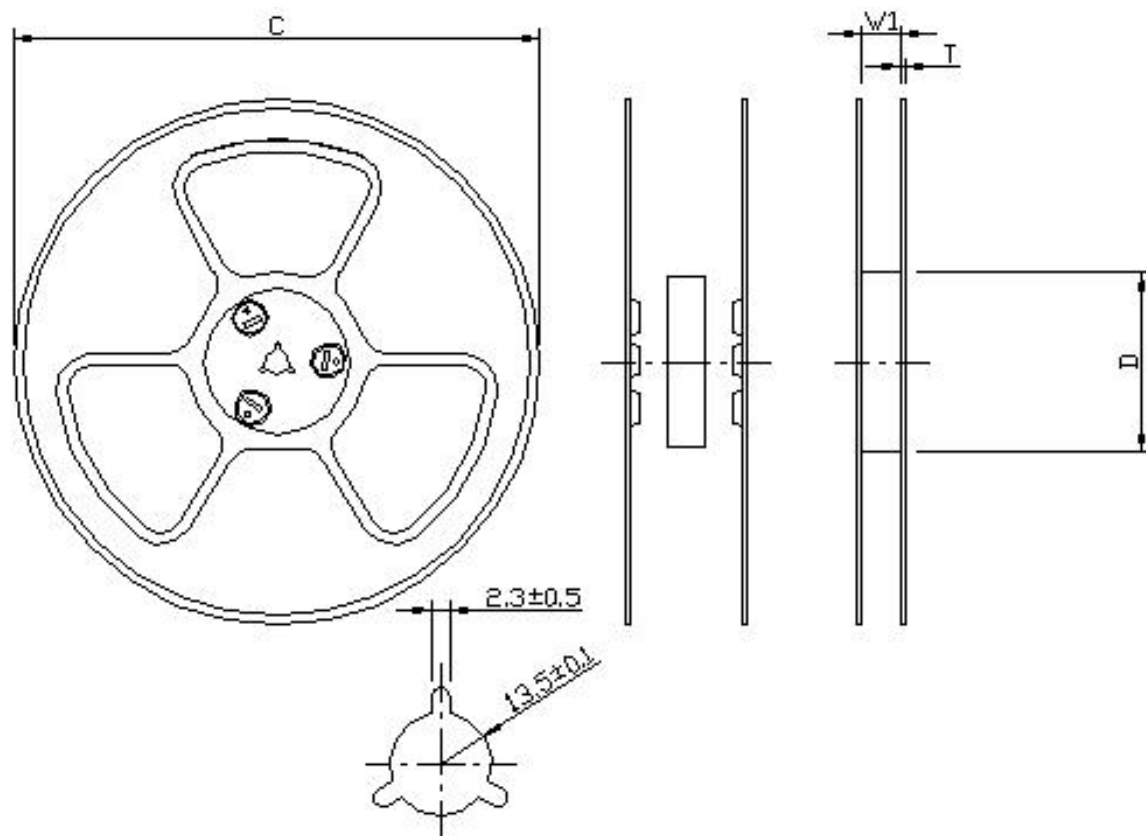


Product size code	Units per Reel	Tape Width (mm)	C (mm)	D (mm)	W <sub>1</sub> (mm)	W <sub>2</sub> (mm)
Antenna	1000	16	180.0±1.0	62±0.5	16.0 <sup>+1</sup> <sub>-0</sub>	20.5±0.2

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## 13”(330mm) Reel Specifications



Product size code	Units per Reel	Tape Width (mm)	C (mm)	D (mm)	W <sub>1</sub> (mm)	T (mm)
Antenna	4000	16	330±0.10	100±0.1	16.5±0.10	2.3±0.1

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