Preliminary

SPECIFICATION

MULTILAYER CHIP ANTENNA

Model No. : ALA621C2
ALA621C3
ALA621C4

Dec **14, 2005**

	WRITTEN	CHECKED	APPROVED
SEJONG TRONICS CO.,LTD **TEL : 82-2-586-6012 FAX : 82-2-586-6082**			

Notes
The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

1. SPECIFICATIONS

1.1 Electrical Specifications

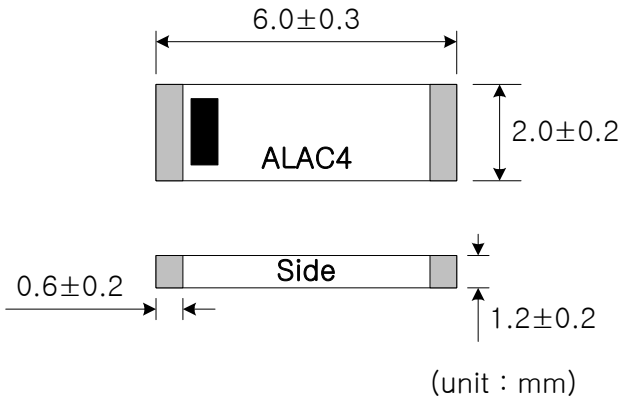
ITEM	SPEC.		Unit
Center Frequency	ALA621C2	2.51	GHz
	ALA621C3	2.95	
	ALA621C4	3.38	
Gain	0 max.		dBi
VSWR	2.5 : 1 max.		
Polarization	Linear		
Azimuth Beam Pattern	Omni-directional		
Impedance	50		Ω

※ These values are measured on the matched reference test board.

1.2 Mechanical Specifications

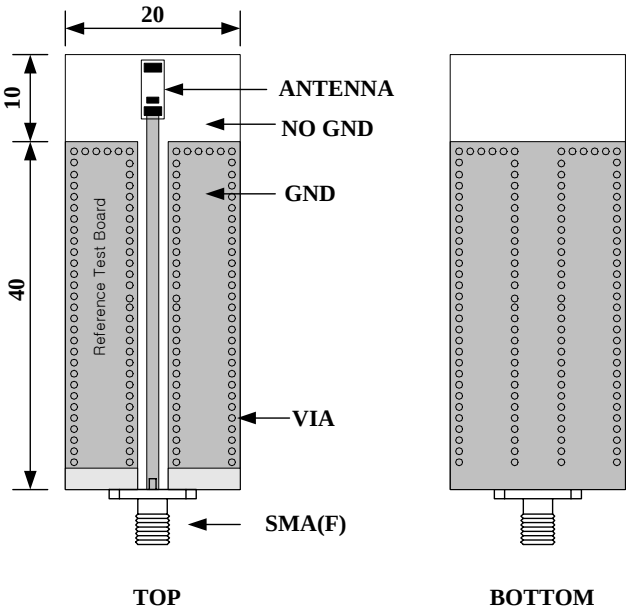
Internal Electrode	Ag	
External Electrode	Ag/Ni/Sn	
Dimensions (L x W x H)	6 x 2 x 1	mm
Unit Weight	46 ± 2	mg
Operating Temperature	-35 ~ +85	℃

1.3 Appearance and Dimensions

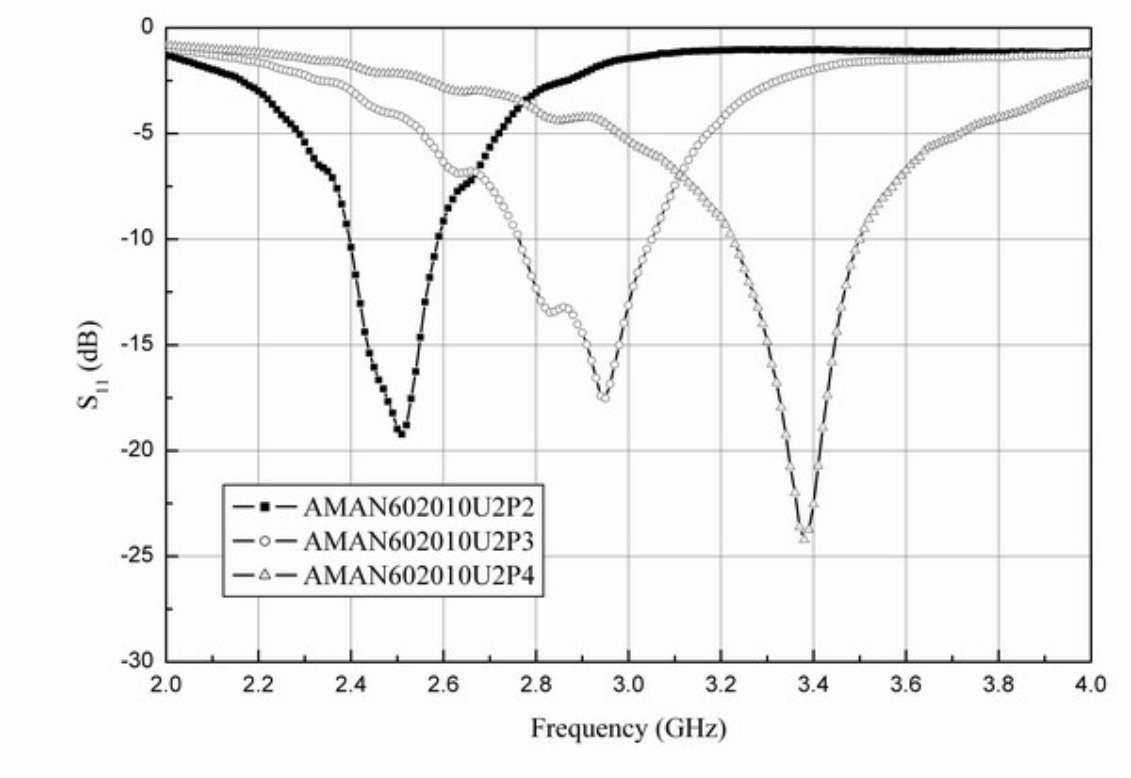


2. MEASUREMENT

2.1 Reference Test Board for Measurement



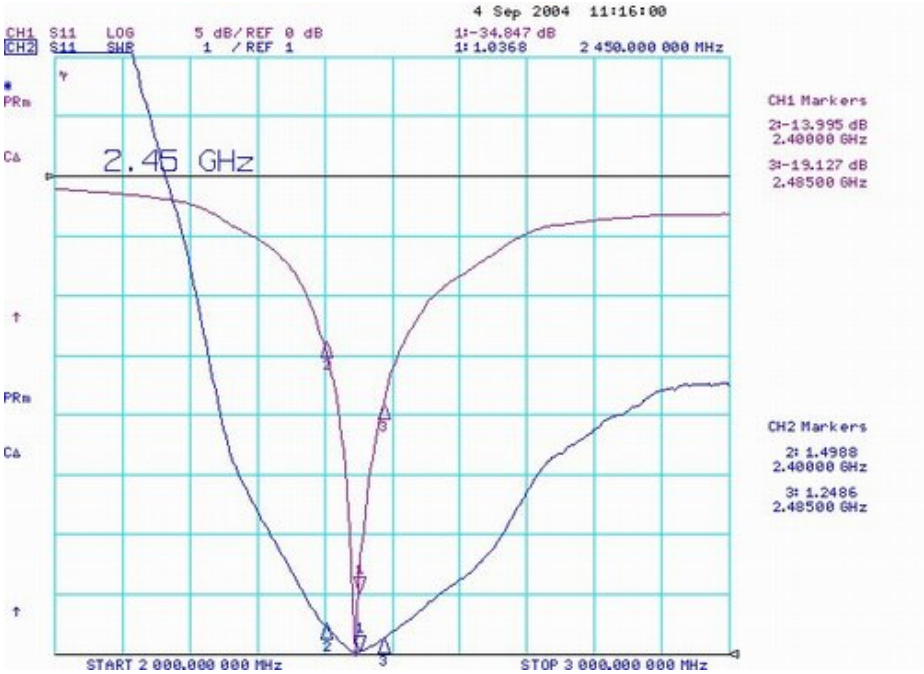
2.2 Electrical Characteristic



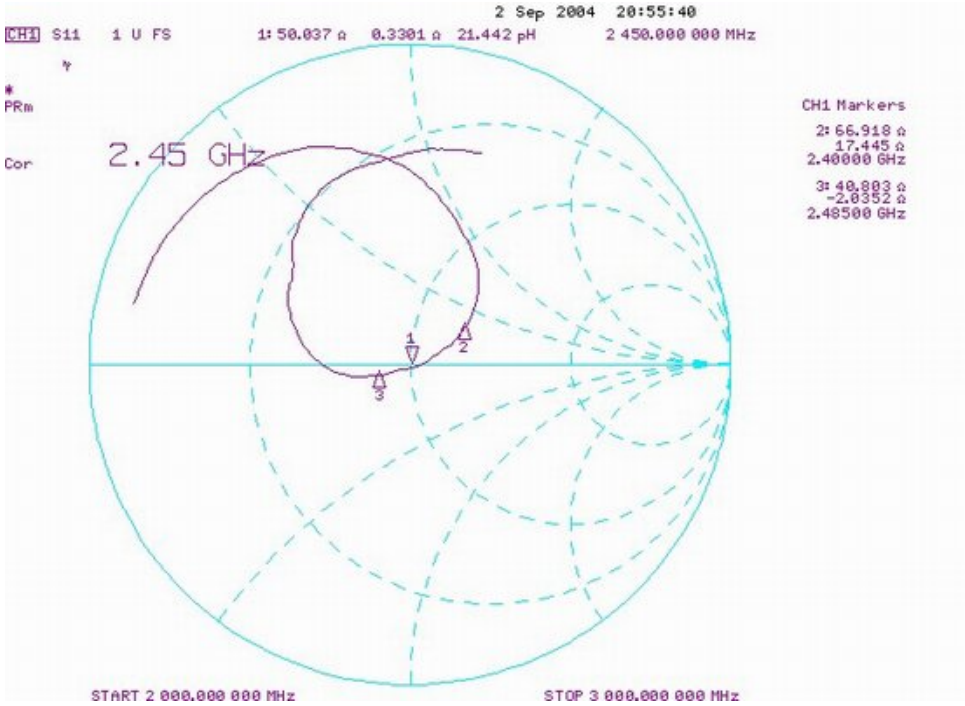
2.3 Electrical Characteristic (ALA621C2)

- Bluetooth matching on the reference test board

A. S_{11} (Return Loss)

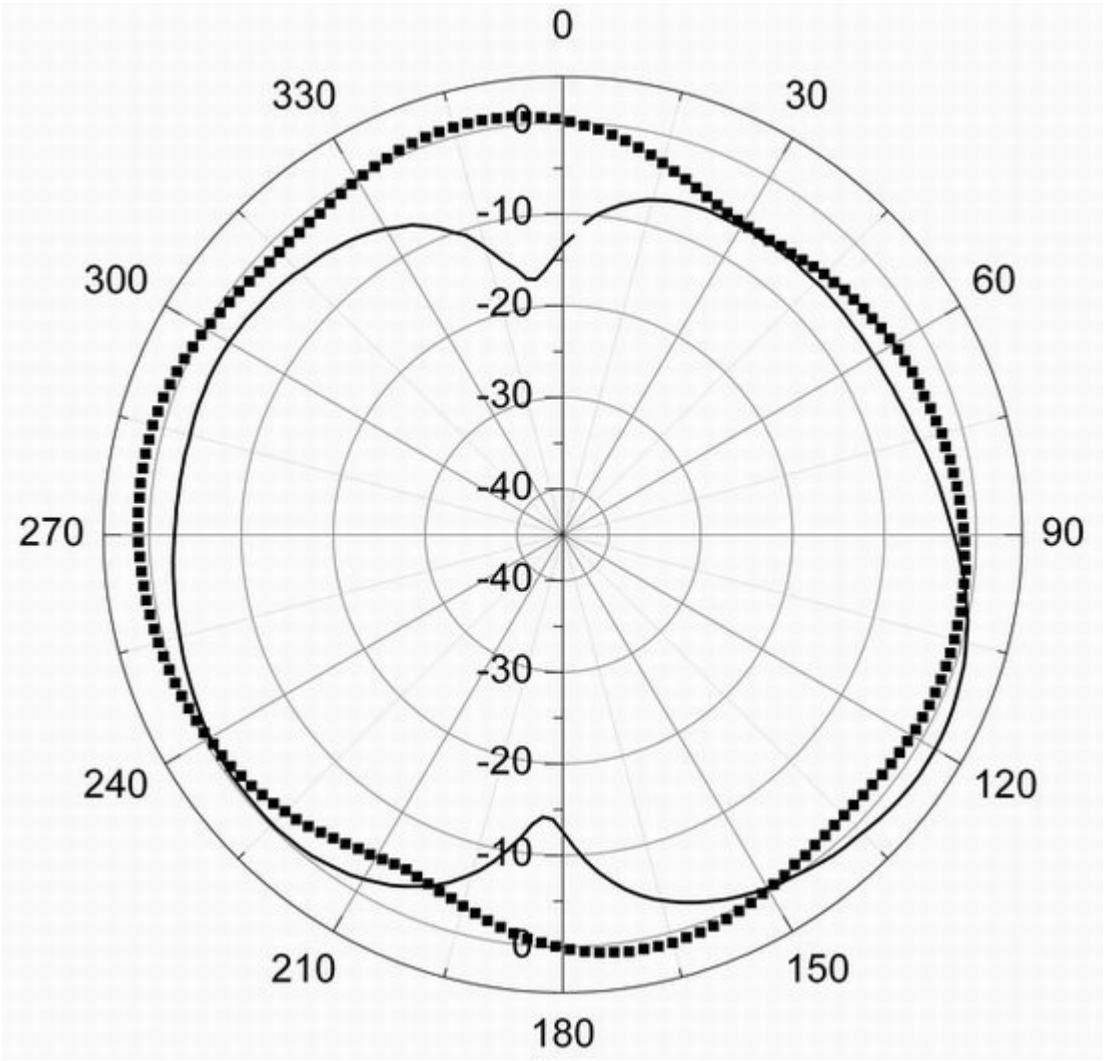


B. S_{11} (Smith chart)



2.4 Radiation Characteristic (ALA621C2)

- Bluetooth matching on the reference test board



- Measurement Setup

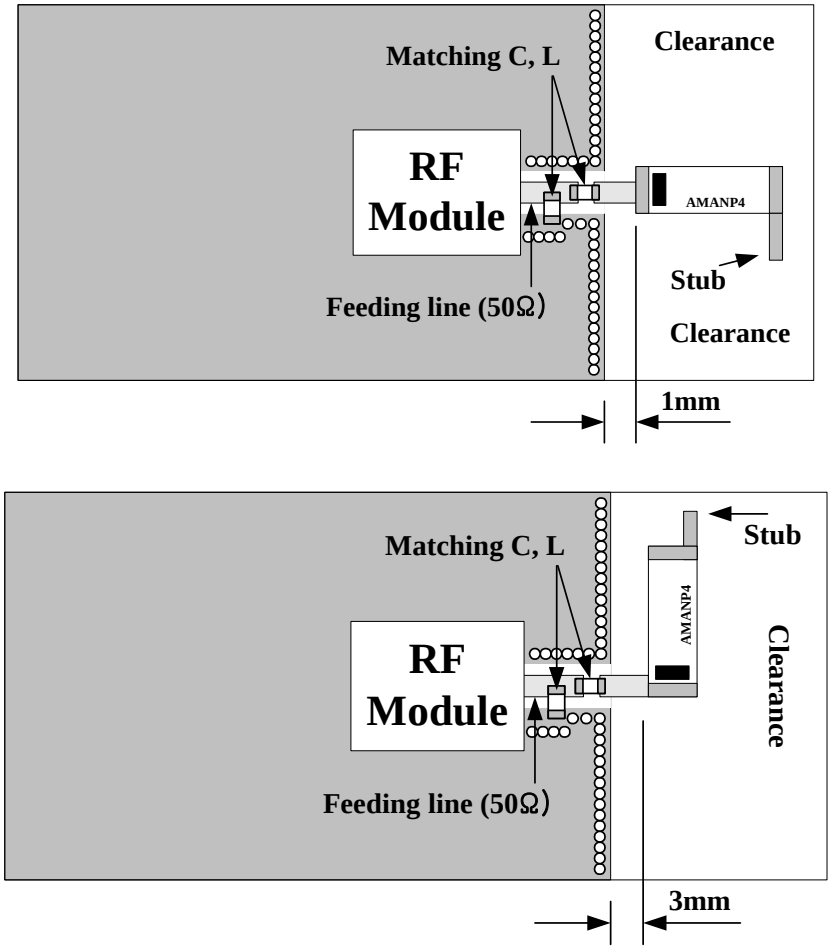
  - 8x4x4 Anechoic Chamber
  - Matching on the standard test board
  - Temp. : 25℃ / Humidity : 50~55%

- Measurement Result (@2.45GHz)

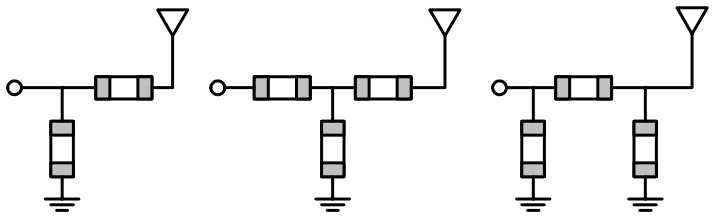
	Avg. (dBi)	Min. (dBi)	Max. (dBi)
Azimuth	-1.30	-5.87	1.29
Elevation	-4.29	-16.98	1.84

3. SUGGESTED LAYOUT & MATCHING CIRCUIT

3.1 Layout (recommended only)

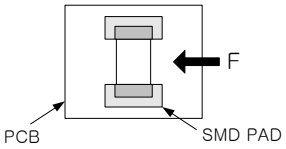
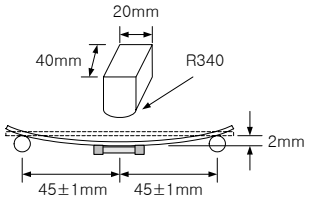
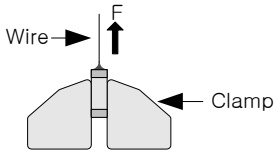
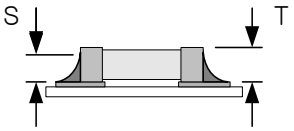


3.2 Matching Circuit (recommended only)



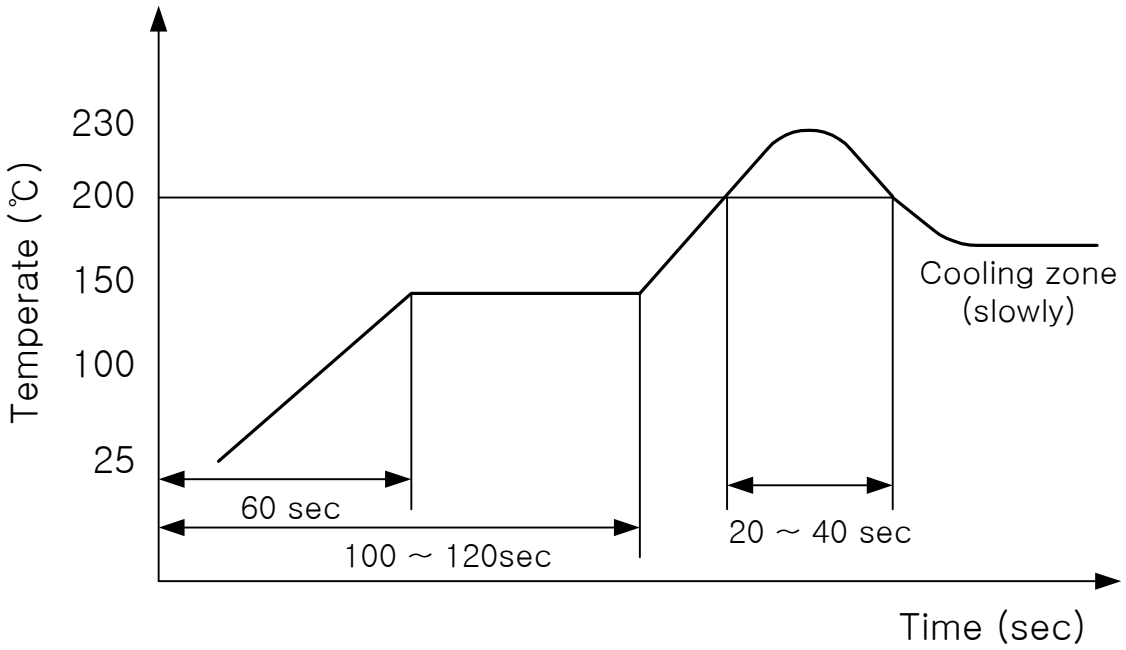
For usable matching, the **ground stability** must be guaranteed with **sufficient via holes** and the **case effects** should be considered. Finally, using one or more lumped chip elements and a tuning stub are recommended for better results.

4. RELIABILITY TEST

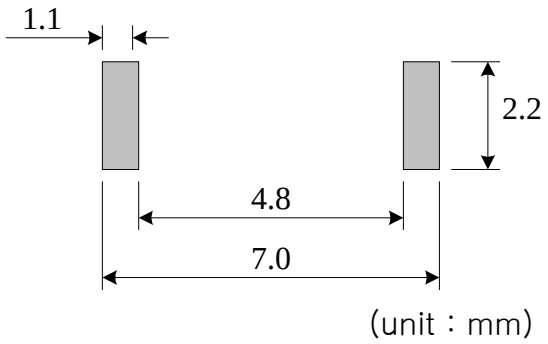
No	ITEM	TEST CONDITION	TEST REQUIREMENTS
1	Adhesive Strength of Termination	1. Applied force on SMD chip till detached point from PCB. 	1. No mechanical damage by forces applied on the right. 2. Strength (F) > 5 kgf
2	Bending Strength	1. Warp : 2 mm 2. Speed : 0.5 mm/sec 3. Duration : 5 sec. 	1. No mechanical damage.
3	Tensile Strength	1. Wire : 0.6~0.8 tined Cu wire 	1. No mechanical damage by forces applied on the right. 2. Strength (F) > 5 kgf
4	Solderability (Reflow Soldering)	1. Preheat temperature : 160 ± 10℃ 2. Soldering temperature : 230 ± 5℃ 3. Soldering time : 10 sec max. 	1. More than 40% of the terminal electrode shall be covered with new solder. (S ≥ 0.4T)
5	Thermal Shock (Temperature Cycle)	1. 1 cycle / step 1 : -40 ± 3℃, 30 min step 2 : +125 ± 3℃, 30 min 2. Number of cycle : 30 3. Measure after left for 48 hrs min. at room temperature ※ Use reference test board	1. No visual damage 2. $\Delta f_C < 1.5$ % ($\Delta f_C = \|f_{Ci} - f_{Cf}\| / f_{Ci}$) f_{Ci} : center frequency of initial condition (room temp) f_{Cf} : center frequency after being cycled
6	High Temperature Resistance	1. Temperature : +125 ± 5℃ 2. Time : 1000 ± 24 hrs 3. Measure f_C after left for 24 hrs min. at room temperature ※ Use reference test board	1. No visual damage 2. $\Delta f_C < 1.5$ %
7	Low Temperature Resistance	1. Temperature : -40 ± 5℃ 2. Time : 1000 ± 24 hrs 3. Measure f_C after left for 48 hrs min. at room temperature ※ Use reference test board	1. No visual damage 2. $\Delta f_C < 1.5$ %
8	Humidity (Steady Condition)	1. Humidity : 90 ~ 95 % RH 1. Temperature : +40 ± 3℃ 2. Time : 500 ± 12 hrs 3. Measure f_C after left for 48 hrs min. at room temperature ※ Use reference test board	1. No visual damage 2. $\Delta f_C < 1.5$ %

5. SOLDERING RECOMMENDATIOS

5.1 Reflow Soldering Profile

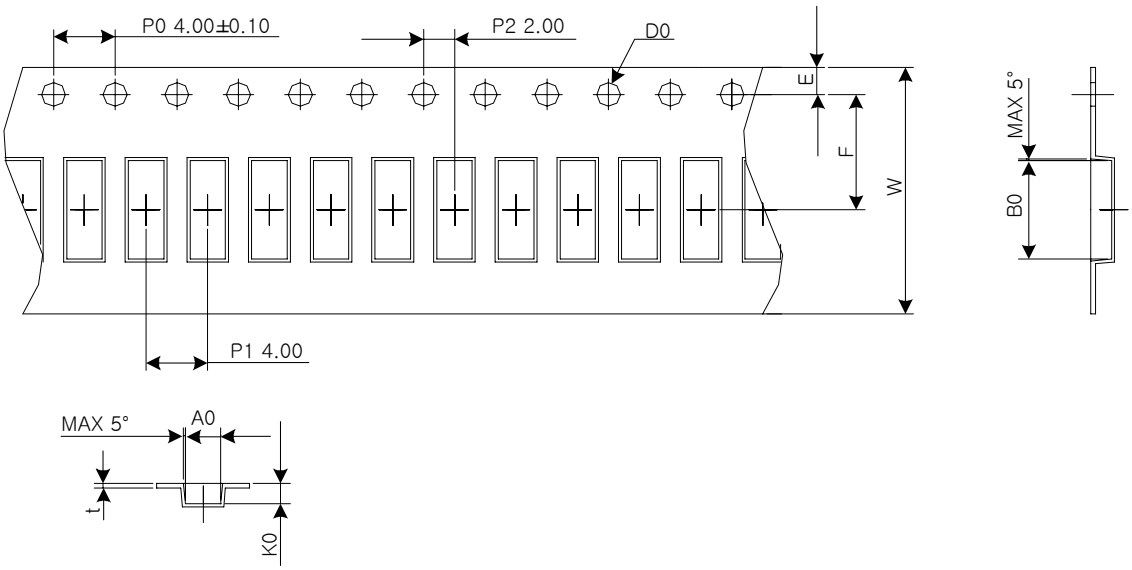


5.2 Soldering Land Pattern



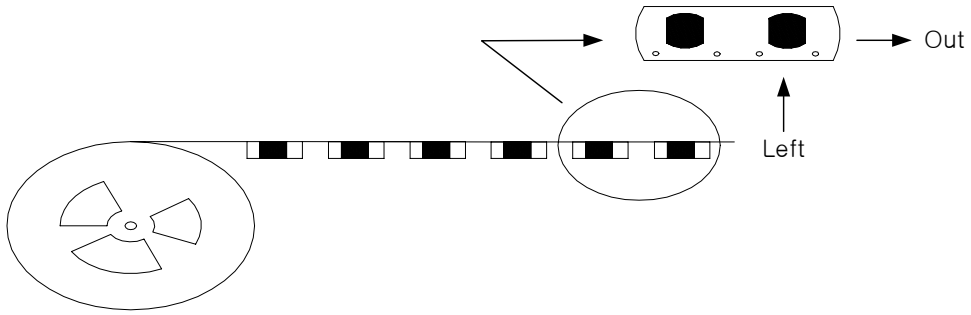
6. PACKING

6.1 Tape Dimension (unit : mm)



A0	2.30 ± 0.10	E	1.75 ± 0.10
B0	6.40 ± 0.10	F	7.50
K0	1.35 ± 0.10	t	0.30 ± 0.05
D0	1.55 ± 0.05	W	16.00 ± 0.30

6.2 Taping style



6.3 Packing quantity

1,000 pcs /Reel