

Confidential

承認圖號 20110817

產 品 承 認 書
PRODUCT SPECIFICATION FOR APPROVAL

客戶：羅技
Customer : Logitech

Product Type : 3216 Chip Antenna Series
Project/Model Code : Quark
Description : 3216 2.45GHz Ceramic PIFA-Coupling Chip Antenna, Type 11 (Series-1/Type-1)

Yageo PN (國巨料號) : CAN4311712112453K
Logitech PN (羅技料號) : 340-000637

貴公司承認印
Approval Signatures

日期/Date : 2011/08/17

承認後請寄回本承認書一份
Please return one copy with your approval

國巨股份有限公司 Yageo (Taiwan) Ltd.

Innovative Service Around the Globe **YAGEO**

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ANTENNA PRODUCTS

DATA SHEET

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

Jul. 2011.V4

R&D	Print date 11/08/17			
	3216 Ceramic Chip Antenna (PIFA Mode) for Bluetooth/WLan Application	CAN4311 712 11 245 3K	V1	Sep,2009
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Yageo 3216 CPIFAC Chip Antenna for Bluetooth/WLAN Application

Product Specification

Quick Reference Data

Centre Frequency	2.45 GHz
Bandwidth	230 MHz (Min)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Peak Gain	3.68 dBi
Impedance	50Ω
Operating Temperature	-25~85 °C
Termination	Ni / Sn (Environmentally-Friendly Leadless)
Resistance to soldering heats	260°C , 10sec.
Maximum Power	1W

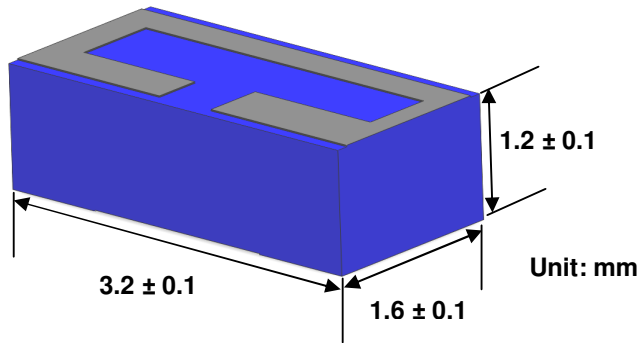
Remark : The specification is defined on the YAGEO's evaluation board



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.

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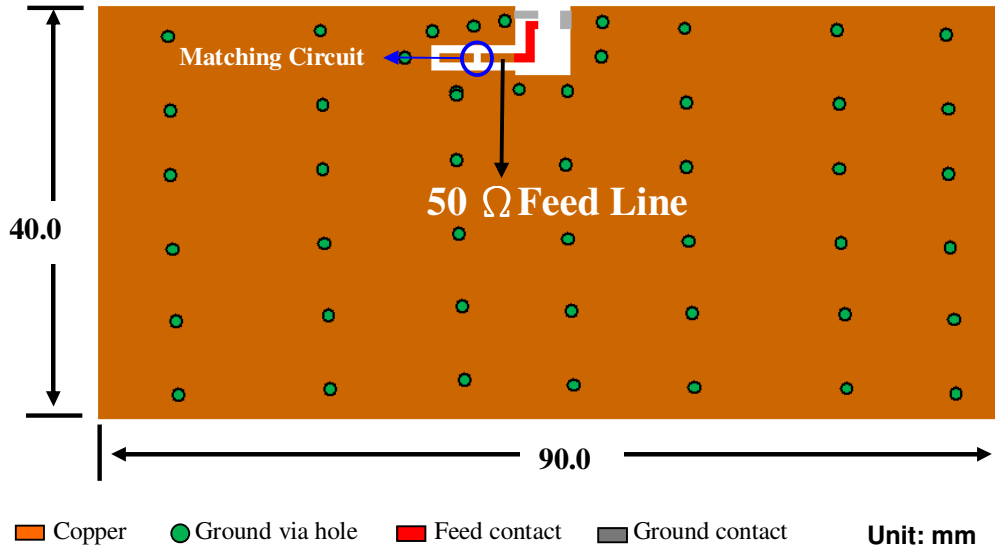
1. Mechanical Data (3.2 x 1.6x 1.2 mm³)



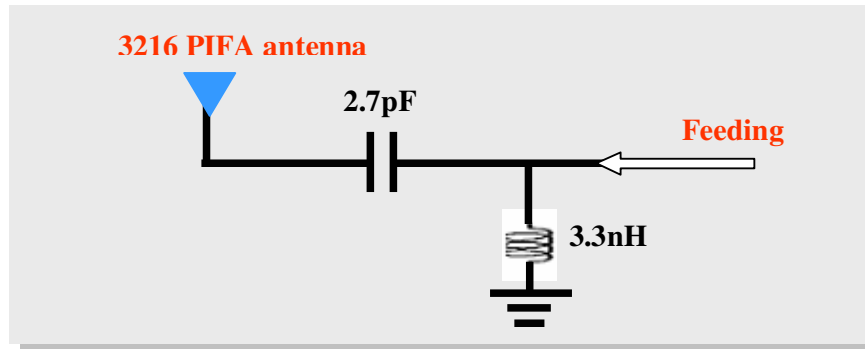
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2. Dimension and Outlook of the Evaluation Board

■ Illustration of the Evaluation Board

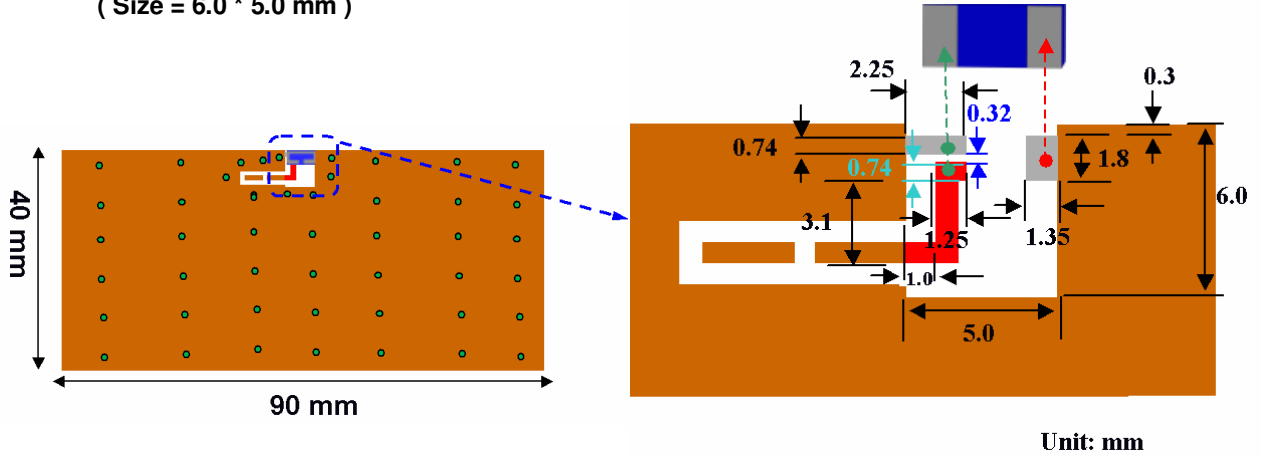


■ Suggested Matching Circuit :

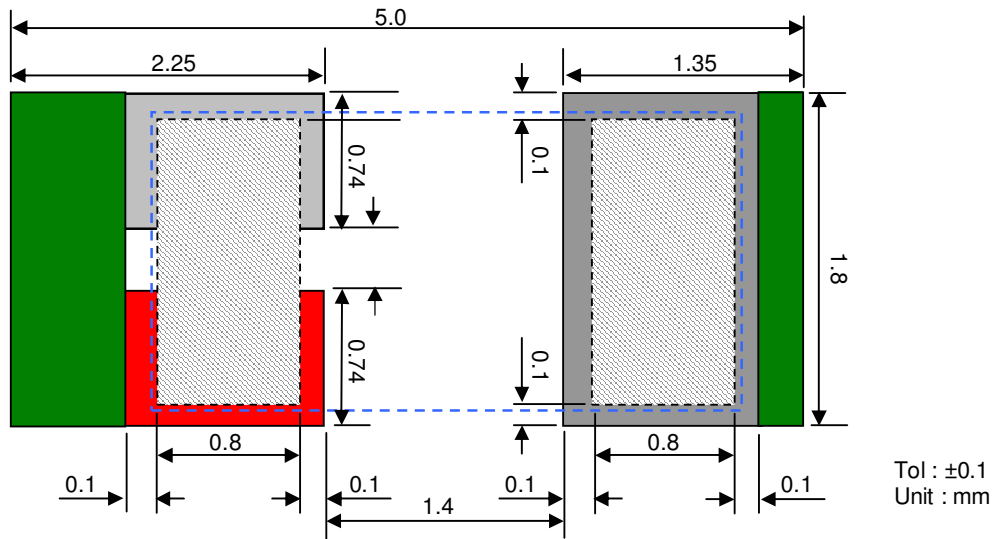


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■ **Clearance Definition:**
(Size = 6.0 * 5.0 mm)



■ **Soldering Pads Dimension and Footprint :**



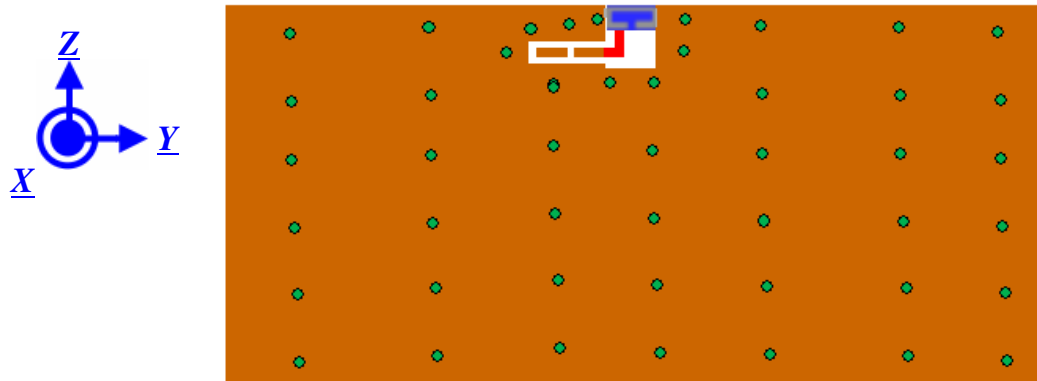
- Covering Paint**
- Footprint for Feeding**
- Footprint (connect to ground)**
- Position of the Chip Antenna**
- Soldering Pads of Chip Antenna**

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3. Measured S-parameter on the Evaluation Board

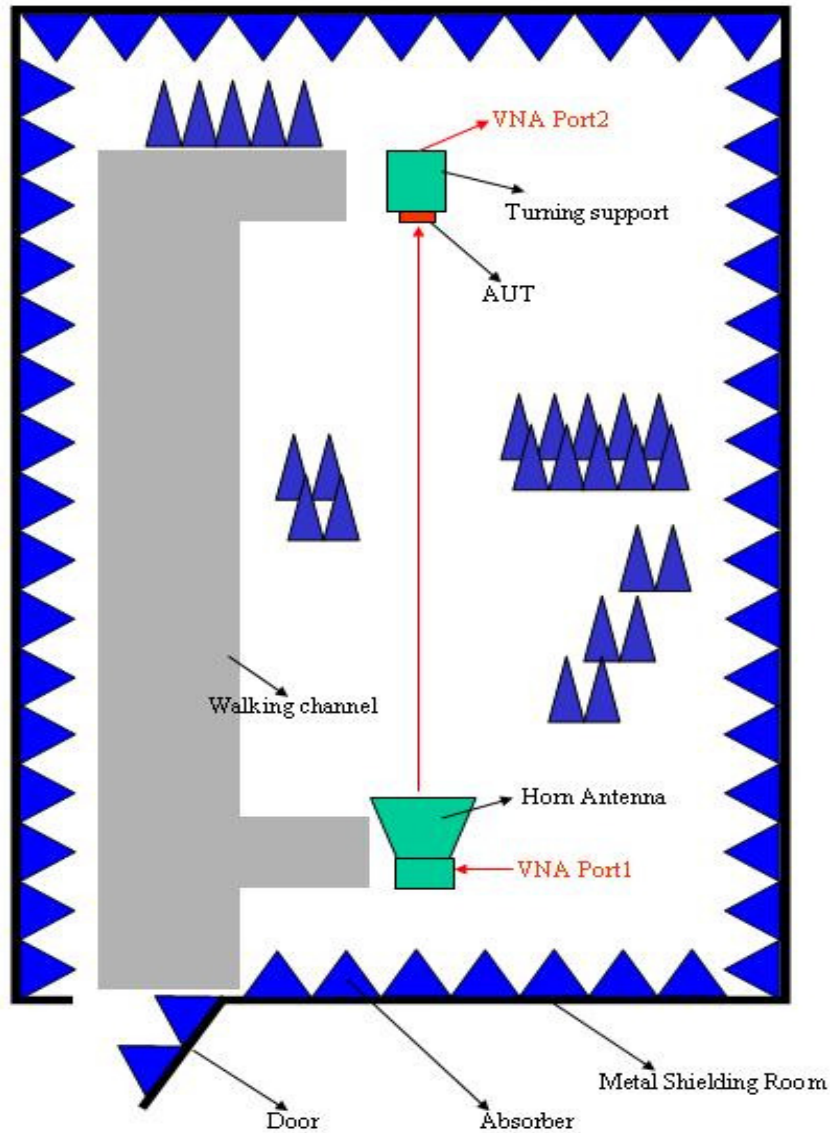


4. The X-Y-Z Plane Definition for the Evaluation Board



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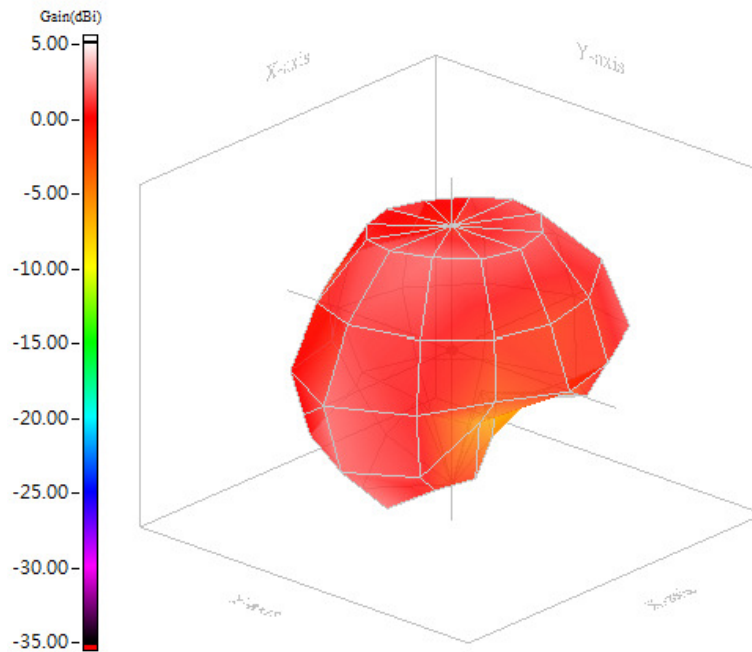
5. The Environment of Antenna Radiation Pattern
Anechoic Chamber Dimension=10(m) × 6(m) × 6(m)



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6. Radiation Pattern

Model name	3216 pifa evb	Test mode	3D
Test frequency / Polarization	2450.00 MHz / Vector sum	Test date	2011/7/15



Max gain= 3.68dBi, at (120, 180)
 MEG(mean effective gain)= -0.47dBi
 Directivity(dB)= 4.29
 Efficiency= -0.61dB, 86.89%

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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 x 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

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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%

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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 = for 3.2*1.6mm size, series 1 = design of (PIFA + Coupling)

11 = Type 12 (series 1, type 1)

12 = Type 12 (series 1, type 2)

A, Working Frequency

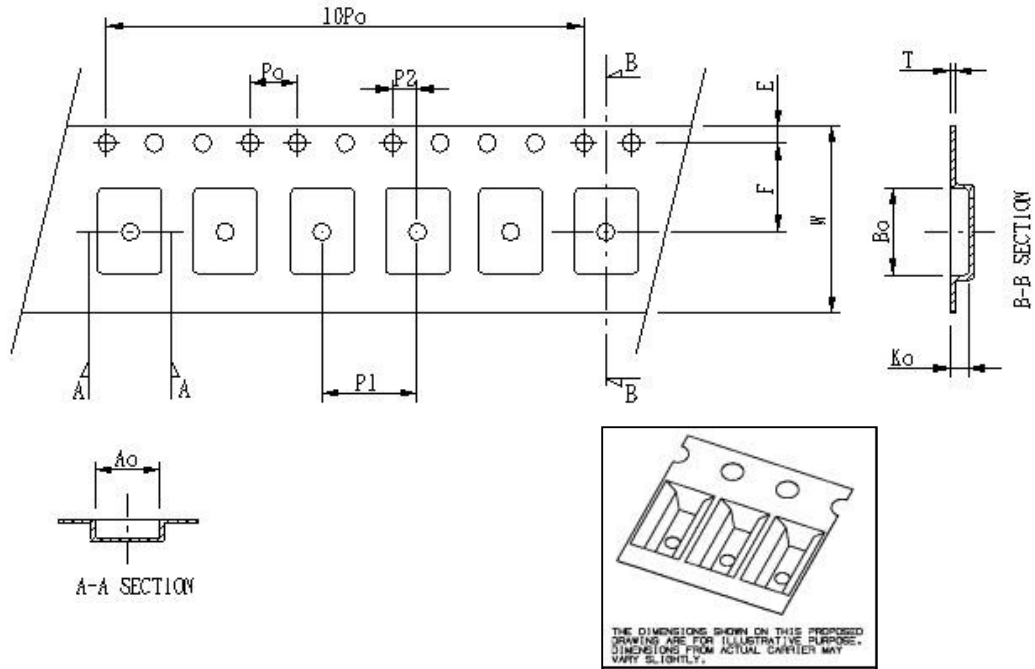
245 = for application band around 2.4~2.5GHz

P, Packing quantity

3K = 3000 pcs in one reel.

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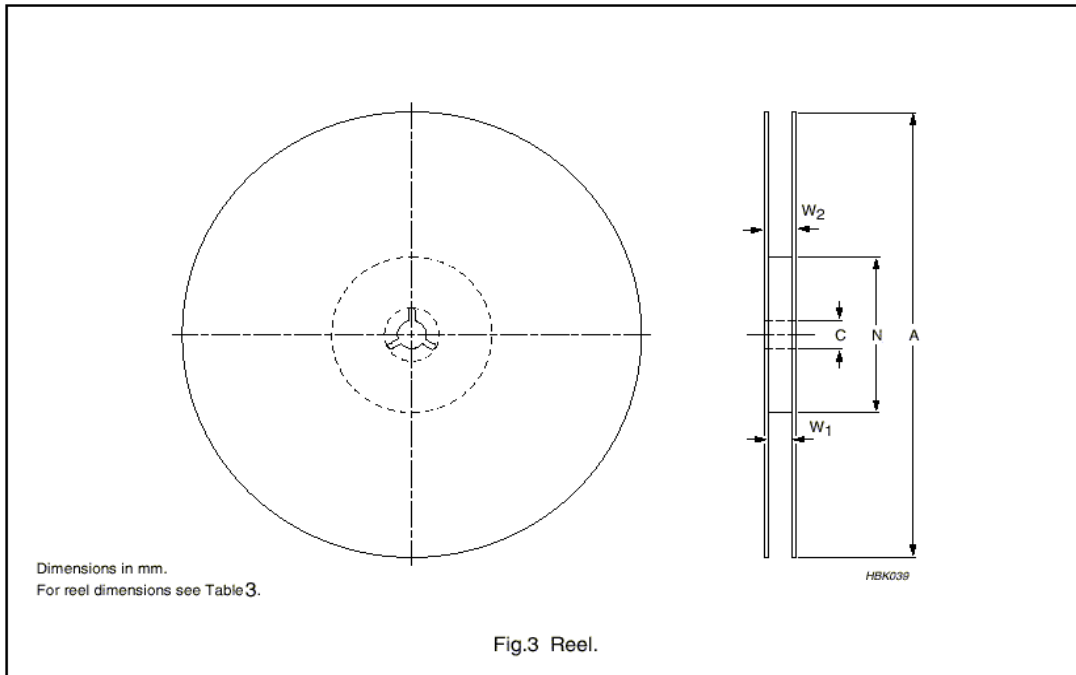
9. Taping Blister Tape



Serial no	Checking note	Index	Spec(mm)
1	Sprocket hole	Do	1.50±0.10
2	Pocket hole	D1	1.0±0.05
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±0.05
6	Tape width	W	12.0±0.30
7	Distance sprocket hole/outside	E	1.75±0.10
8	Distance sprocket hole/pocket	F	5.50±0.05
9	Pocket length	Ao	1.47±0.20
10	Pocket length	Bo	3.4±0.20
11	Pocket depth	Ko	1.8±0.20
12	Thickness of tape	T	0.279±0.02
13	10x sprocket hole pitch	10Po	40.0±0.20

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



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

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11. Tape Revision Control:

Revision	Date	Content	Remark
Preliminary	7 th ,Jul, 2009	New issued	
V1	21 th ,Sep, 2009	To modify the information of the evaluation-board, including illustration, matching circuit, and measured result. (Page 4, 5, 6, and 8)	
V2	28 th ,Oct, 2009	To modify the PCB layout on the evaluation board. (Page 4, 5, 6, and 8)	
V3	13 th ,Sep, 2010	To modify detailed dimension information of soldering pads and footprints (Page 5).	
V4	15 th ,Jul, 2011	To update the radiation pattern (Page 8).	

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