ANTENNA PRODUCTS

DATA SHEET

5010 Ceramic Chip Antenna for Bluetooth/Wimax Application

Feb, 2008 Ver.5

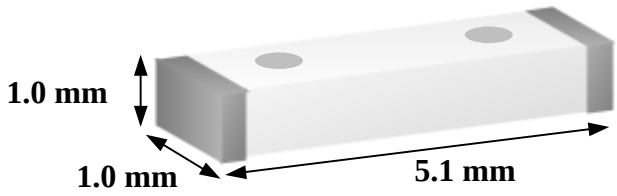
R&D	Print date 09/02/24								
	5010 Ceramic Chip Antenna for Bluetooth/Wimax Application			**CAN4311 851 XX 245 3K**				June, 2008 v3	
								Sept, 2008 v4	
								Feb, 2009 v5	
Justin Liu Oscar Lu	Tommy Chen			Page 1	sheet 190-1				A4
	Yageo Taiwan / High Frequency								

5010 Ceramic Chip Antenna for Bluetooth/Wimax Application

Quick Reference Data

Centre Frequency	2.45 GHz
Bandwidth	2.38 ~ 2.59 GHz
VSWR	2.0 (Max.)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Peak Gain	2.45 dBi
Impedance	50Ω
Operating Temperature	-25~85 ^{o}C
Termination	Ni / Sn (Environmentally-Friendly Leadless)
Resistance to soldering heats	260℃ , 10sec.
Maximum Power	1W

1. Mechanical Data (5.1 x 1x 1 mm³)

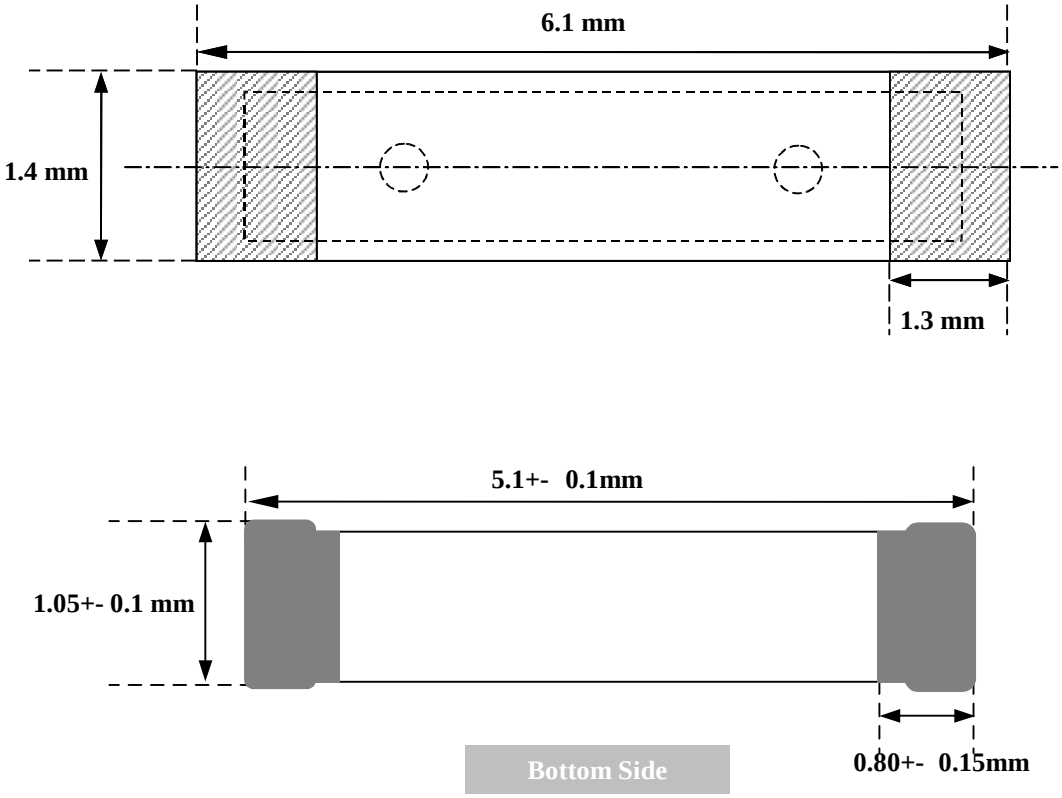


Top-Side View

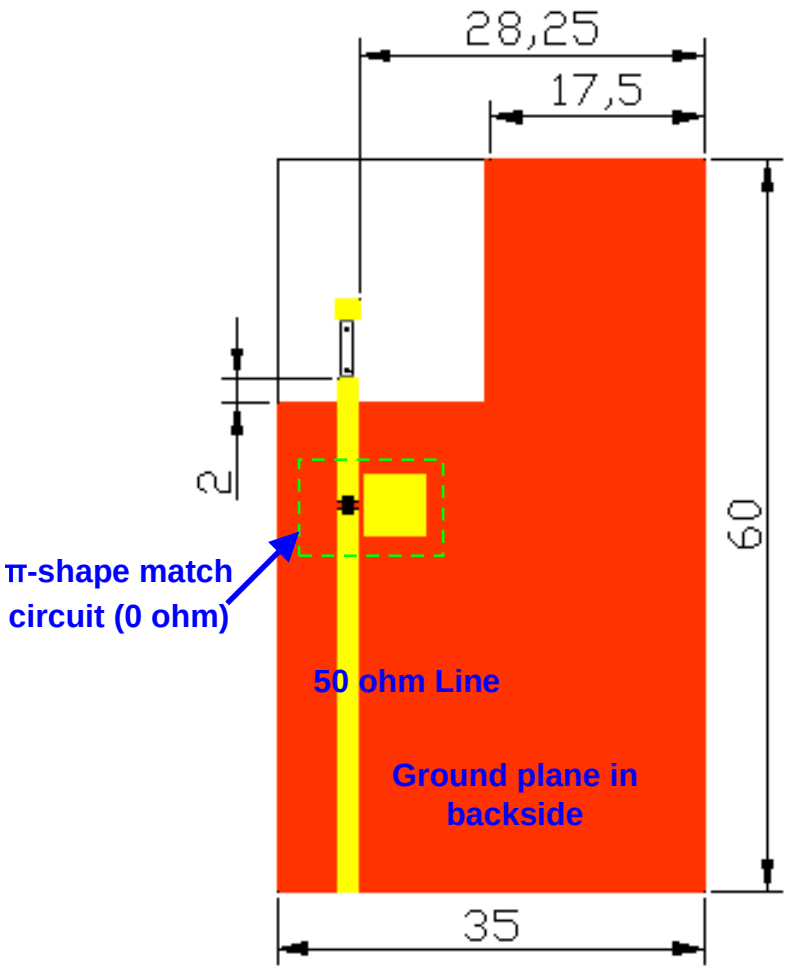
Bottom-Side View

CAN4311851002453K

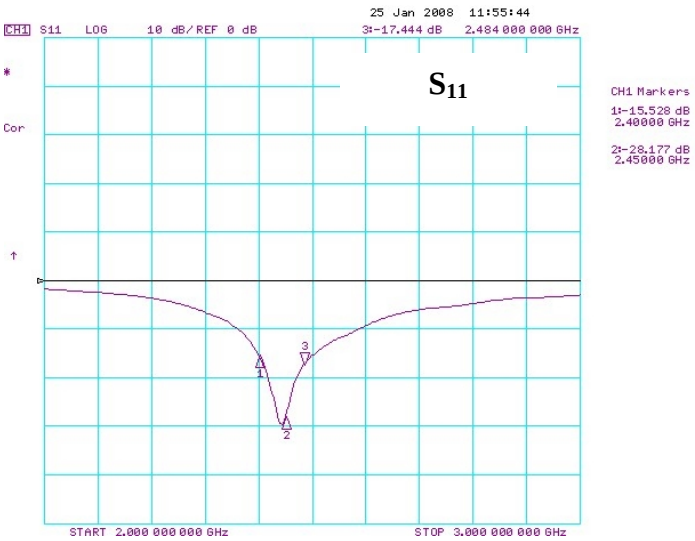
2. Dimension of Footprint

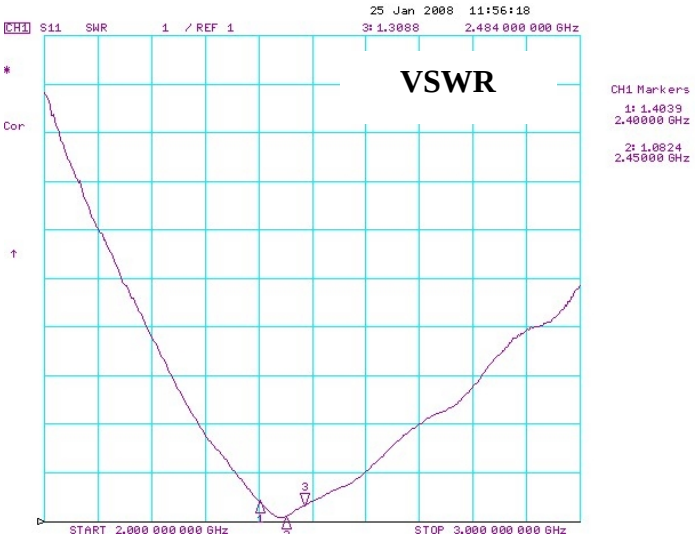


3. Evaluation Board Dimension and Outlook

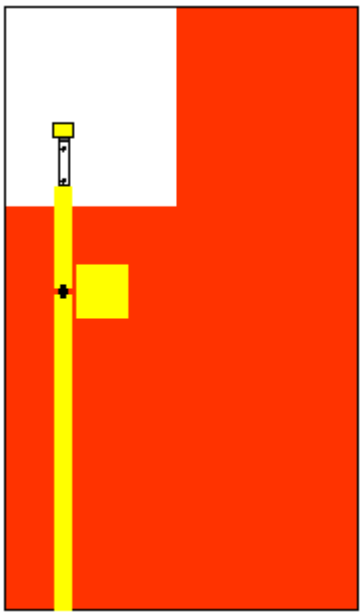


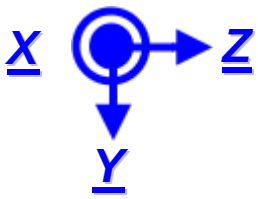
4. Measured S-parameter



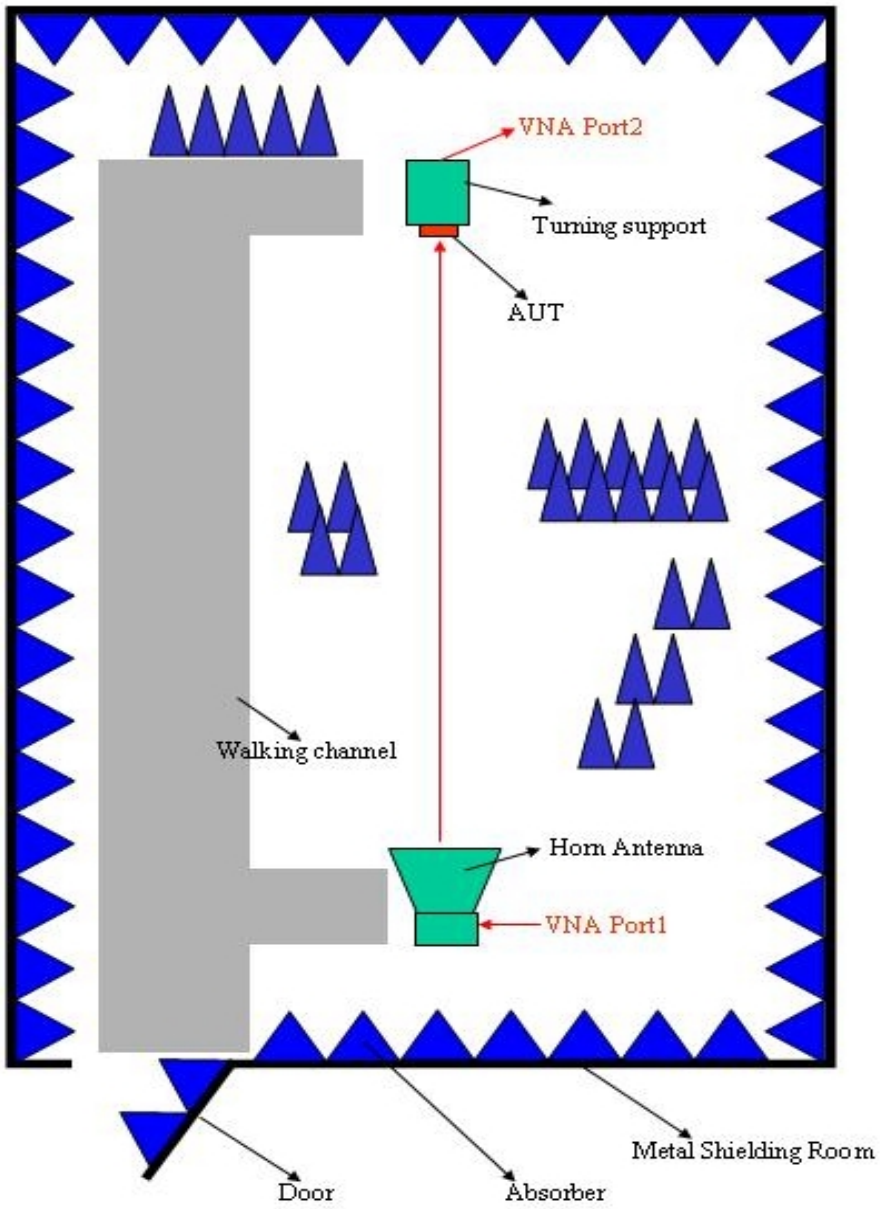


5.The Definition of X-Y-Z Plane

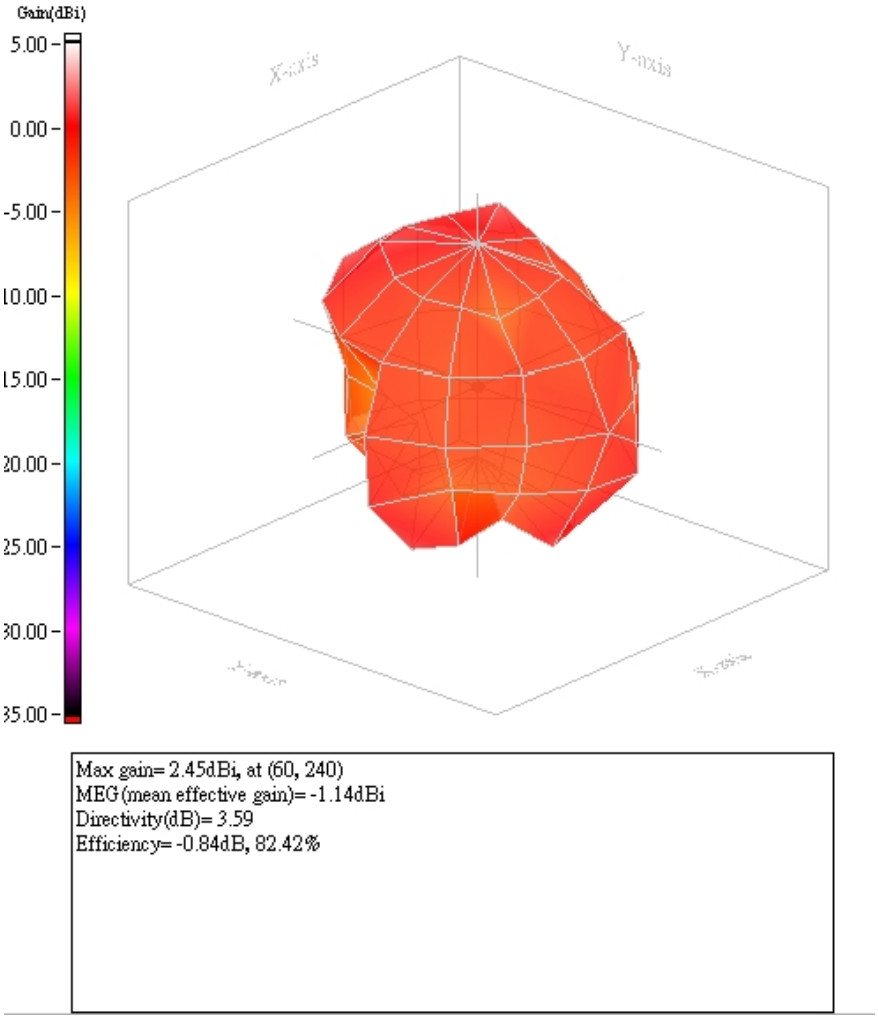




6. The Environment of Antenna Radiation Pattern
Anechoic Chamber Dimension=10(m) × 6(m) × 6(m)



7. Radiation Pattern



8. Reliability Test

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 ´ 10 magnification	In accordance with specification (chip off 4mm)
4.6.1		Antenna	Central Frequency at 20 ^{o}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 ± 5 °C for 10 ± 0.5 s in a static solder bath	Satisfy the original electrical specification after soldering.
		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%

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 ± 0.5 s in 235 ± 5°C.	The termination must be well tinned, at least 75% is well tinned at termination
4.12	4(Na)	Rapid change of temperature	-25 °C (30 minutes) to +85 °C (30 minutes); 100 cycles	No visible damage Central Freq. Change ± 6%
4.14	3(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 85 °C;	No visible damage 2 hours recovery Central Freq. Change ± 6%

■ **Notice (shipping and storage during transportation)**

In order to ensure some quality, it is suggested to follow the condition during shipping :

- **Temperature : -40~70℃**
- **Humidity : 45~75%**

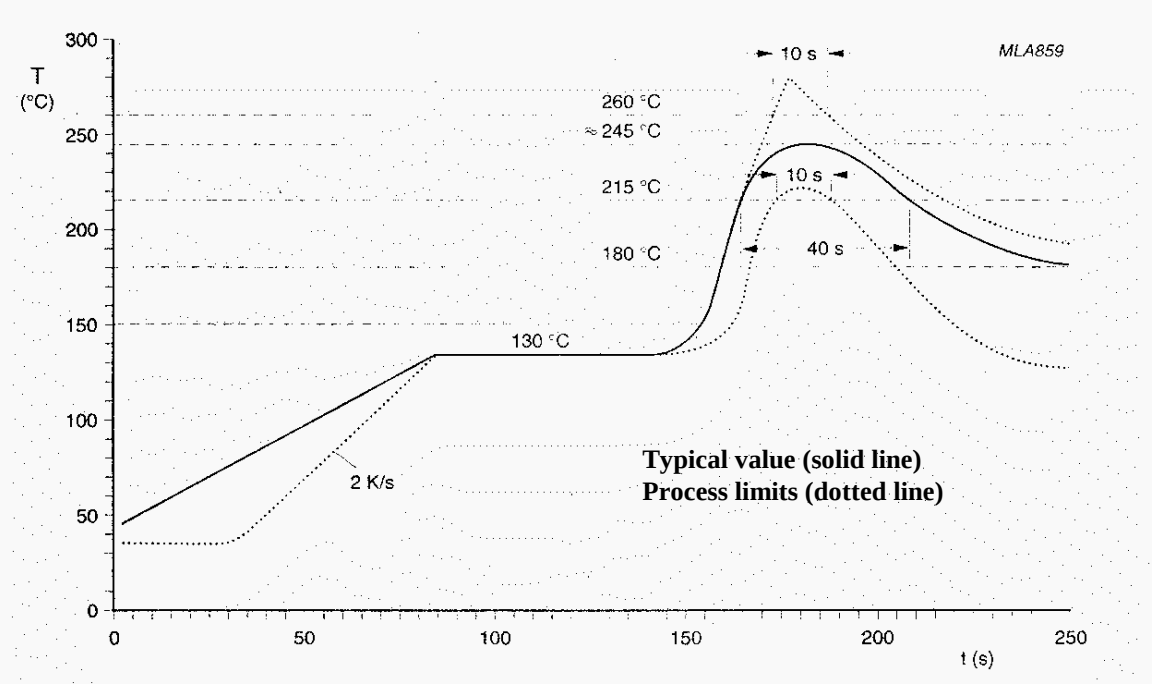
■ **Notice (storage condition)**

In order to ensure the solderability of the termination, it is suggested to follow the condition for storage :

- **Temperature : 15~30℃**
- **Humidity : 45~75%**
- **Prevent corrosive gas (SO_2, NO_X, NH_3, Cl_2, ..etc)**
- **It is better to use products within 6 months. Solderability should be confirmed again if exceed 6 months.**

9. Soldering Condition (Suggestion)

* Customers should alter the profile according to realistic tin paste in use.



10. 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 8 51 04 245 3K

Family Code
CAN 43 = Yageo Part No. for Antenna

Packing Type Code
11 = 180 mm/ 7" reel , blister taping

Materials Code
8 = High Frequency Material (White)

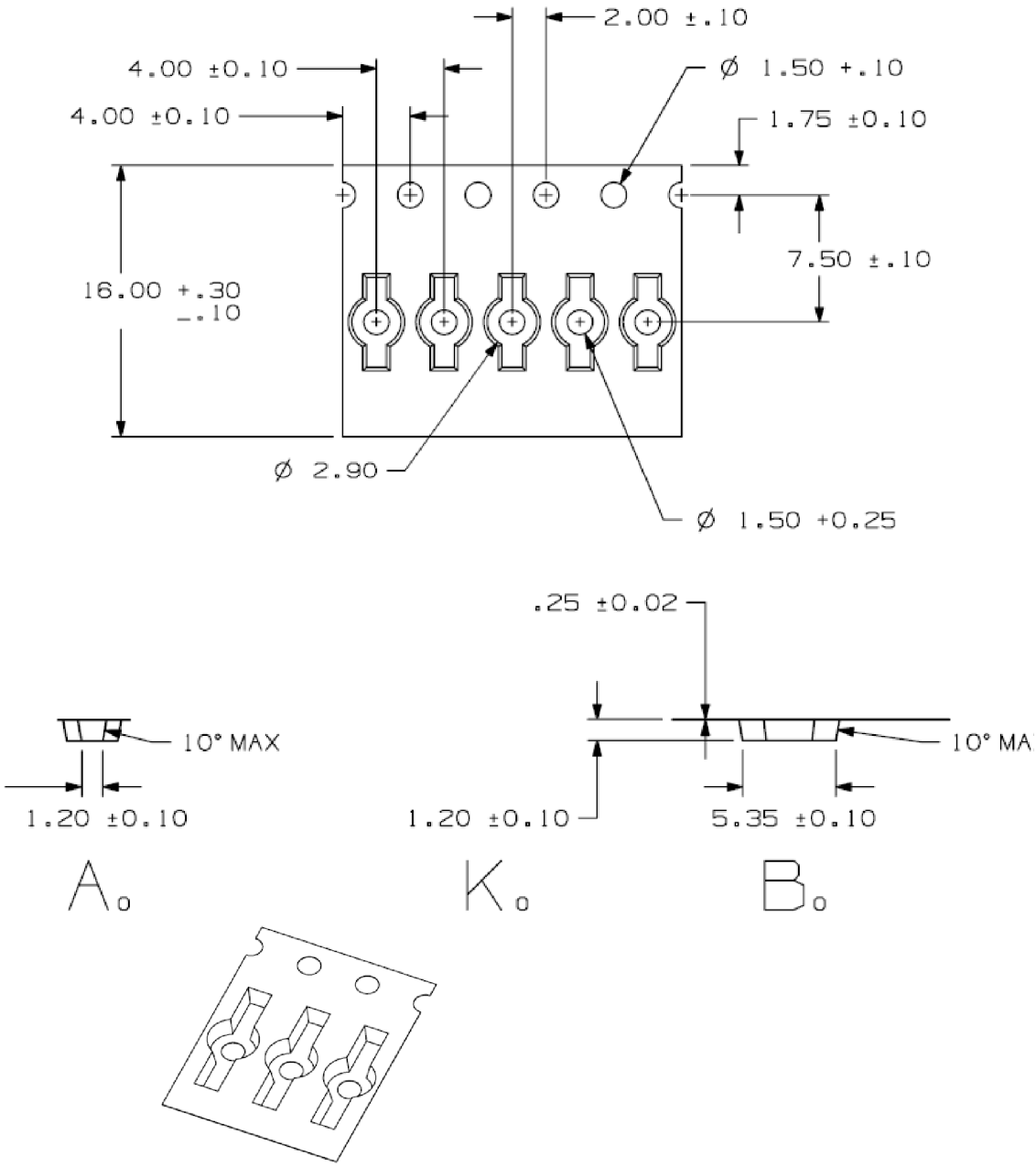
Size Code
51 = 5.0 * 1.0 * 1.0 mm

Antenna type
00 = Normal type
01 = type 01
02 = type 02
03 = type 03
04 = type 04
05 = type 05
06 = type 06
07 = type 07
08 = type 08

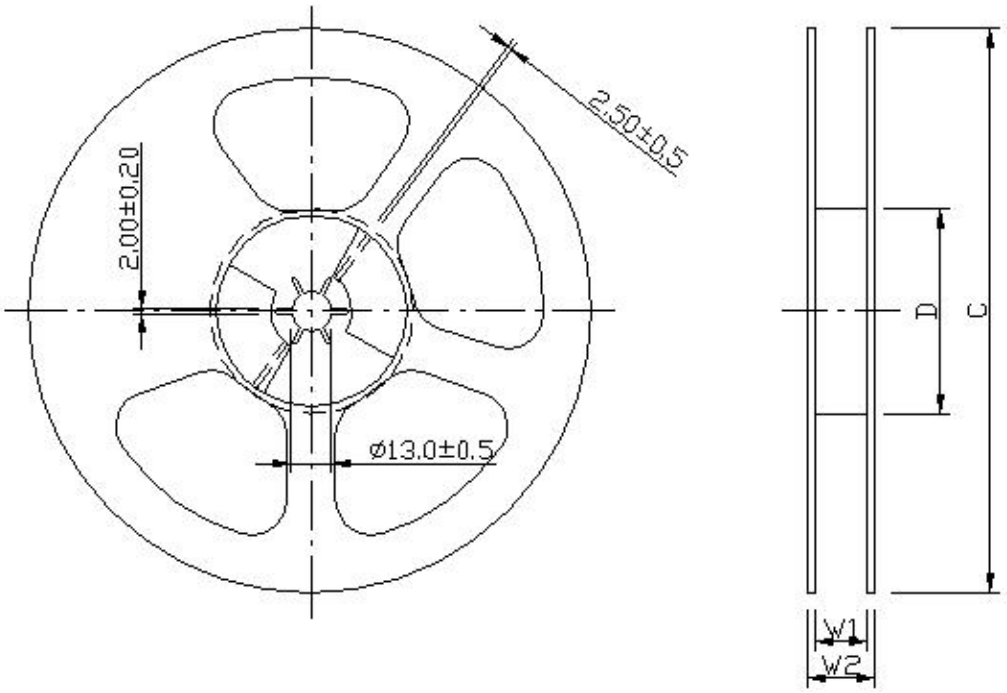
Working Frequency
245 = 2.45 GHz

Packing Type Code
3K = 3000 pcs for taping per reel

11. Taping Blister Tape



12. Taping Reel - 7”(180mm) Specifications



Product size code	Units per Reel	Tape Width (mm)	C (mm)	D (mm)	W_1 (mm)	W_2 (mm)
Antenna	1000	16	180.0±1.0	62±0.5	16.0±1.0	20.5±1.0

11. Tape Revision Control:

Revision	Date	Content	Remark
V1	Jan, 2008	New Issue	
V2	May, 2008	Increase type 1~4, 8.	
V3	June, 2008	Increase normal type	
V4	Sept, 2008	To modify the spec of end-termination	
V5	Feb,2009	To modify the suggestion of footprint	