ANTENNA PRODUCTS

DATA SHEET

3216 Ceramic Chip Antenna in PIFA Mode for Bluetooth/WLan Application

Preliminary

Jul. 2009.

R&D	Print date 09/07/13				
	3216 Ceramic Chip Antenna (PIFA Mode) for Bluetooth/WLan Application	**CAN4311 712 1X 245 3K**		Pre	Jul, 2009
Willing Chang	Tommy Chen	Page 1	sheet 190-1		A4
Oscar Lu	Yageo Taiwan / High Frequency Ceramic Department				

3216 Ceramic Chip Antenna for Bluetooth/WLAN Application

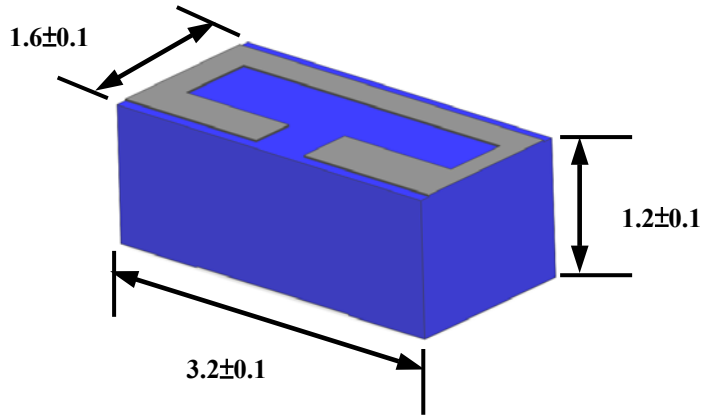
Product Specification

Quick Reference Data

Centre Frequency	2.45 GHz
Bandwidth	2.4 ~ 2.484GHz
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Peak Gain	2.84 dBi
Impedance	50Ω
Operating Temperature	-25~85°C
Termination	Ni / Sn (Environmentally-Friendly Leadless)
Resistance to soldering heats	260℃ , 10sec.
Maximum Power	1W

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

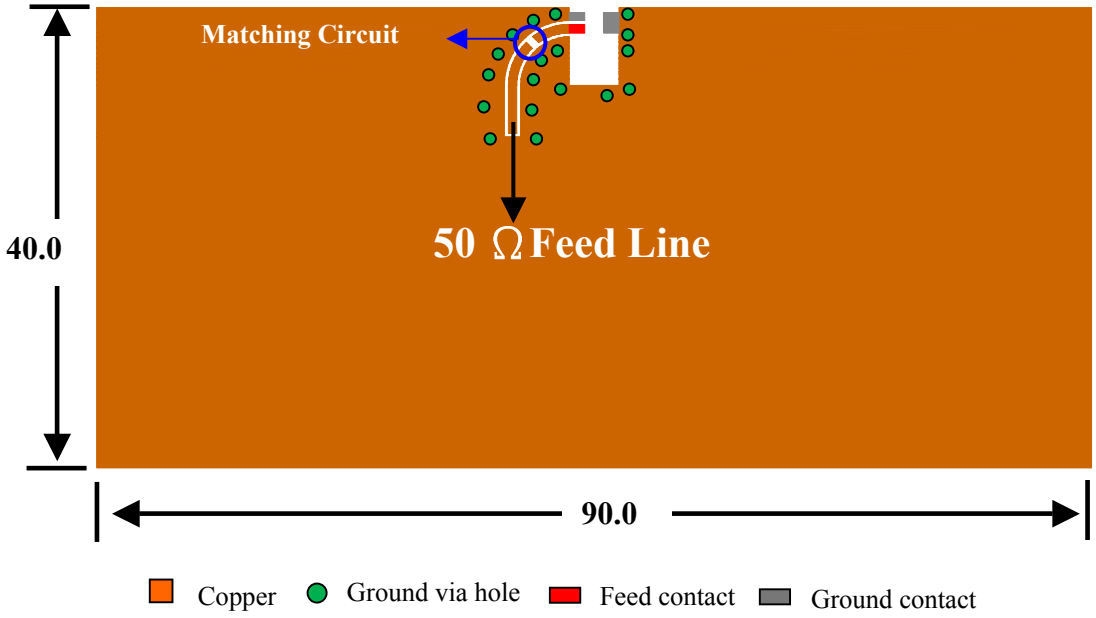
1. Mechanical Data (3.2 x 1.6x 1.2 mm³)



Unit: mm

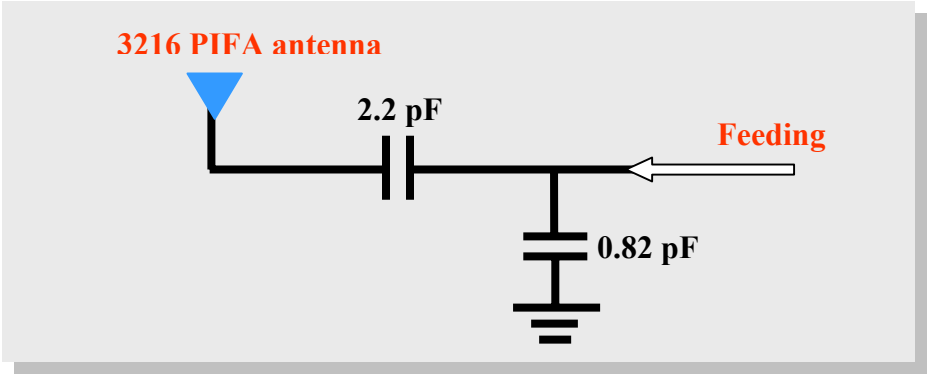
2. Evaluation Board Dimension and Outlook

■ Illustration of Evaluation Board



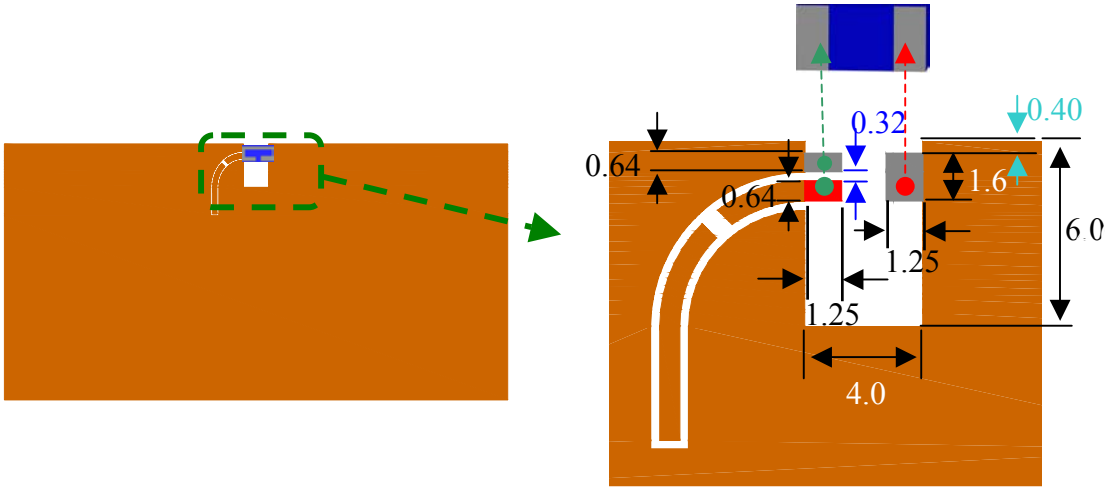
Unit: mm

■ Suggested Matching Circuit :



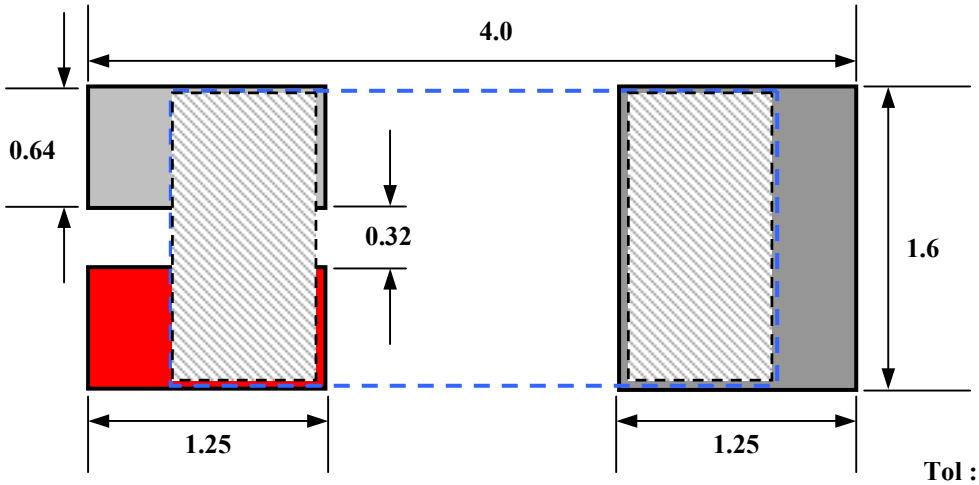
■ Clearance Definition:

(Size = 6.0 * 4.0 mm)



Unit: mm

■ Soldering Pads Dimension and Footprint :



Tol : ±0.2
Unit : mm

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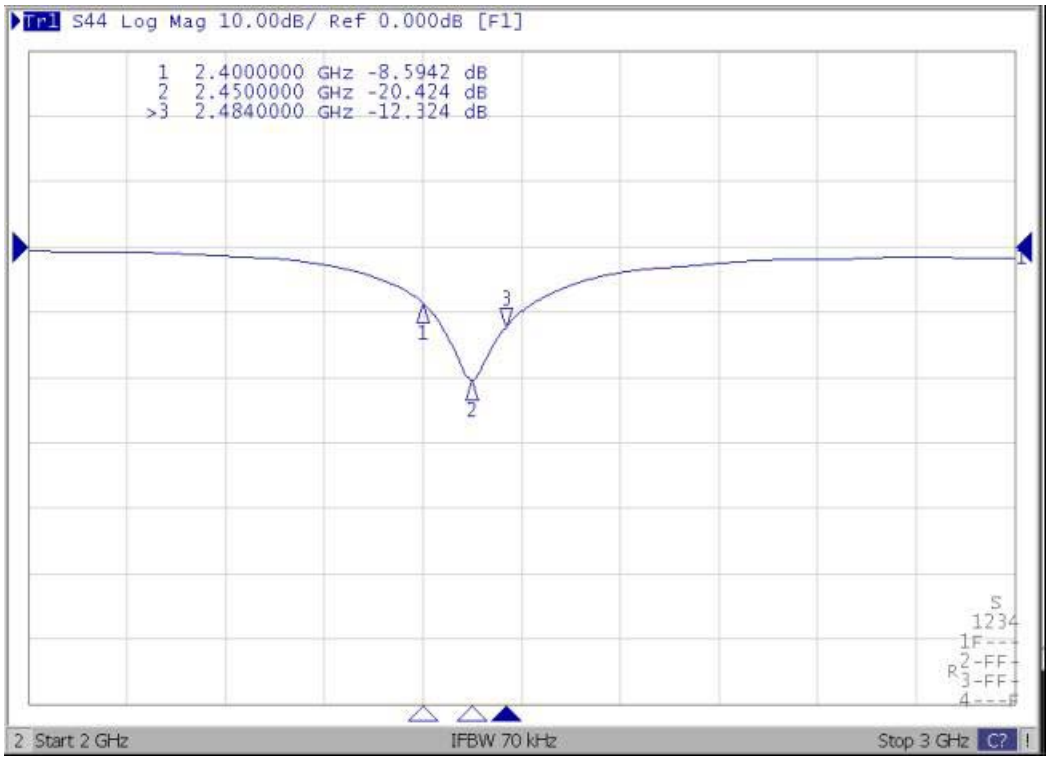
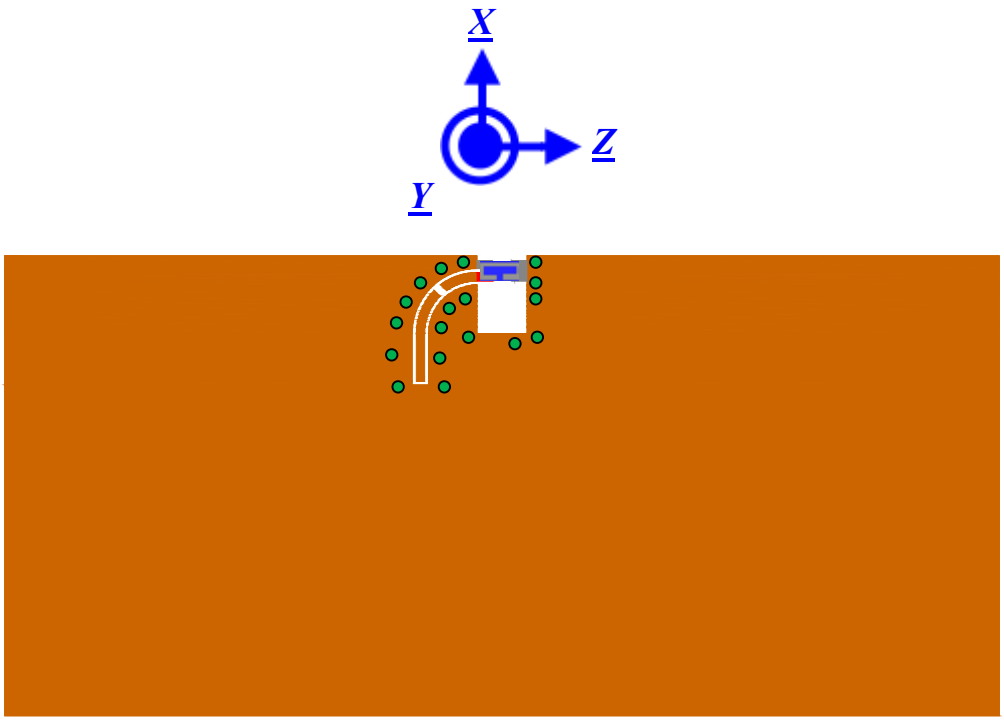
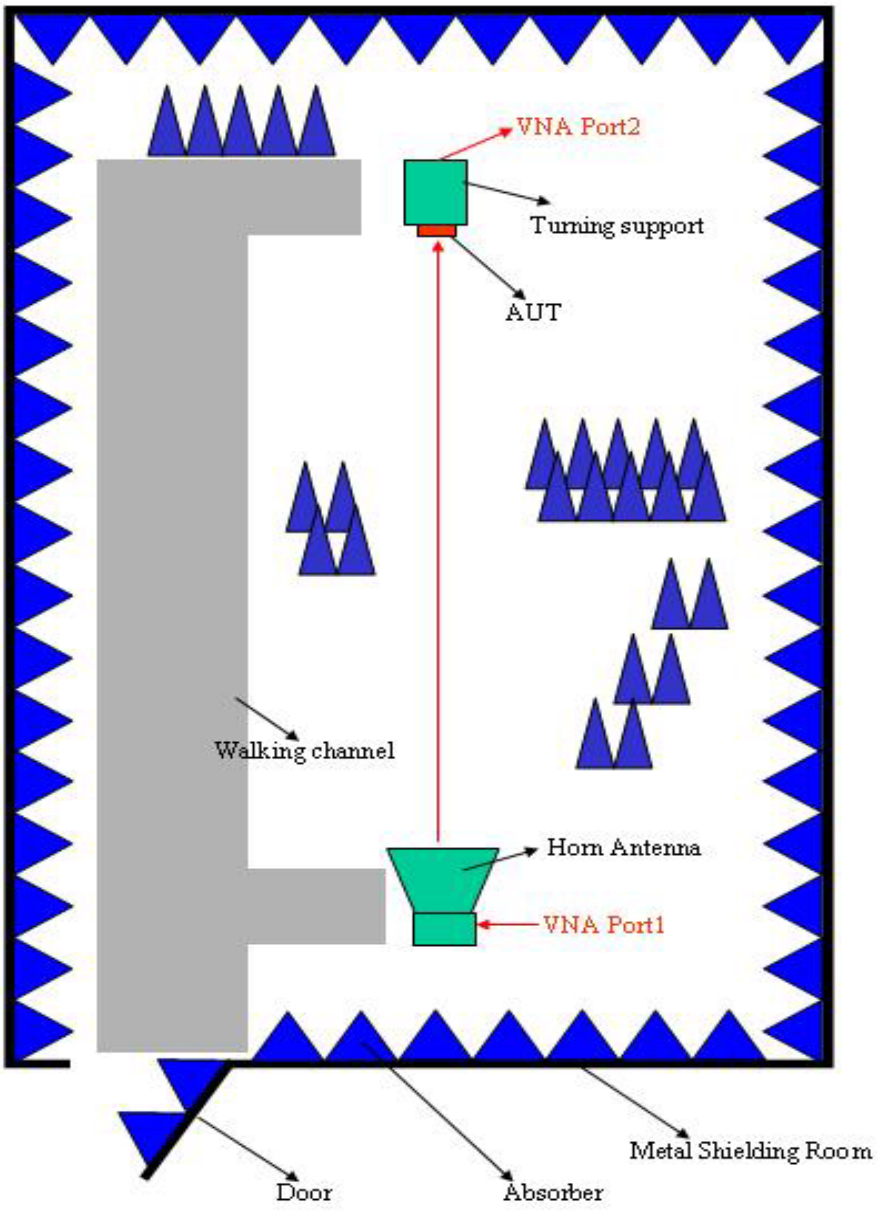
3. Measured S-parameter



4.The Definition of X-Y-Z Plane

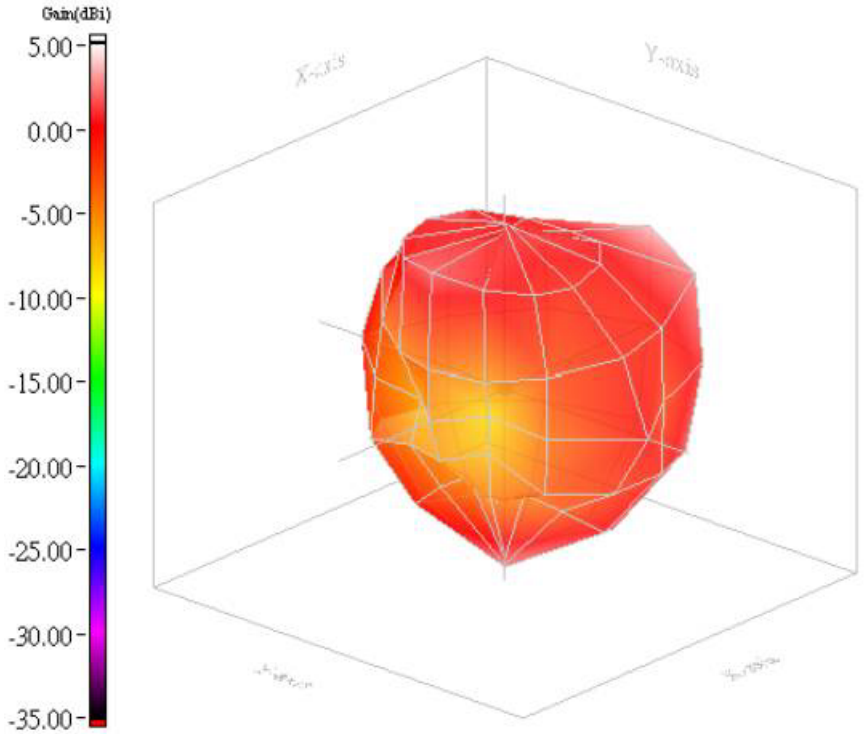


5. The Environment of Antenna Radiation Pattern
Anechoic Chamber Dimension=10(m) × 6(m) × 6(m)



6. Radiation Pattern

Model name	Test mode
2	3D
Test frequency / Polarization	**Test date**
2450.00 MHz / Vector	2009/7/6



Max gain= 3.71dBi, at (60, 180)
MEG(mean effective gain)= 0.14dBi
Directivity(dB)= 4.41
Efficiency= -0.70dB, 85.20%

7. 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

IEC 384-10/ CECC 32 100 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
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%
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%

8. 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	12	11	245	3K
F	C	M	S	T	A	P

F, Family Code
CAN 43 = Yageo Part No. for Antenna

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

M, Materials Code
7 = High Frequency Material (blue)

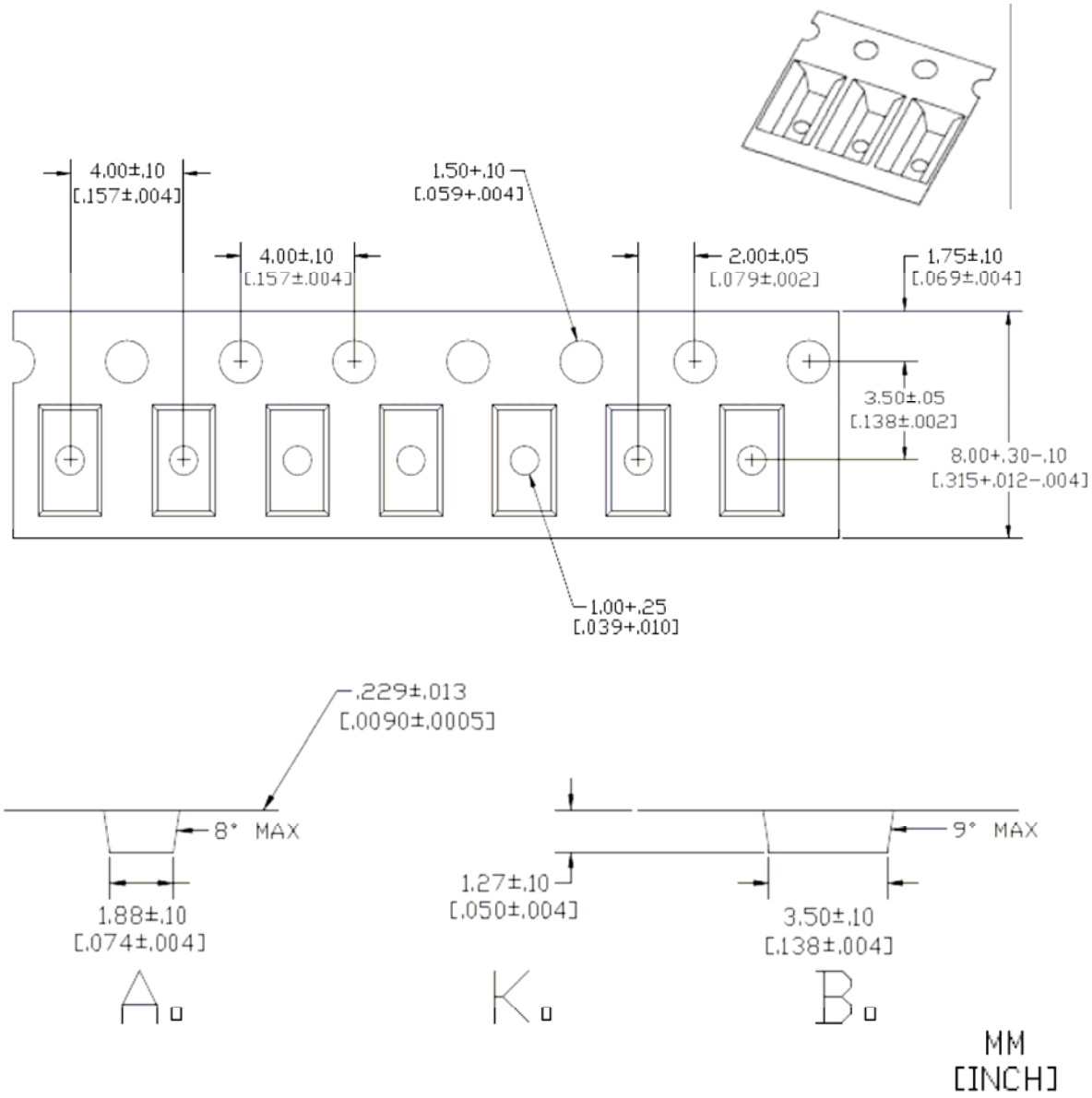
S, Size Code
12 = 3.2* 1.6mm (thickness = 1.2 mm)

T, Antenna type
1X = mode 1
11 = mode 1, type 1

A, Working Frequency
245 = for application band around 2.4~2.5GHz

P, Packing quantity
3K = 3000 pcs in one reel.

9. Taping Blister Tape



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

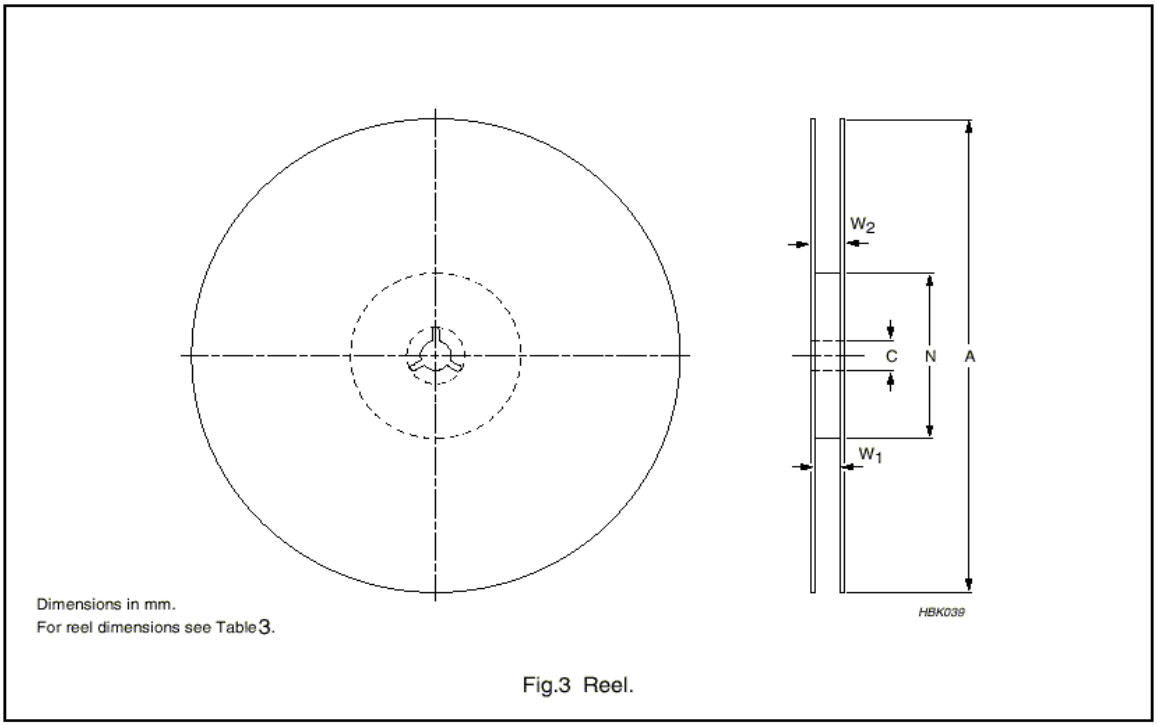


Fig.3 Reel.

Units per Reel	Tape Width (mm)	A (mm)	N (mm)	C (mm)	W_1 (mm)	W_2 Max (mm)
3000	12	180.0±1.0	60±1	$13^{+0.5}_{-0.2}$	$12.4^{+2.0}_{-0.0}$	18.4

11. Tape Revision Control:

Revision	Date	Content	Remark
Preliminary	7th ,Jul, 2009	New issued	