

APPROVAL SHEET

Multilayer Chip Antenna

Part No. : ALA931C4

Utas			

AMOTECH	Written	Checked	Approved
			

2008. 04. 24

AMOTECH Co., Ltd.

Revision Record

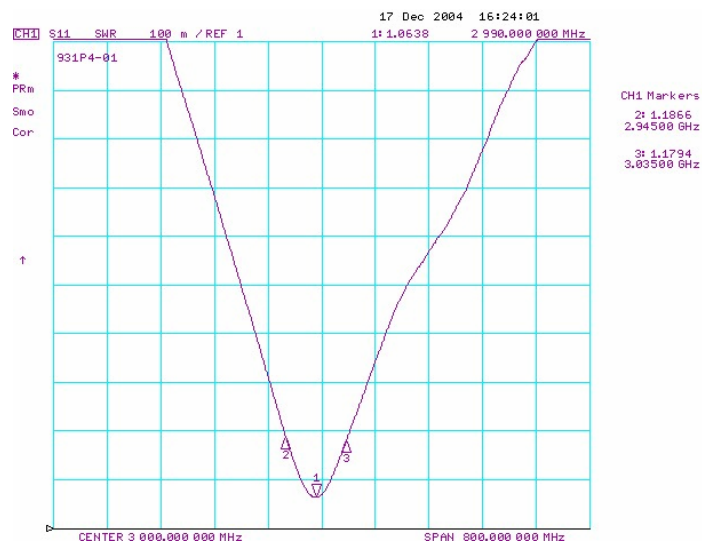
data	Title	Content	Page

Content

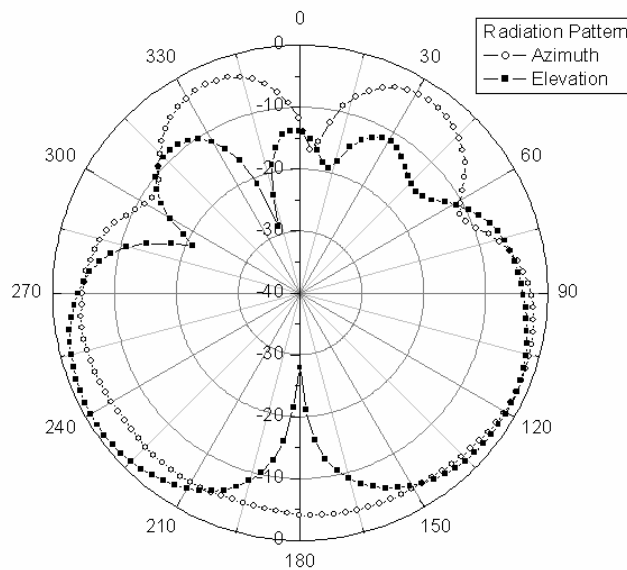
1. Electrical Specification
2. Mechanical Specification
3. Appearance & Dimension
4. Soldering Recommendation
5. Packing
6. Reliability Test
7. Storage Condition
8. Manufacture & Place

1.Electrical Specification

구분	ITEM	Spec	Remark
1	VSWR	Max. 2.5 : 1 @ 2990±45 MHz	
2	Radiation Gain	Max. 0dBi	
3	Radiation Pattern	Omni-directional	
4	Impedance	nominal 50	Ω



[VSWR : measured data on manual jig]

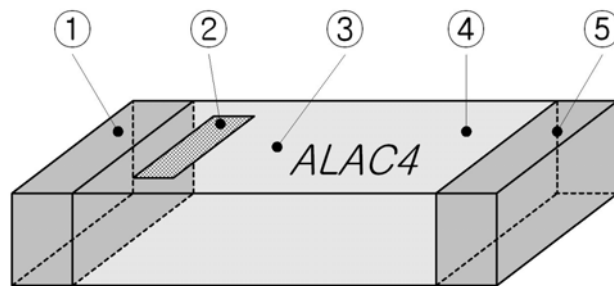


[Radiation Pattern : measured data after matching on Bluetooth range]

2. Mechanical Specification

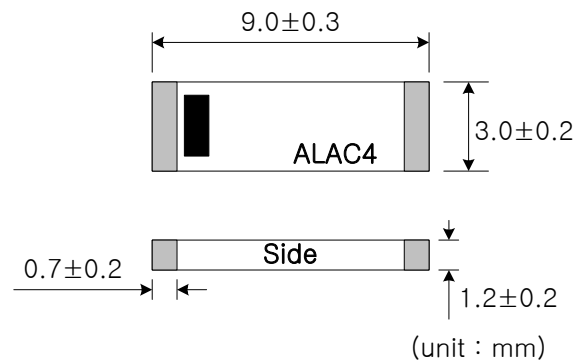
	ITME	Spec	Remark
1	Internal Electrode	Ag	
2	External Electrode	Ag/Ni/Sn	
3	Dimension (L x W x D)	9.0 x 3.0 x 1.2	mm
4	Unit Weight	97 ± 9	mg
5	Operating Temperature	-35 ~ +85	℃
6	Storage Temperature	-55 ~ +125	℃

3. Appearance & Dimension



[Appearance]

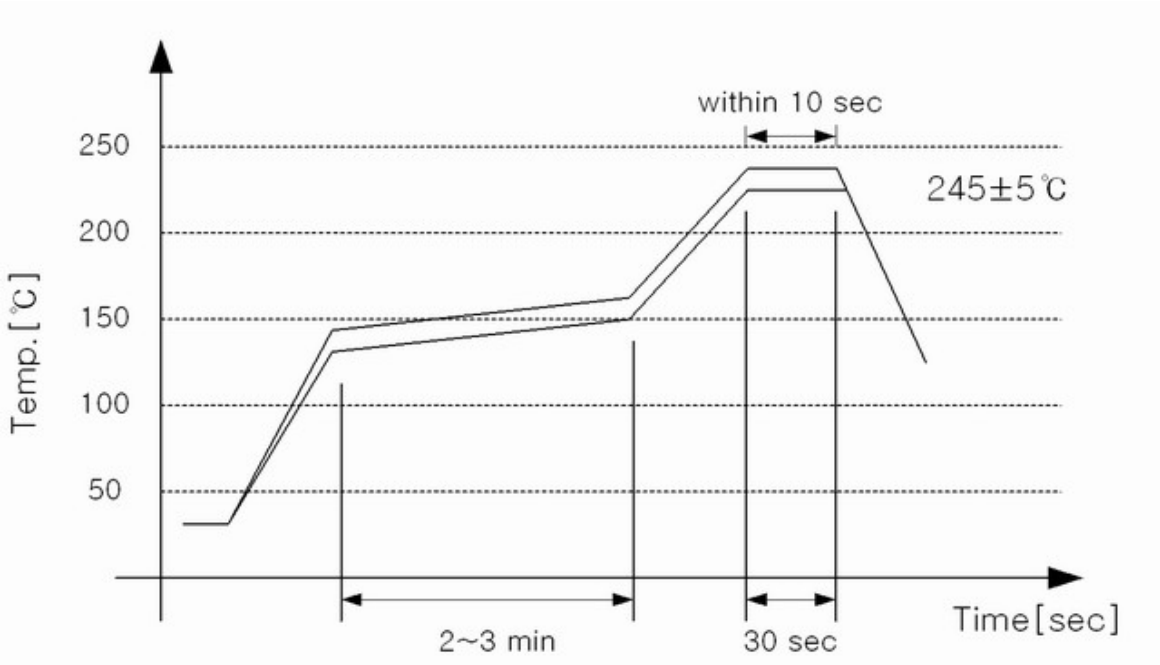
구분	명칭	역할
1	External Electrode	Soldering, Input Port
2	Direction index	Indication of Input Port
3	Model Name	—
4	Ceramic Body	—
5	External Electrode	Soldering



[Dimension]

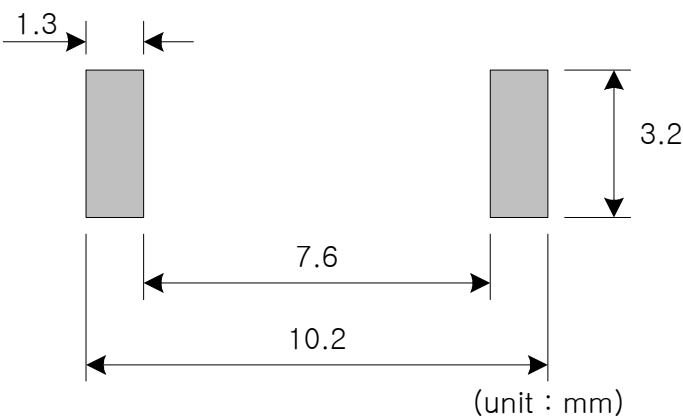
4. Soldering Recommendation

4.1 Soldering Profile



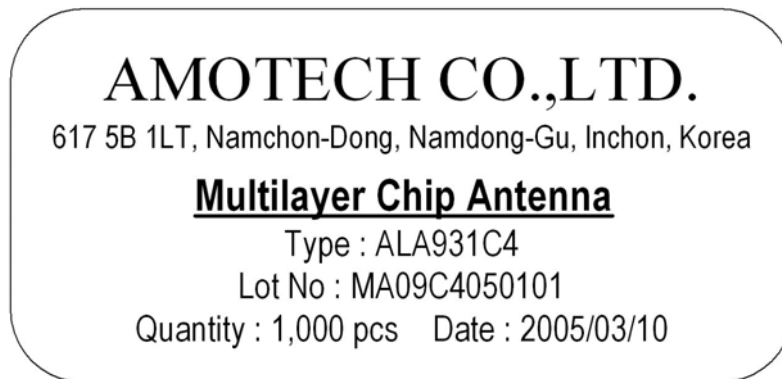
[Reflow profile : Pb-free condition]

4.2 Soldering Pad Size



[Soldering Pad Size]

5.3 Description of Packing Label



AMOTECH CO., LTD.

Name of Company

617 5B 1LT, Namchon-Dong, Namdong-Gu, Inchon, Korea

Address of Manufacture

Multilayer Chip Antenna

Name of Component

Type : ALA931C4

ALA : Amotech LTCC Antenna
931 : Chip Size
C : Version
4 : Frequency type

Lot No : MA09C4050101

MA : Mass-product Antenna
09 : Chip Size
C5 : Version & Frequency type
0501 : Date
01 : Order of Production

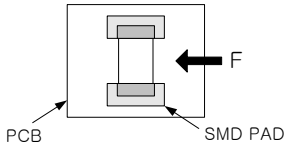
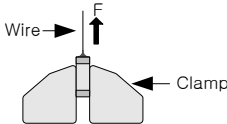
Quantity : 1,000 pcs

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Date : 2005/03/10

Shipment : 2004/11/20

6. Reliability Test

No	ITEM	TEST CONDITION	TEST REQUIREMENTS
1	Adhesive Strength of Termination	<p>1. Applied force on SMD chip till detached point from PCB.</p> 	<p>1. No mechanical damage by forces applied on the right. 2. Strength (F) > 10 kgf</p>
2	Tensile Strength	<p>1. Wire : 0.6~0.8 tined Cu wire</p> 	<p>1. No mechanical damage by forces applied on the right. 2. Strength (F) > 4 kgf</p>
3	Thermal Shock (Temperature Cycle)	<p>1. 1 cycle / step 1 : $-40 \pm 3^{\circ}\text{C}$, 30 min step 2 : $+125 \pm 3^{\circ}\text{C}$, 30 min 2. Number of cycle : 30 3. Measure after left for 48 hrs min. at room temperature ※ Use reference test board</p>	<p>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</p>
4	High Temperature Resistance	<p>1. Temperature : $+125 \pm 5^{\circ}\text{C}$ 2. Time : 1000 ± 24 hrs 3. Measure f_c after left for 48 hrs min. at room temperature ※ Use reference test board</p>	<p>1. No visual damage 2. $\Delta f_c < 1.5 \%$</p>
5	Low Temperature Resistance	<p>1. Temperature : $-40 \pm 5^{\circ}\text{C}$ 2. Time : 1000 ± 24 hrs 3. Measure f_c after left for 48 hrs min. at room temperature ※ Use reference test board</p>	<p>1. No visual damage 2. $\Delta f_c < 1.5 \%$</p>
6	High Temp. & Humidity (Steady Condition)	<p>1. Humidity : 85 % RH 1. Temperature : $+85 \pm 3^{\circ}\text{C}$ 2. Time : 1000 ± 24 hrs 3. Measure f_c after left for 48 hrs min. at room temperature ※ Use reference test board</p>	<p>1. No visual damage 2. $\Delta f_c < 1.5 \%$</p>

7. Storage Condition

- Storage environment must be at an ambient temperature of 15~35℃ and an ambient humidity of 45~75 % RH. (MSL Level 2)
- Chip antenna can experience degradation of termination solderability when subjected to high temperature of humidity, or if exposed to sulfur or chlorine gases.
- Avoid mechanical shock (ex. falling) to the chip antenna to prevent mechanical cracking inside of the ceramic dielectric due to its own weight.

8. Manufacture & Place

8.1 Manufacturer

Amotech Co., Ltd.

8.2 Manufacturing place

5B 1L, Namdong Industrial complex, 617 Namchondong, Namdonggu, Incheon, Korea