

CubII 2.4GHz SMD Antenna

Part No. GA123408BL03

Product Specification



Dimension: 12mmx3.4mmx0.8mm

➤ Applications

- Smart phone
- 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 (70%)
- Linear Polarization
- Omni- Directional (*PCB dimension dependent*)
- Minimum PCB clearance
- 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 dBi
Polarization	Linear
Impedance	50 Ohms
Efficiency	70%
Radiation Pattern	Omni
MECHANICAL	
Dimension	12mm x 3.4mm x 0.8 mm
Weight	0.08g
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.

GA STANDARD ANTENNA

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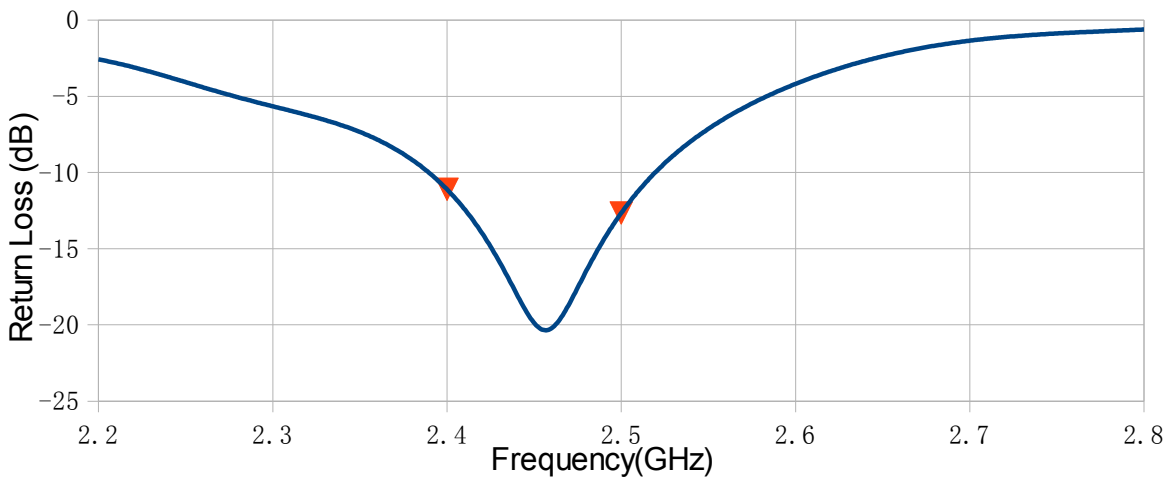


➤ Antenna Performance with CUB_RB6020T1 Reference Board

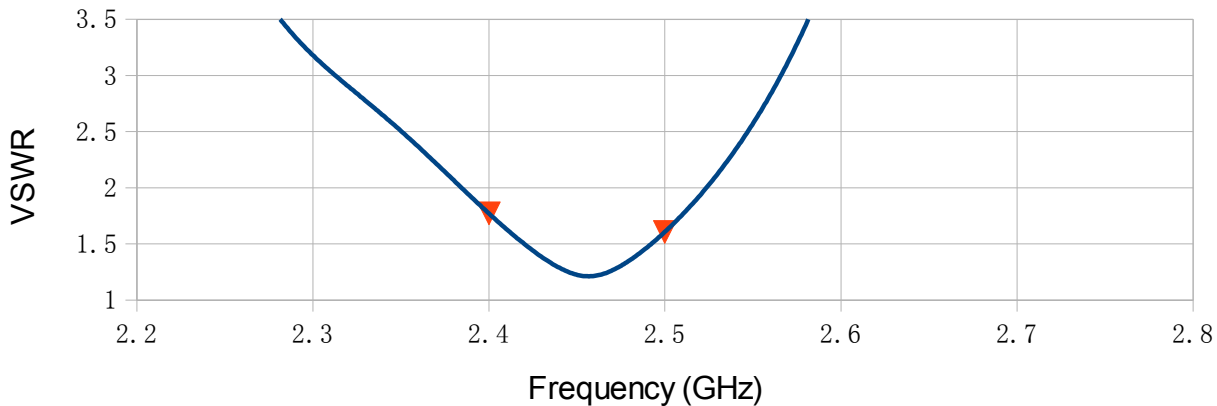
	Performance	Conditions
Peak Gain	2 dBi	All results measured from frequency range 2.4GHz to 2.5GHz on 60 x 20 mm reference board, Part NO.: CUB_RB6020T1
Average 3D Gain	-1.5 dBi	
*Average Efficiency	70%	
S11	< -10dB	
VSWR	< 1.9:1	

*antenna efficiency without loss of transmission line

● Return Loss with CUB_RB6020T1 Reference Board



● VSWR with CUB_RB6020T1 Reference Board



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● Performance with reference board (CUB_RB6020T1)

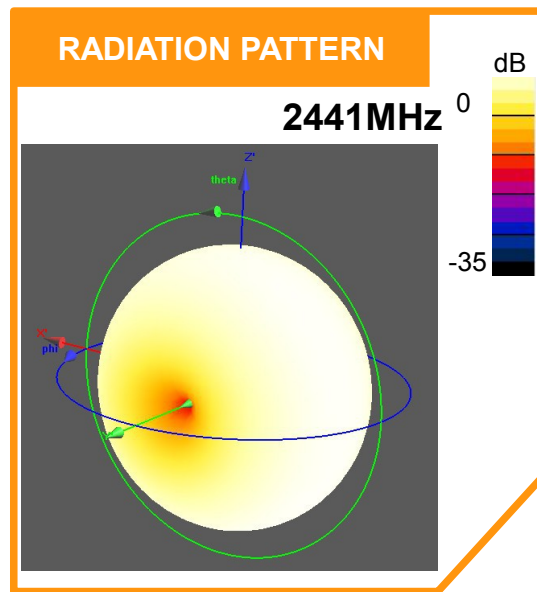
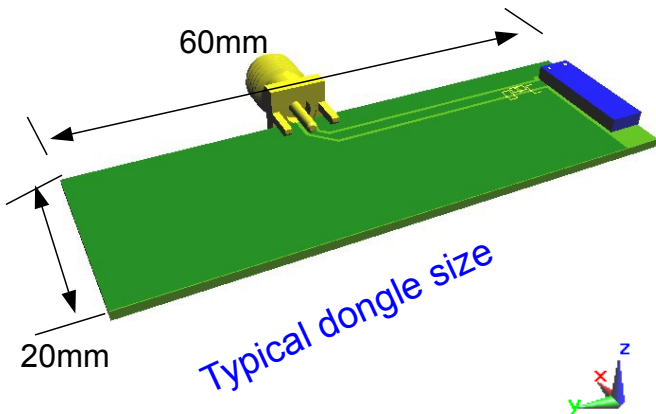
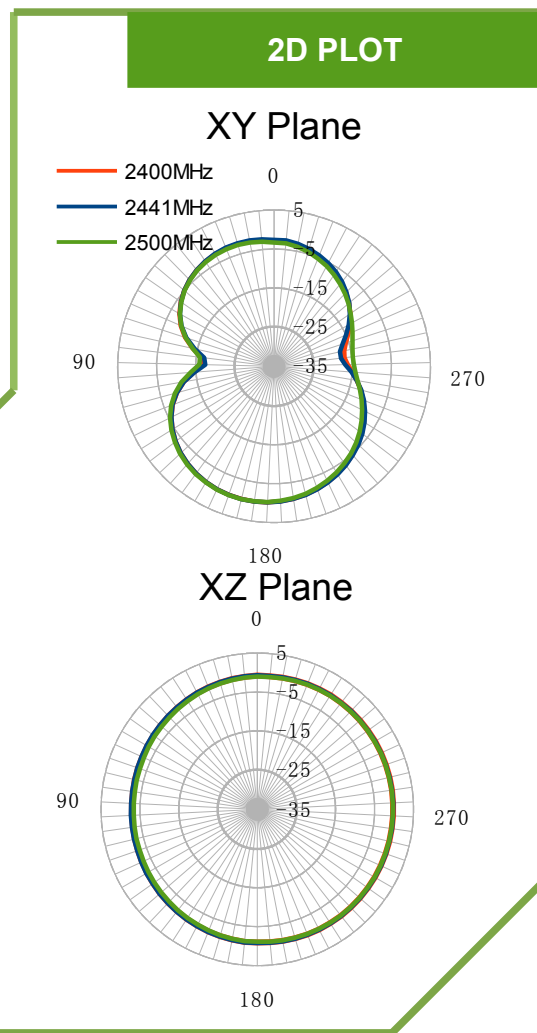


Figure 1, Antenna on reference board

Board Part NO.: CUB_RB6020T1

Antenna Placement: Top



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Antenna Dimension

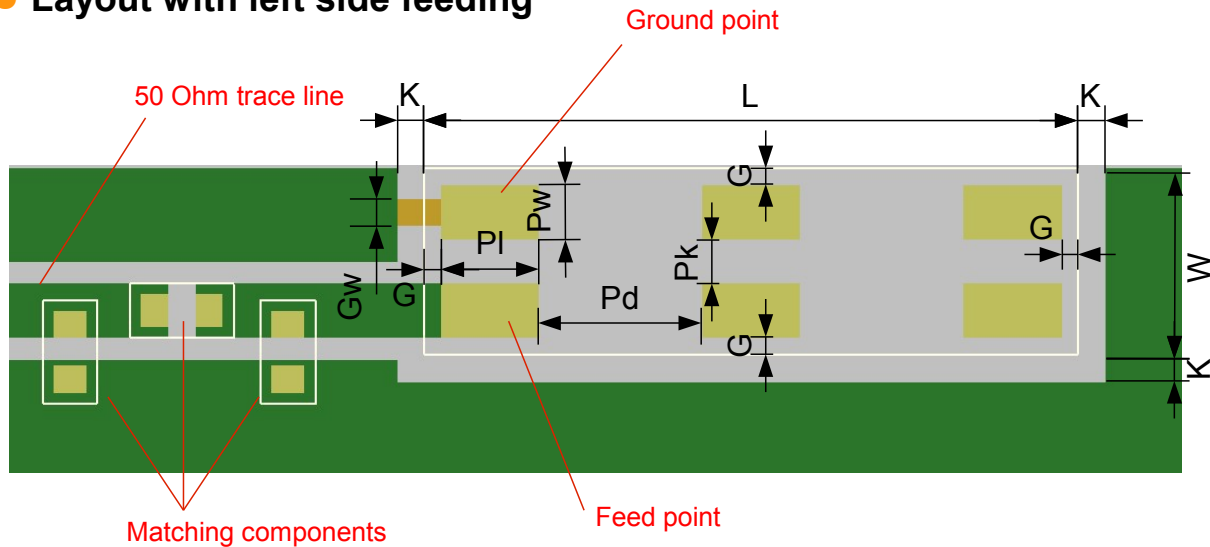
Overview



L	W	H
12±0.2	3.4±0.2	0.8±0.15

Unit : mm

Layout with left 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

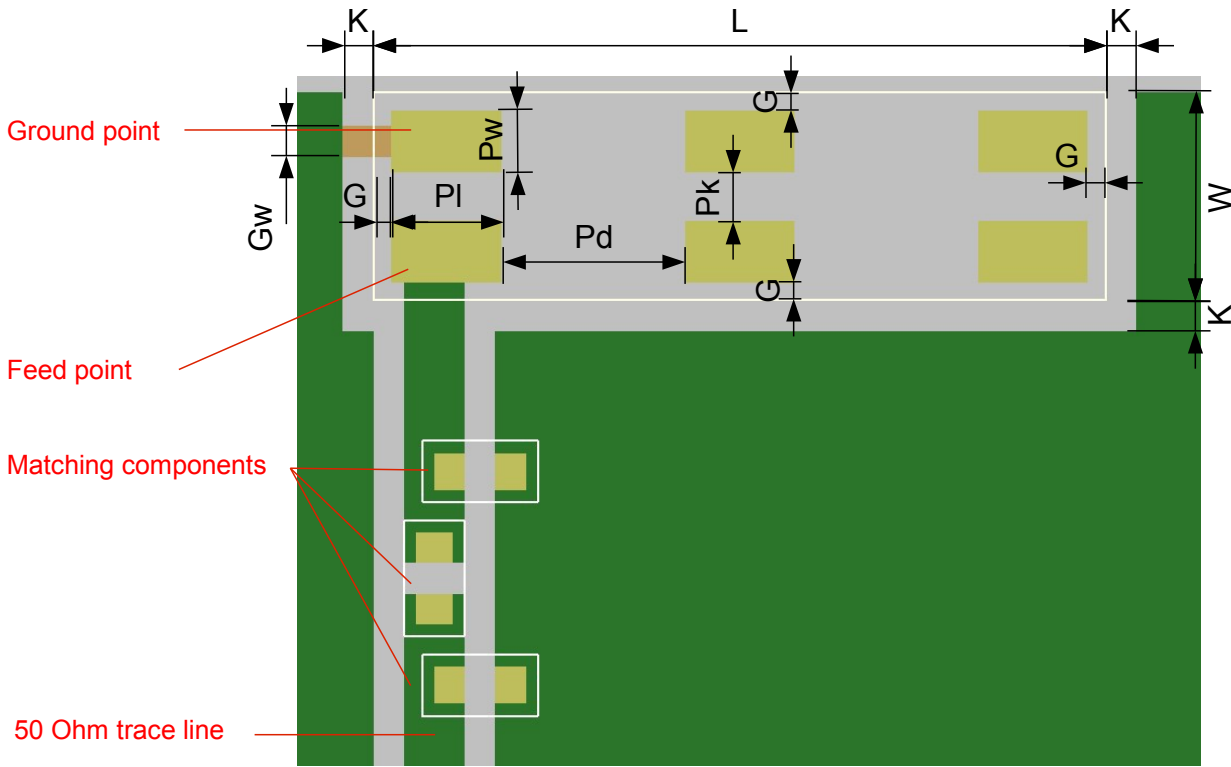
Unit : mm
Tolerance: +/- 0.1mm

■ : PCB copper
■ : PCB dielectric
■ : Pads

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● Layout with down 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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➤ 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 for further information.

● Antenna PCB Placement

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

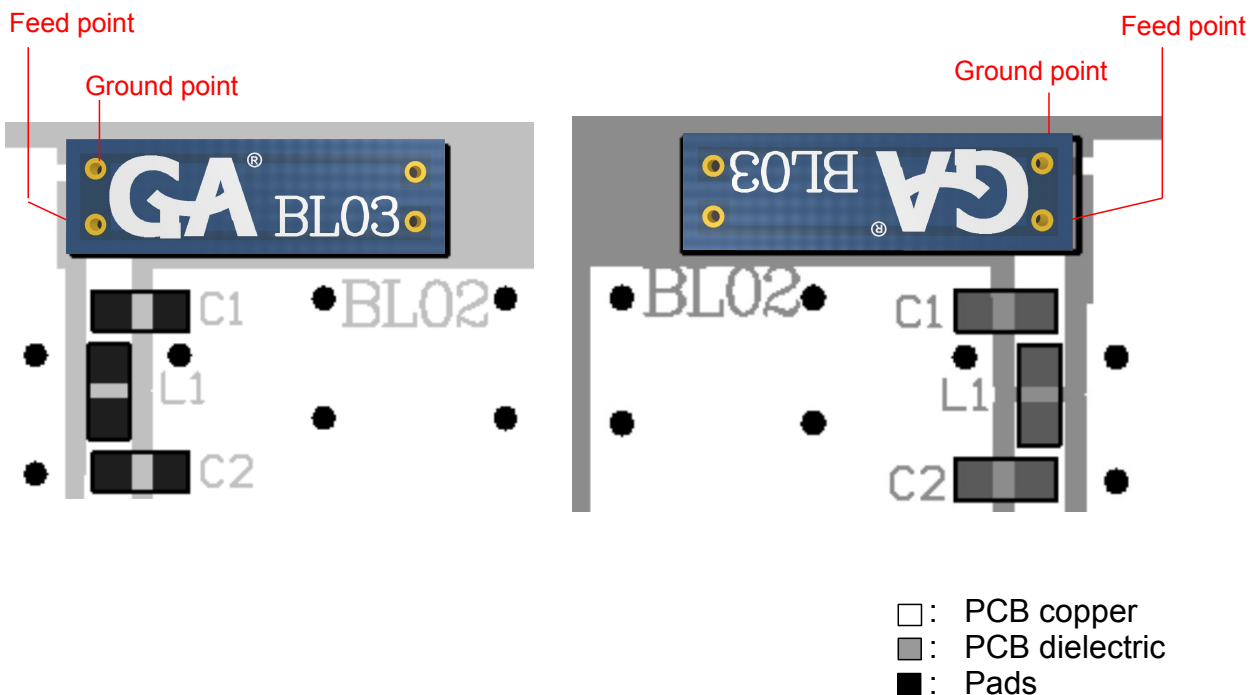
Green Antenna provides optional EM simulation service to locate the optimum placement of antenna on customer device or bare PCB board. Please contact ga@green-antenna.com for further information.

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● Antenna Orientation Flexibility

CubII 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

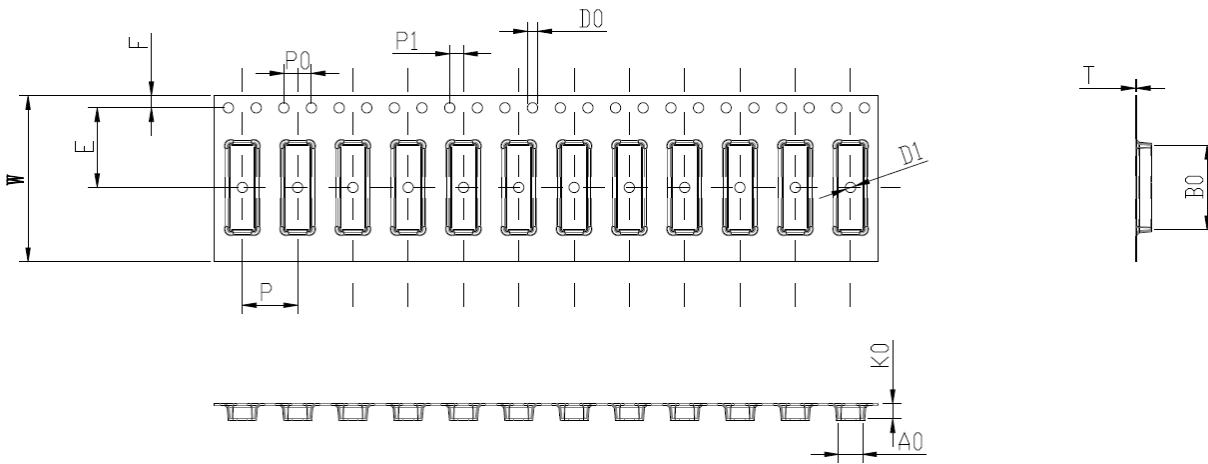
The re-flow profile should be consider the following conditions:

- 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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➤ Tape Characteristics



W	E	F	P	P0	P1	D0	D1	A0
24.0±0.3	11.5±0.1	1.75±0.1	8.0±0.1	4.0±0.1	2.0±0.1	1.5±0.1	1.5±0.1	3.5±0.1
Unit : mm						K0	T	B0
						1.2±0.1	0.3±0.05	12.2±0.1

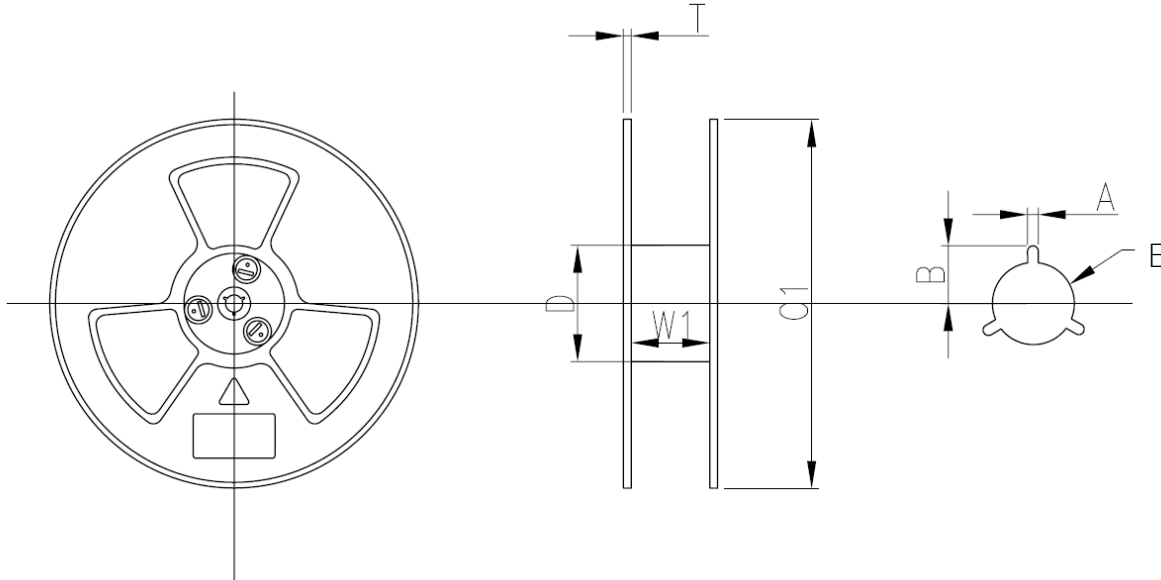
Quantity	3000 pcs/reel
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Reel Dimensions



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: CubII
Part Number: GA123408BL03
Qty: 3000 pcs
Date Code:
Manufacturers code number:

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