

# CubIII 2.4GHz SMD Antenna

Part No. GA123432BL04

## Product Specification



Dimension: 12mmx3.4mmx3.2mm

### ➤ Applications

- Tablets
- Laptops
- Wireless dongles
- Wireless modules
- Sensors
- Automotive

### ➤ Features

- Designed for 2.4 GHz applications: Bluetooth, Wi-Fi (802.11b/g), ZigBee, Wimax(2.3GHz and 2.5GHz) and etc.
- High efficiency
- Linear Polarization
- Omni- Directional ( *PCB dimension dependent* )
- NO PCB ground clearance required
- Flexible placement on PCB edge
- SMD mounting
- Low Profile, miniature and light weight
- Tape and reel packaging
- RoHS Compliance

### ➤ Customer Services (Optional)

- EM Antenna Simulation for optimum placement of antenna on PCB.
- Lump Elements Matching for optimum antenna performance.
- Anechoic Chamber Measurement for antenna performance validation.

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## ➤ Specification

ELECTRICAL	
Frequency	2.4 ~ 2.5 GHz
S11	< -10dB
VSWR	< 1.9:1
Peak Gain	2.28 dBi
Polarization	Linear
Impedance	50 Ohms
Efficiency	70%
Radiation Pattern	Omni
MECHANICAL	
Dimension	12mm x 3.4mm x 3.2 mm
Weight	0.25g
ENVIROMENTAL	
Temperature Range	-25°C to +80°C
Humidity	65°C 95% RH

Note:  
Lump elements matching circuit might require for optimum performance,especially Wimax 2.3GHz band.

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● Performance with reference board (CUB\_RB5020T2)

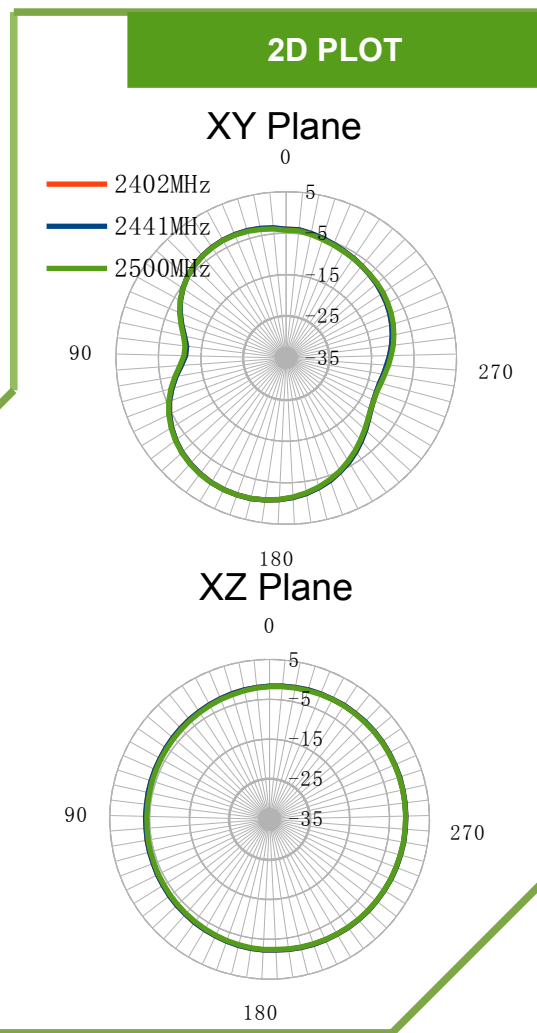
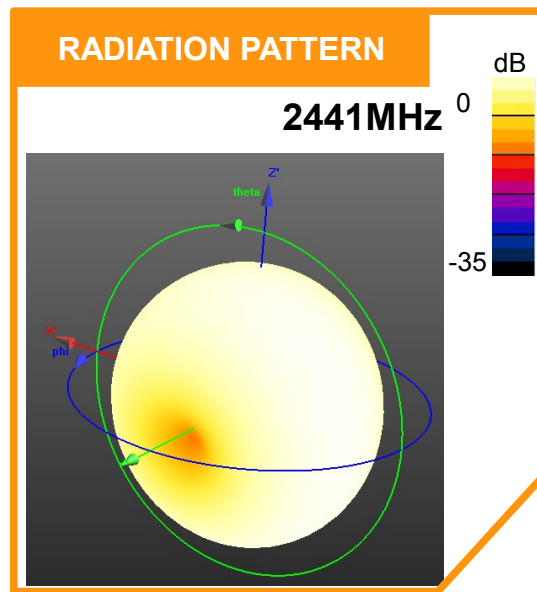
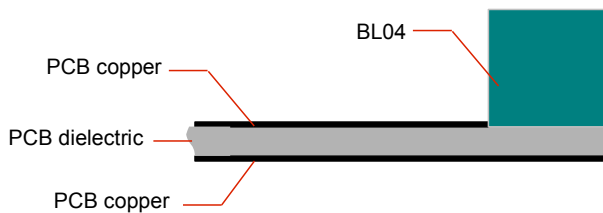
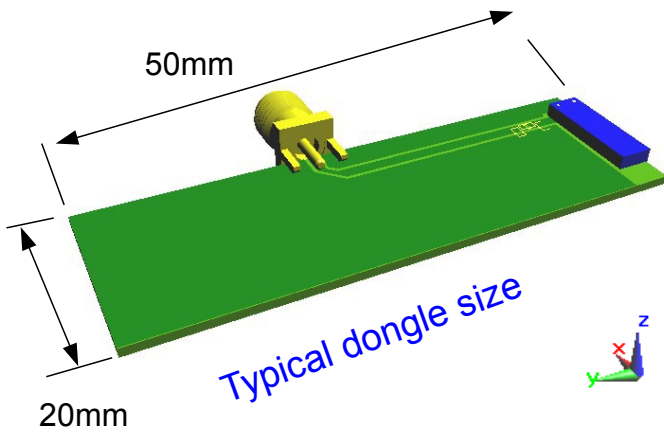


Figure 1, Antenna on reference board  
 Board Part NO.:CUB\_RB6020T1(1mm thickness)  
 Antenna Placement: Top  
 Ground Clearance: No Clearance

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● Performance with reference board (CUB\_RB5020T1)

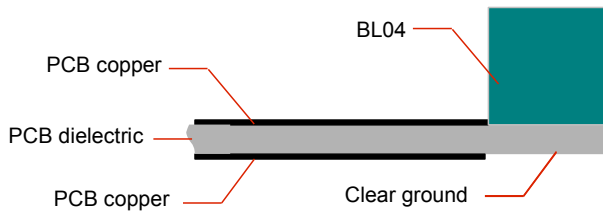
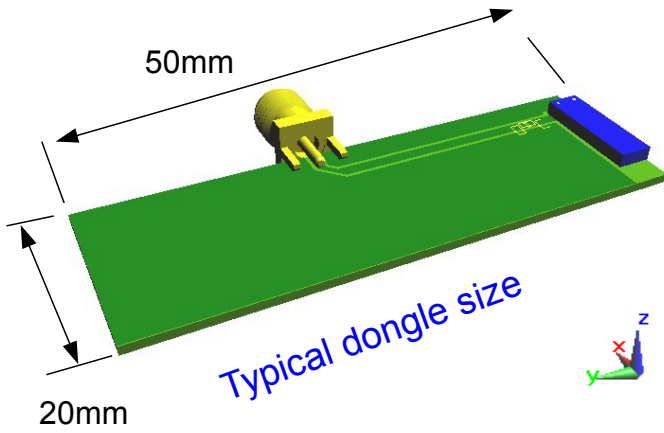
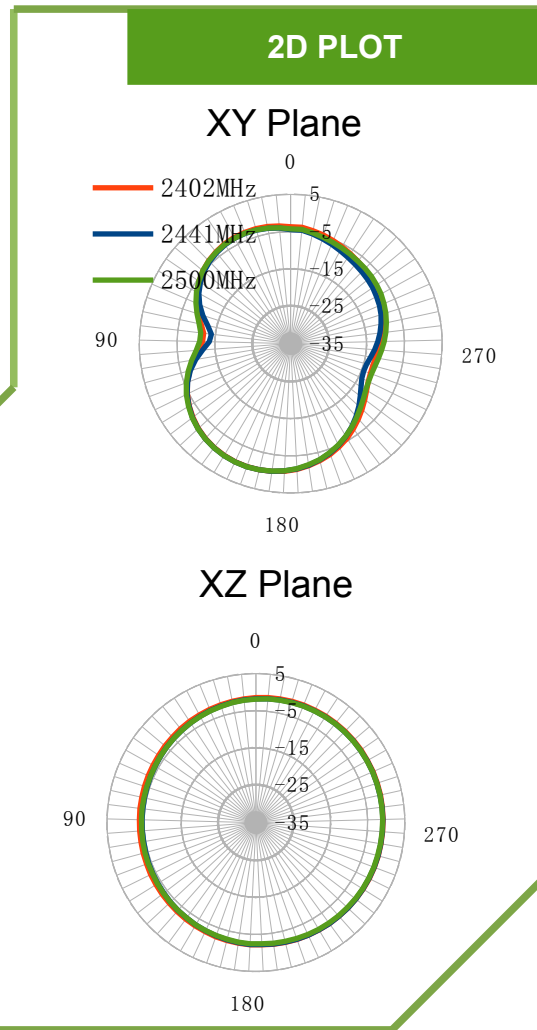
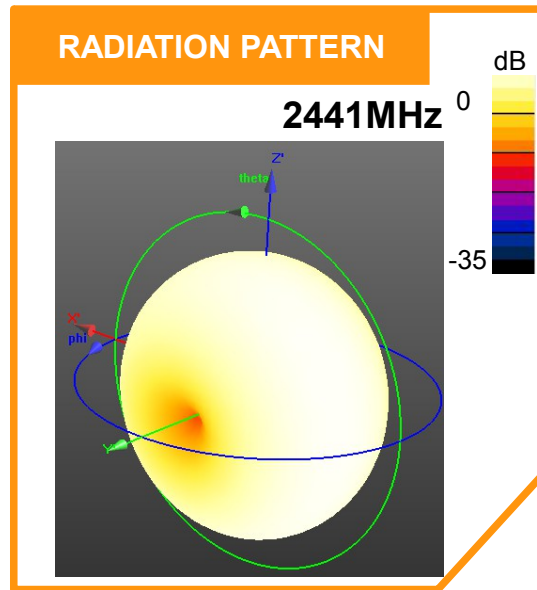


Figure 1, Antenna on reference board  
 Board Part NO.:CUB\_RB6020T1(1mm thickness)  
 Antenna Placement: Top  
 Ground Clearance: clear at antenna area



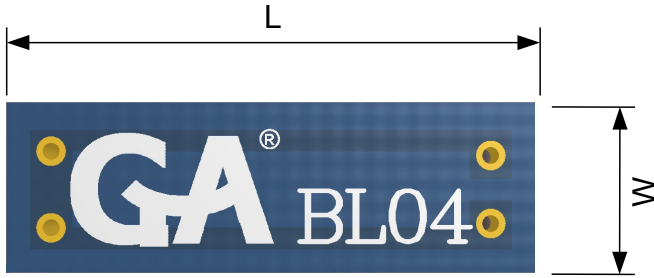
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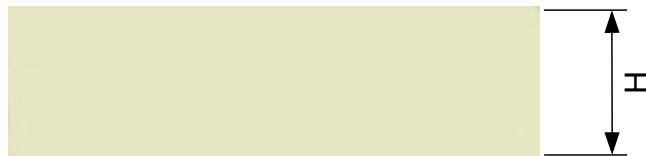
Part No. GA123432BL04

## ➤ Antenna Dimension

### ● Overview

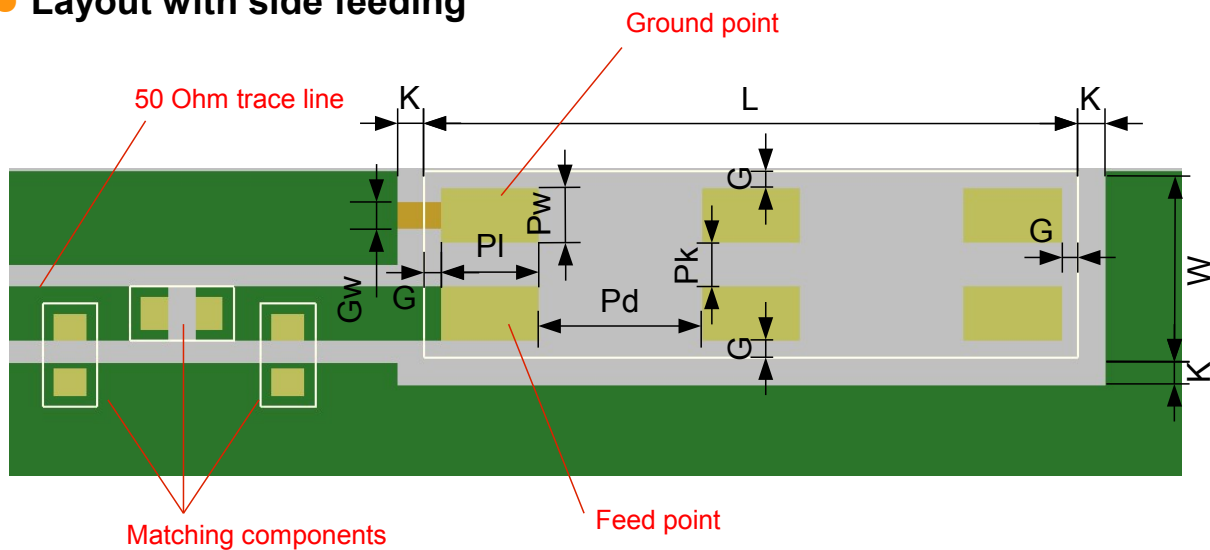


L	W	H
12	3.4	3.2



Unit : mm  
Tolerance: +/- 0.2mm

### ● Layout with side feeding



L	W	K	G	PI	Pw	Pd	Pk	Gw
12	3.4	0.5	0.3	1.8	1	3	0.8	0.5

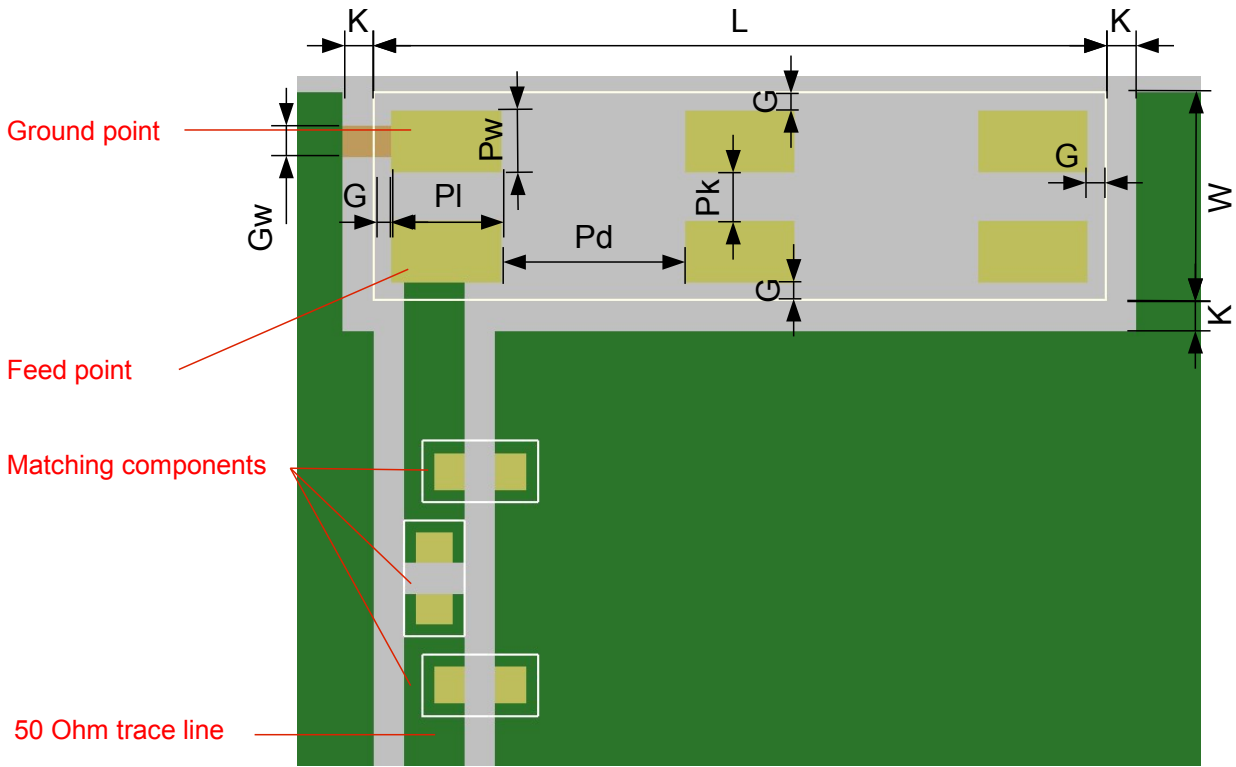
Unit : mm  
Tolerance: +/- 0.1mm

■ : PCB copper  
■ : PCB dielectric  
■ : Pads

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● Layout with bottom feeding



L	W	K	G	PI	Pw	Pd	Pk	Gw
12	3.4	0.5	0.3	1.8	1	3	0.8	0.5

Unit : mm  
Tolerance: +/- 0.1mm

■ : PCB copper  
■ : PCB dielectric  
■ : Pads

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## ➤ Antenna Implementation Guidelines

### ● Transmission Line

- a) Design the transmission line with characteristic impedance of 50 Ohm to feed the antenna.
- b) Minimize the length of transmission line to reduce insertion loss.

### ● Lump Elements Matching Circuit

Placement of antenna, PCB dimension and components within the vicinity of antenna will affect the antenna performance. Therefore, at least **THREE** lump elements matching circuit **MUST** be reserved for antenna optimization purpose during PCB layout process.

Green Antenna provides optional matching and anechoic chamber measurement services on request. Please contact [ga@green-antenna.com](mailto:ga@green-antenna.com) for further information.

### ● Antenna PCB Placement

To achieve optimum antenna performance, the antenna is recommended to place on the edge of PCB.

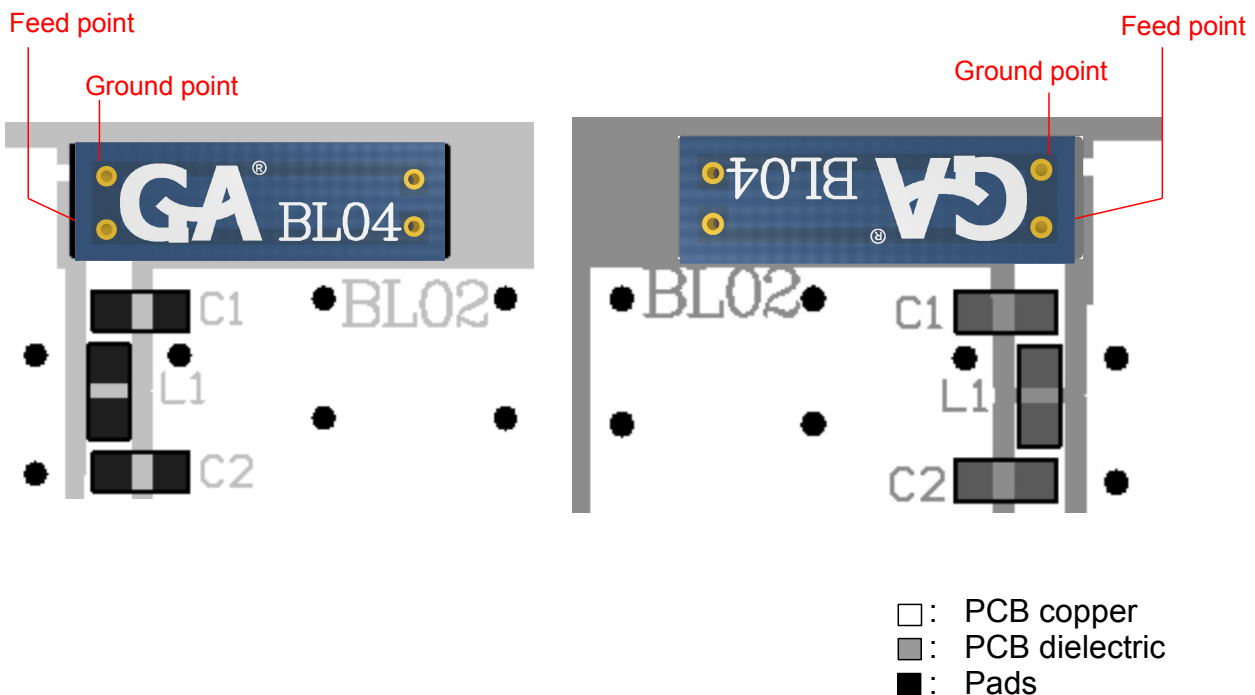
Green Antenna provides optional EM simulation service to locate the optimum placement of antenna on customer device or bare PCB board. Please contact [ga@green-antenna.com](mailto:ga@green-antenna.com) for further information.

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## ● Antenna Orientation Flexibility

CubIII Antenna can be implemented on the PCB either right side feeding or left side feeding by rotating it 180 degrees. Please implement the antenna placement and orientation as below drawings.



## ● Soldering and SMT Re-flow

The re-flow profile should be consider the following conditions:

- The maximum re-flow temperature should not exceed 240 °C
- The maximum temperature of 255 °C for less than 20 seconds is allowed during lead free soldering.

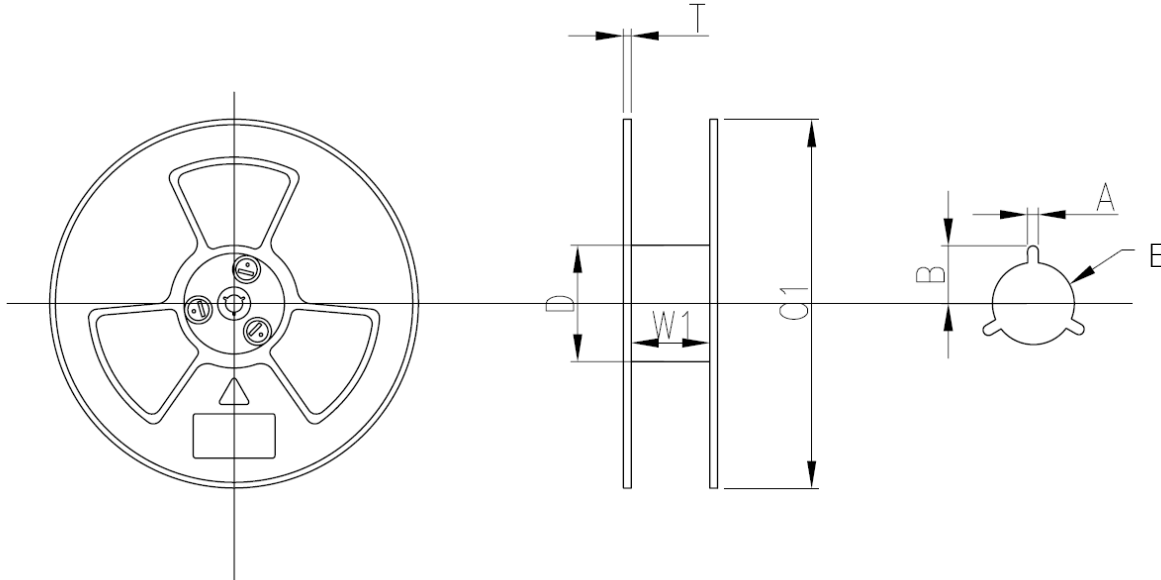


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## ➤ Reel Dimensions



W1	D	T	C1	A	B	E
24.4±2.0	99.5±2.0	2.2±0.3	330±1.0	2.3±0.3	10.75±0.3	13.0±0.5

Unit : mm

## ➤ Reel Label



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Description: CubIII  
Part Number: GA123432BL04  
Qty: 2000 pcs  
Date Code:  
Manufacturers code number: