

VGAP-CLB-BS-A1 Specification

1. Features and Application :

- (1) This product is manufactured in ISO/TS16949 certified production factory.
- (2) This product is qualified according to AEC-Q200.
- (3) This product is for 2.4/5 GHz Dual Band WiFi, 802.11 b/g/n, Zigbee, Bluetooth,...

2. Explanation of Part Number :

VGAP - $\frac{\mathbf{C}}{\mathbf{(1)}}$ $\frac{\mathbf{LB}}{\mathbf{(2)}}$ - $\frac{\mathbf{B}}{\mathbf{(3)}}$ $\frac{\mathbf{S}}{\mathbf{(4)}}$ - $\frac{\mathbf{A1}}{\mathbf{(5)}}$

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : 2.4/5 GHz Dual-Band
- (3) Size Code : 3.2*1.6 mm (Length * Width)
- (4) Special Code : RoHS Compliant
- (5) Design Revision Code : Rev.1

3. Electrical Specification :

Item	Specification	
Frequency Band	2400 ~ 2500 MHz	5000 ~ 6000 MHz
Polarization	Linear	
Impedance	50 ohm Typ.	
VSWR	Less than 3.0	Less than 3.5
*Peak Gain	2.7 dBi Typ.	3.4 dBi Typ.
*Peak Efficiency	62.4 % Typ.	69.3 % Typ.

* Test condition : Test board size 80*40 mm
Matching circuit may be required

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : -----

UNIT : mm

DRAWN BY : 林立翔

CHECKED BY : 林亨倫

DESIGNED BY : 林立翔

APPROVED BY : 蔡凱翔

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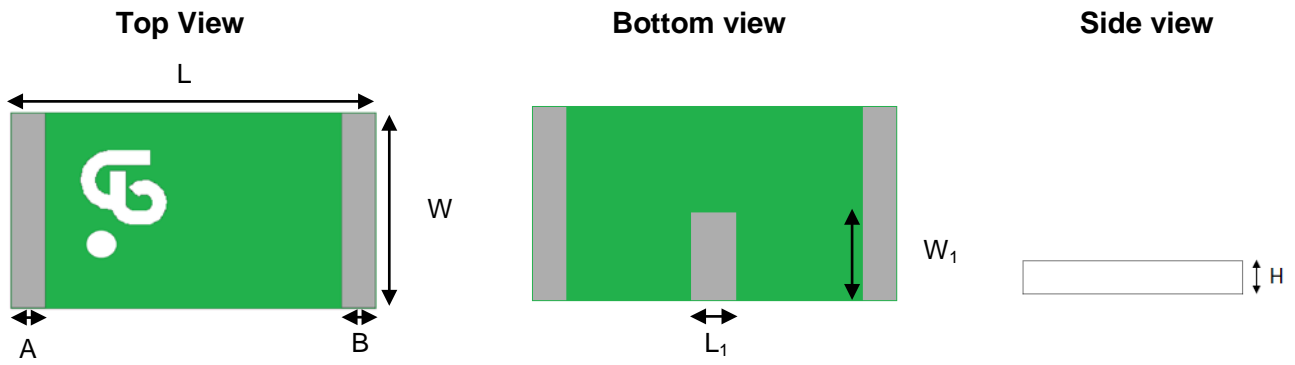
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4. Physical Dimension :



Marking is Green

L	3.20 ± 0.30
W	1.70 ± 0.30
H	0.50 ± 0.15
A	0.30 ± 0.25
B	0.30 ± 0.25
L1	1.60 ± 0.20
W1	0.62 ± 0.20

(Unit: mm)

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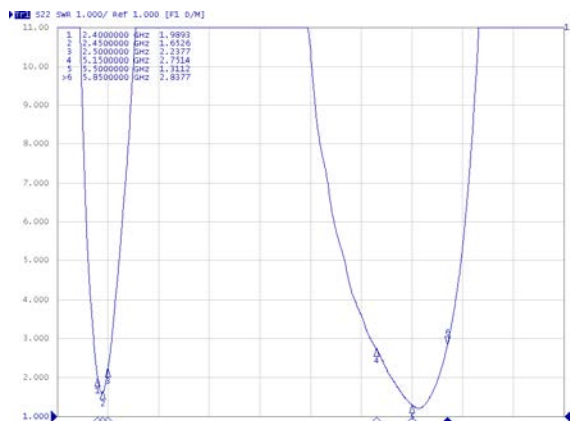
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6. Electrical Characteristics :

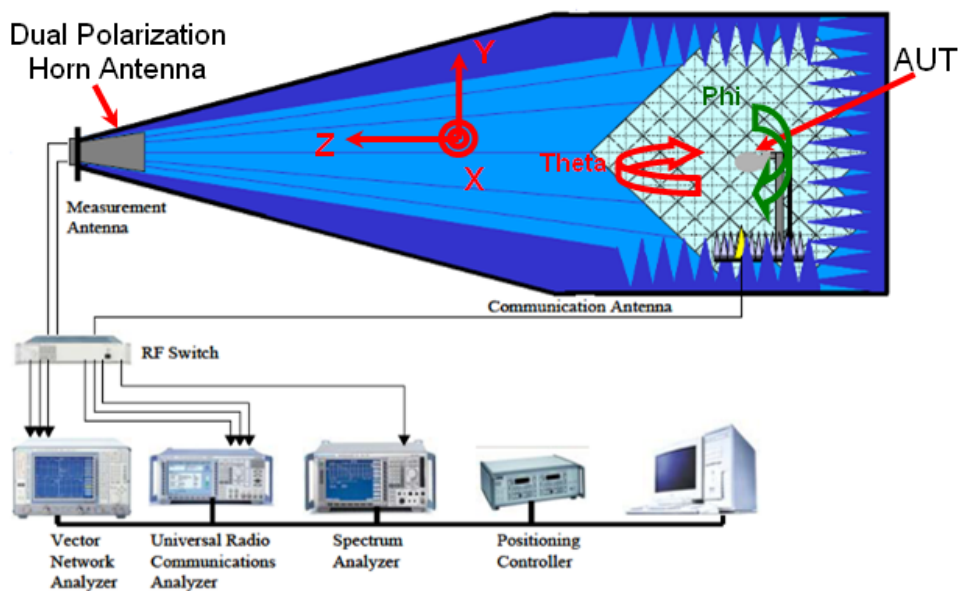
VSWR



Frequency (MHz)	VSWR
2400	2.0
2450	1.7
2500	2.2
5000	2.8
5500	1.3
6000	2.8

Radiation Pattern

The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



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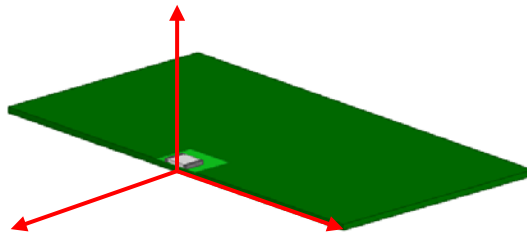
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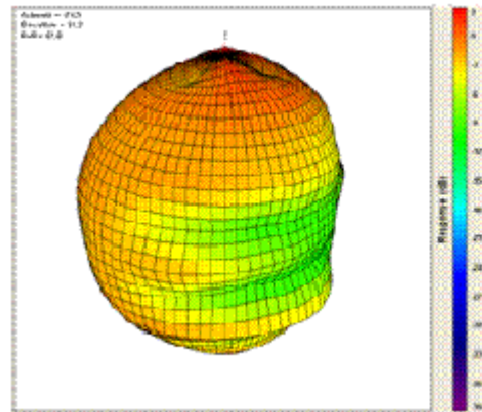
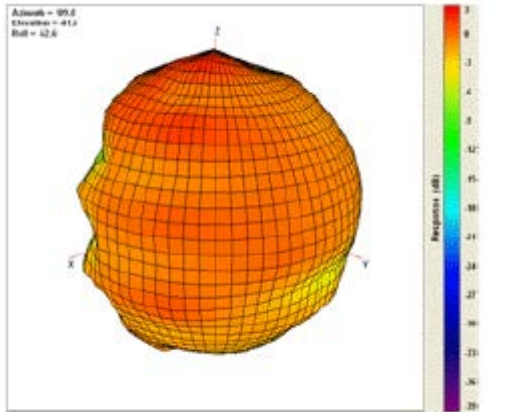
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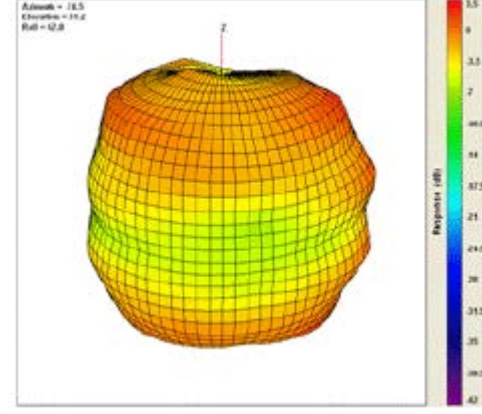
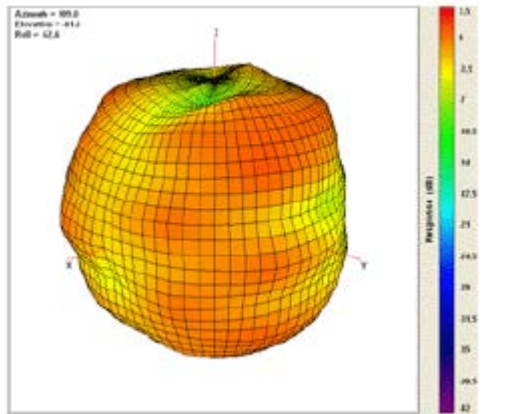
3D Gain Pattern



2450 MHz



5500 MHz



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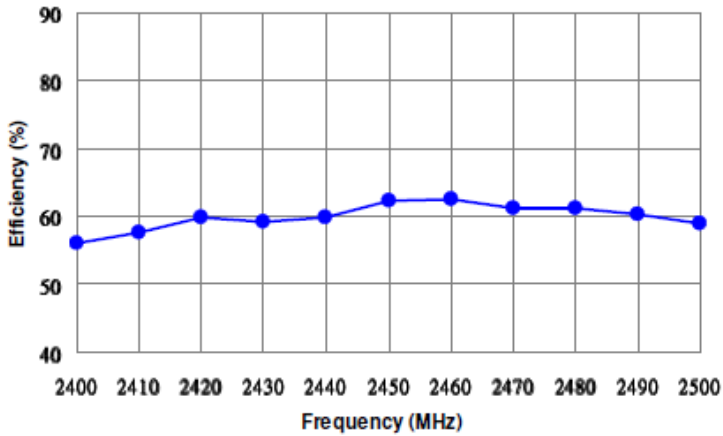
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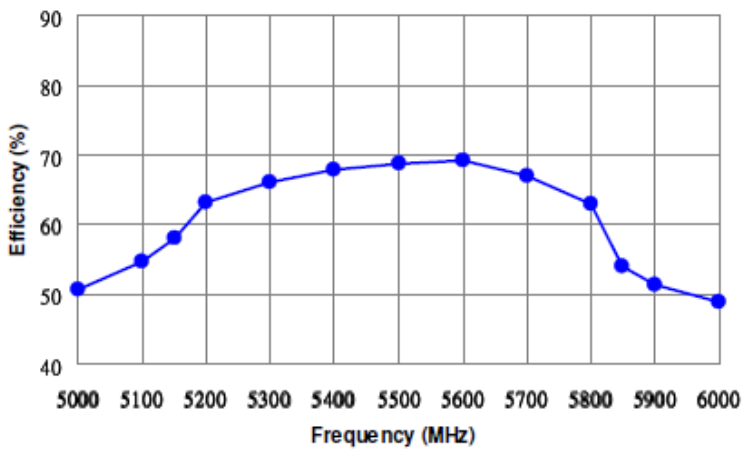
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Efficiency



Frequency (MHz)	Efficiency (%)
2400	57.8
2450	62.8
2500	59.0
5000	51.3
5500	68.8
6000	48.9



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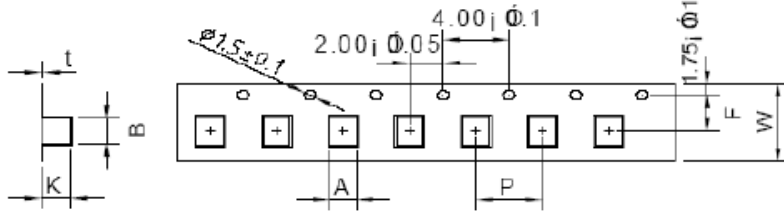
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7. Taping Package and Label Marking :

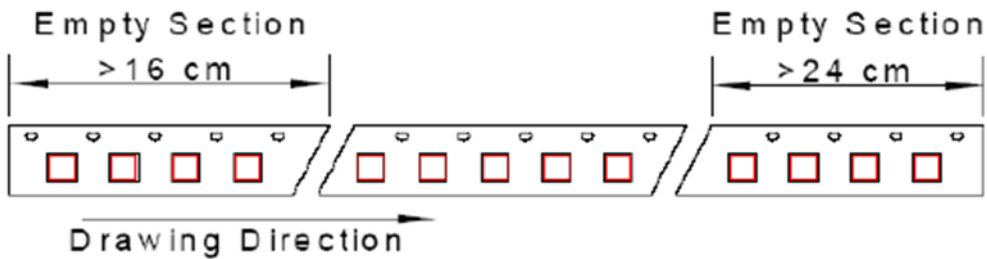
- (1) Quantity/Reel : 4000pcs/Reel T(Thickness of chip) ≤ 1.2
 (2) Plastic Tape

(Unit : mm)

Symbol	Spec.
W	8.00±0.1
A	2.0~2.2
B	3.50~3.60
K	Max. 1.40
t	0.22±0.05
F	3.50±0.1
P	4.00±0.1

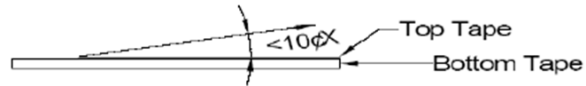


- (3) Tape packing



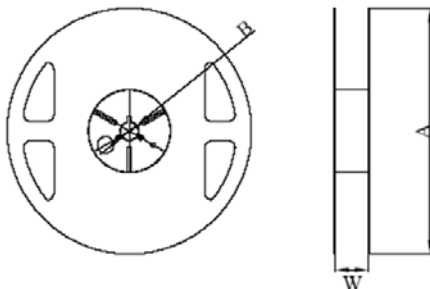
- (4) Cover Tape Reel Off Force

$$5g \cdot f \leq \text{Peel-Off Force} \leq 70g \cdot f$$



- (5) Reel dimensions

Reel Material: Polystyrene



W	A	B
8±0.5	178±0.5	13±0.5
12±0.5	178±0.5	13±0.5

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 ANGLES=±



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8. Environmental Characteristics :

This product is qualified according to AEC-Q200.

(1) Reliability Test

Item	Condition	Specification
High Temperature Storage	150°C , 1000hours	No Damaged
Temperature Cycling	-55°C 30min/125°C 30min , 1000 cycle	No Damaged
Biased Humidity	85°C 、85% RH , 1000hours	No Damaged
Resistance to Solvent	Add Aqueous wash chemical OKEMCLEAN for 5 min	No Damaged
Mechanical Shock	1500G 0.5 ms , X,Y,Z axis 3 time	No Damaged
Vibration	1. Frequency : 10 to 2000 Hz 2. 5g's for 20 min 3. Duration time : 2hr for each in X ,Y,Z	No Damaged
Resistance to Soldering Heat	Brush flux and put the board into solder bath 260°C , 10sec.	No Damaged
Solderability Test	1. 8 hours ± 15 min. steam conditioning 2. Put the sample on board by tape. 3. Brush flux and put the board into solder bath 260±5°C , 5±1 sec	No Damaged
Board Flex	2mm for 60sec.	No Damaged
Termination strength (SMD)	1.8Kgf , 60sec	No Damaged

(2) Storage condition

(a) At warehouse :

The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH.

The product should be used within 1 year from the time of delivery.

(b) On board :

The temperature should be within -40 ~ 85°C and humidity should be less than 85% RH.

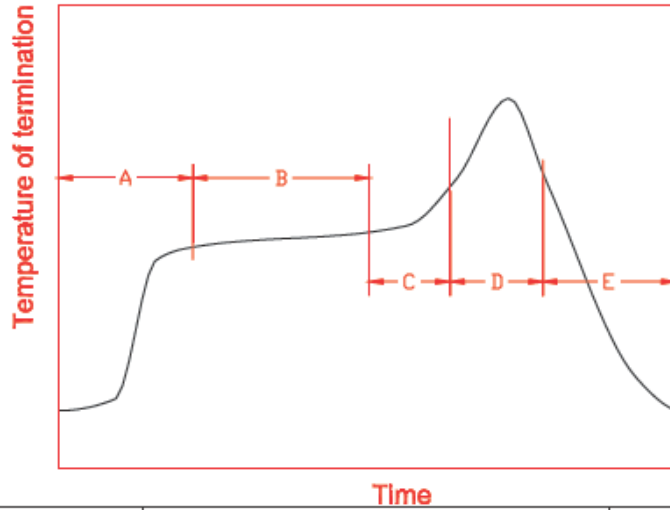
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SCALE : -----	UNIT : mm		
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(3) Operating temperature range

Operating temperature range : -40 ~ +125°C.

9. Recommended reflow soldering :

Reference : J-STD-020C



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C	50s~60s
		if 230°C	40s~50s
		if 240°C	30s~40s
		if 250°C	20s~40s
		if 260°C	20s~40s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

(1) Soldering gun procedure

Note the follows, in case of using solder gun for replacement.

- (a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- (b) The soldering gun tip shall not touch this product directly.

(2) Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.

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