

Document	Datasheet
Type	Dielectric Chip Antenna
Application	2.4GHz
Part No.	AMAN1003030ST03
Revision	0.0

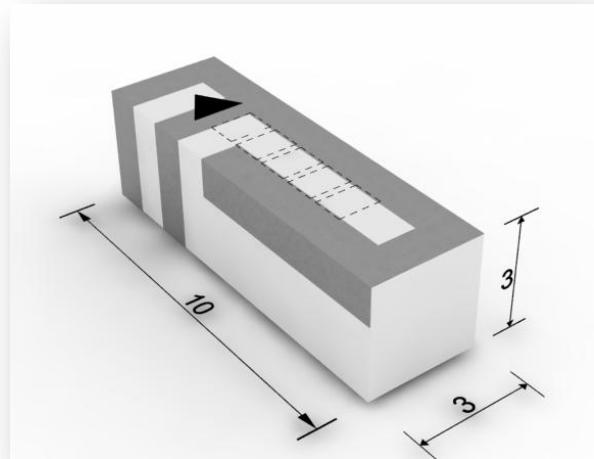
DATASHEET

Application

Bluetooth
Zigbee
WLAN (IEEE 802.11 b/g)
ISM 2.4GHz Wireless Devices

Features

PIFA structure
Size (10*3*3mm³)
Optimized for on-ground condition
SMT available under Pb-free condition
RoHS compliant



AMOTECH

Notes

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

Revision History

Rev. No	Date	Title	Contents	Page
0	'10.06.14		New Published	

Table of Content

1. Specifications	3
1.1 Electrical Specifications	3
1.2 Mechanical Specifications	3
1.3 Appearance and Material	3
2. PCB Design for Test	4
2.1 Evaluation Board Dimension	4
2.2 PCB Design Guide	4
3. Measurement Result	5
3.1 Typical Measurement Result (VSWR/RL, Smithchart)	5
3.2 Typical Measurement Result (Gain, Radiation Pattern)	6
4. Reliability	7
5. Soldering Reflow Profile	7
6. Packaging	8
6.1 Carrier Tape Dimension	8
6.2 Packaging Quantity	8
6.3 Packaging Label	8

1. Specifications

1.1 Electrical Specifications

No	Item	Spec.	Remark
1	Frequency Range [GHz]	2.4 ~2.485	
2	VSWR	Max 4:1	
3	Total Avg. Gain [dBi]	typ. -0.2	
4	Efficiency [%]	typ. 95	
5	Polarization	Linear	
6	Impedance [Ω]	Nominal 50	

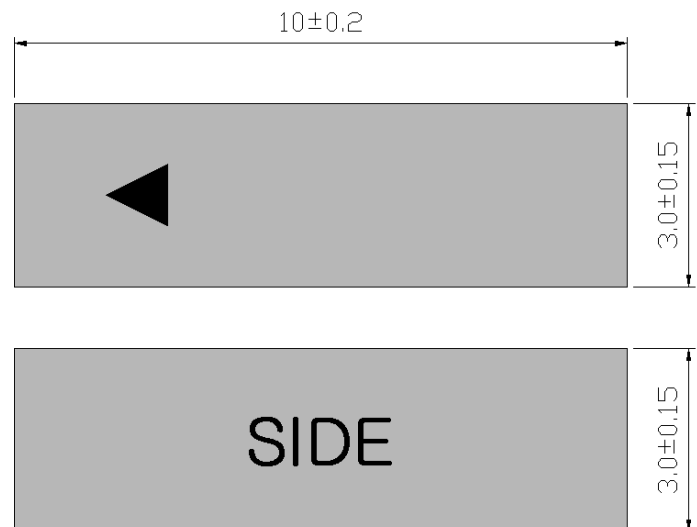
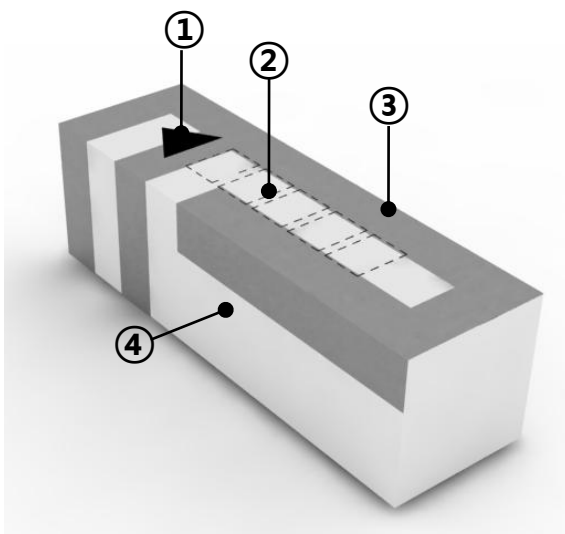
- ✓ The results are measured on the 60x40mm² evaluation board(EVB).
- ✓ See Page 6. for more detail gain parameter

1.2 Mechanical Specifications

No	Item	Spec.	Remark
1	Dimensions (LxWxH)	10.0x3.0x3.0 mm ³	
2	Unit Weight	typ. 0.3g	
3	Operating Temperature	-35 ~ +85 °C	

1.3 Appearance & Material

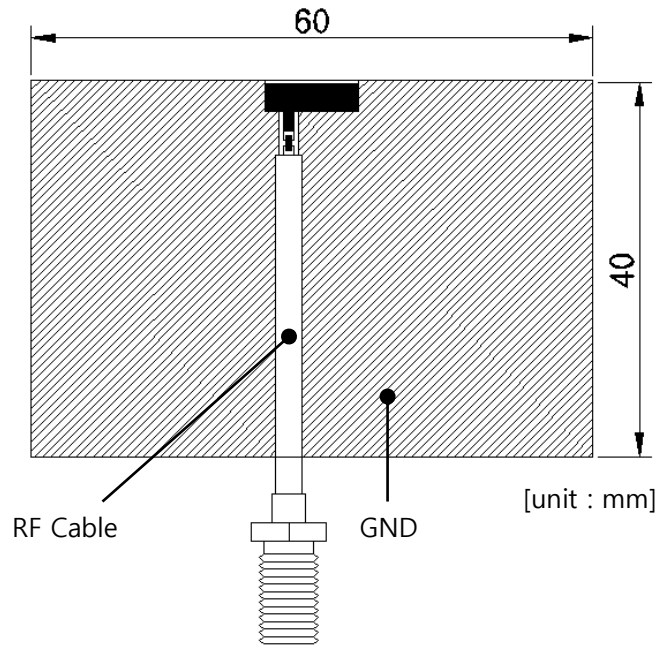
No	Item	Function	Material
①	Marking	Feeding Index	Ink
②	Marking	P/N & Week number	Ink
③	Electrode	Radiation Element	Ag
④	Ceramic Body	-	Ceramic



[unit : mm]

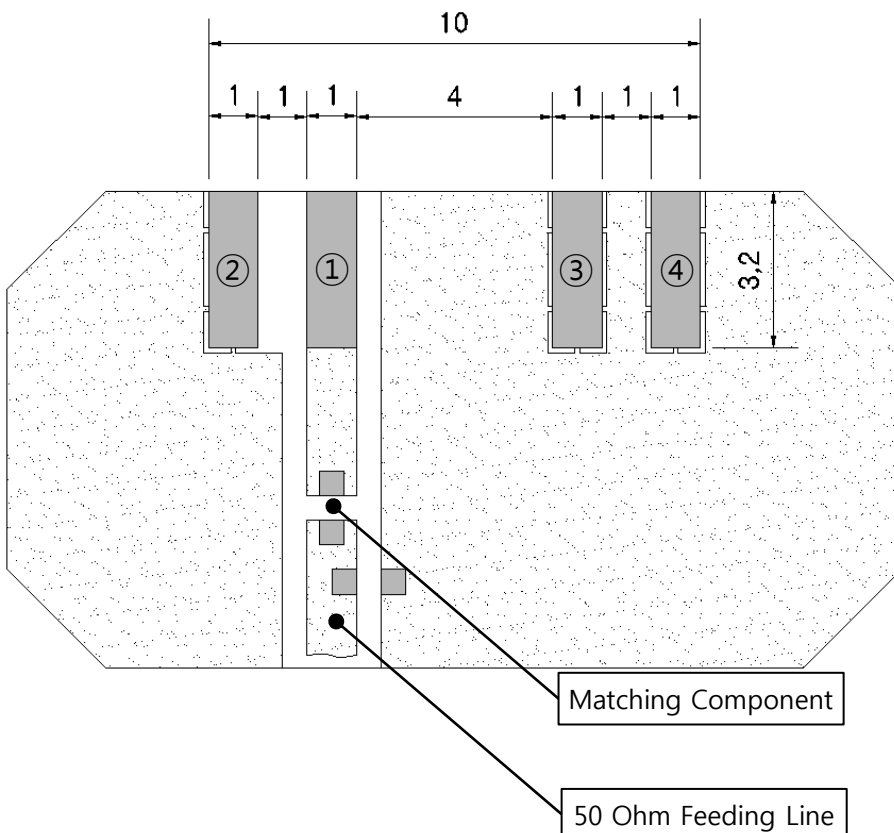
2. PCB Design for Test

2.1 Evaluation Board Dimension



✓ Evaluation board size ~ 60x40

2.2 PCB Design Guide



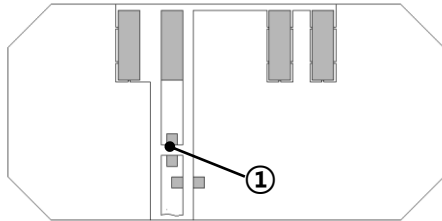
[Table] Pin Assignment

No	Pin Assignment
①	Feeding
②	GND
③	GND
④	GND

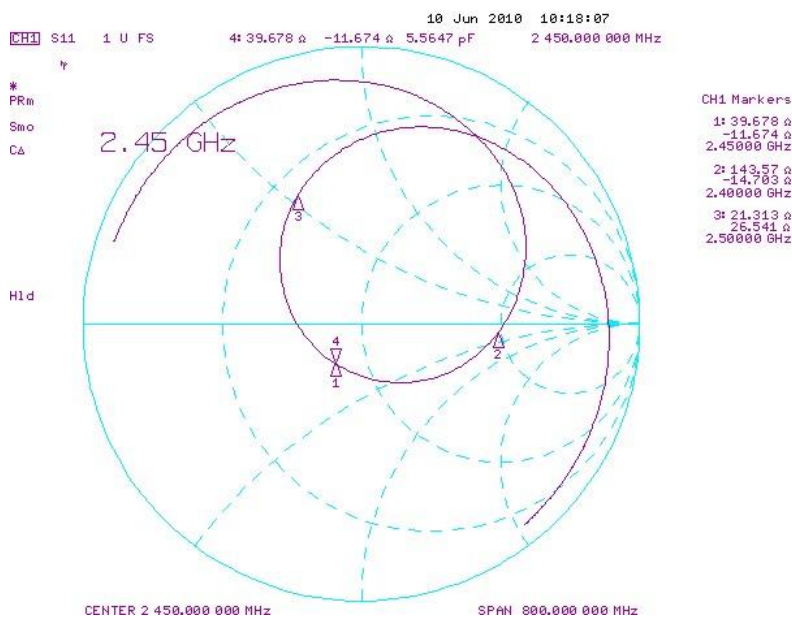
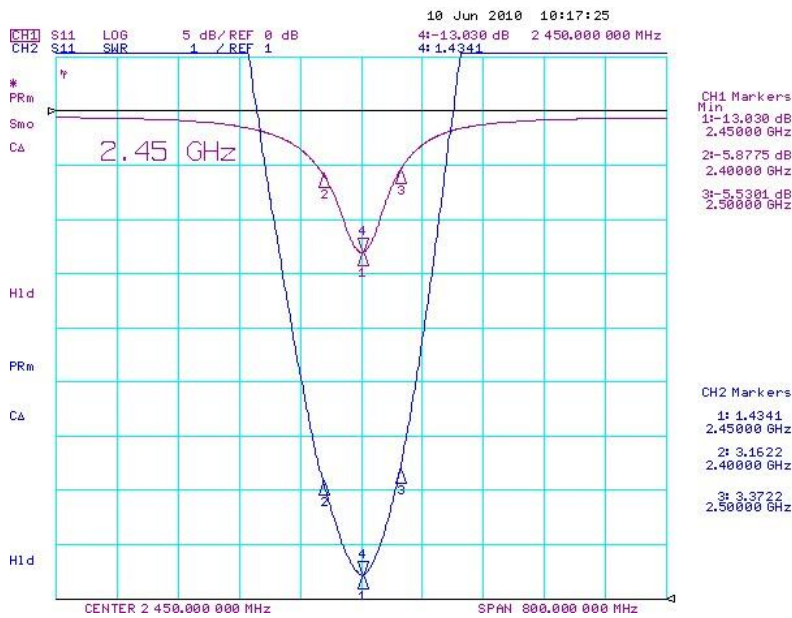
[unit : mm]

3. Measurement Result

3.1 Typical Measurement Result (VSWR/RL, Smithchart)



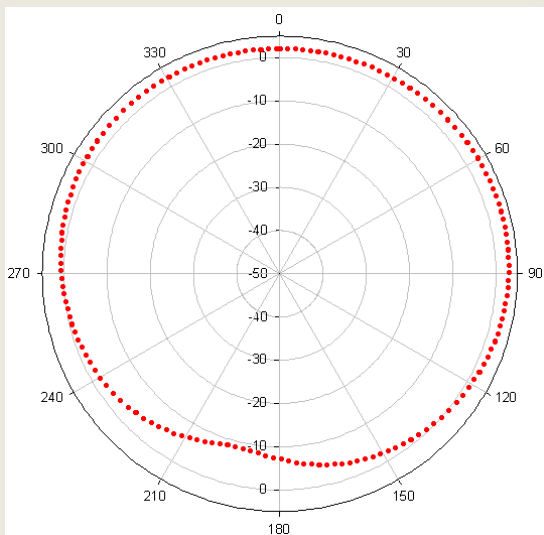
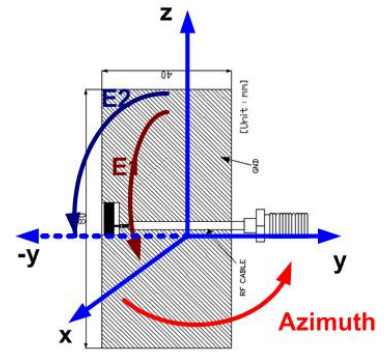
No	Matching Value
①	1.0 pF



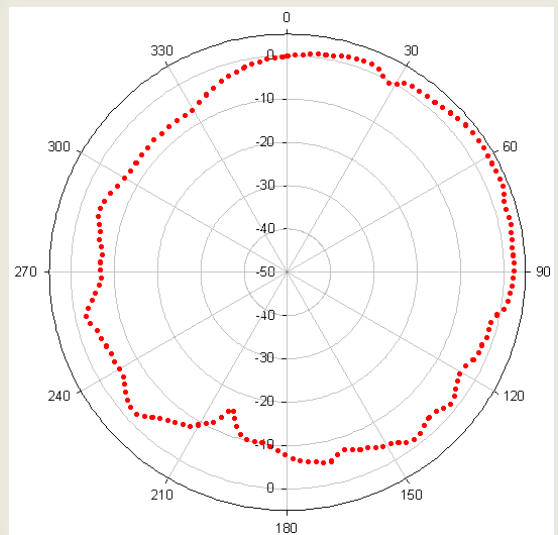
✓ The results are measured on the 100x50mm² evaluation board(EVB).

3.2 Typical Measurement Result (Gain, Radiation Pattern)

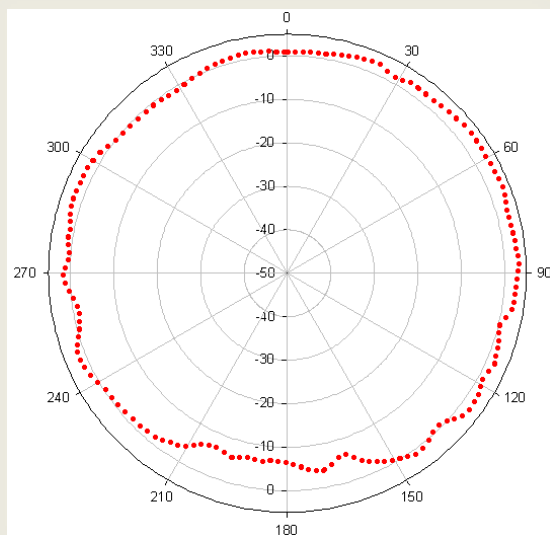
	Peak Gain (dBi)	Avg. Gain (dBi)	Efficiency(%)
Azimuth	3.1	0.8	95
Elevation 1	3.6	-1.4	
Elevation 2	3.4	0.7	



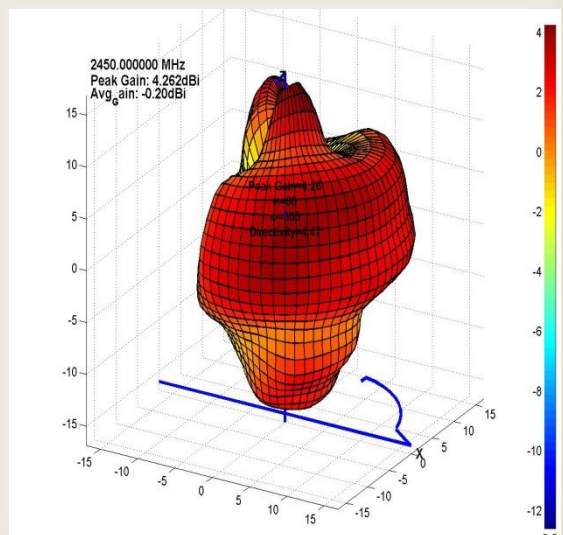
[Azimuth plane @2.45GHz]



[Elevation1 plane @2.45GHz]

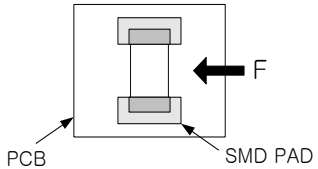


[Elevation2 plane @2.45GHz]

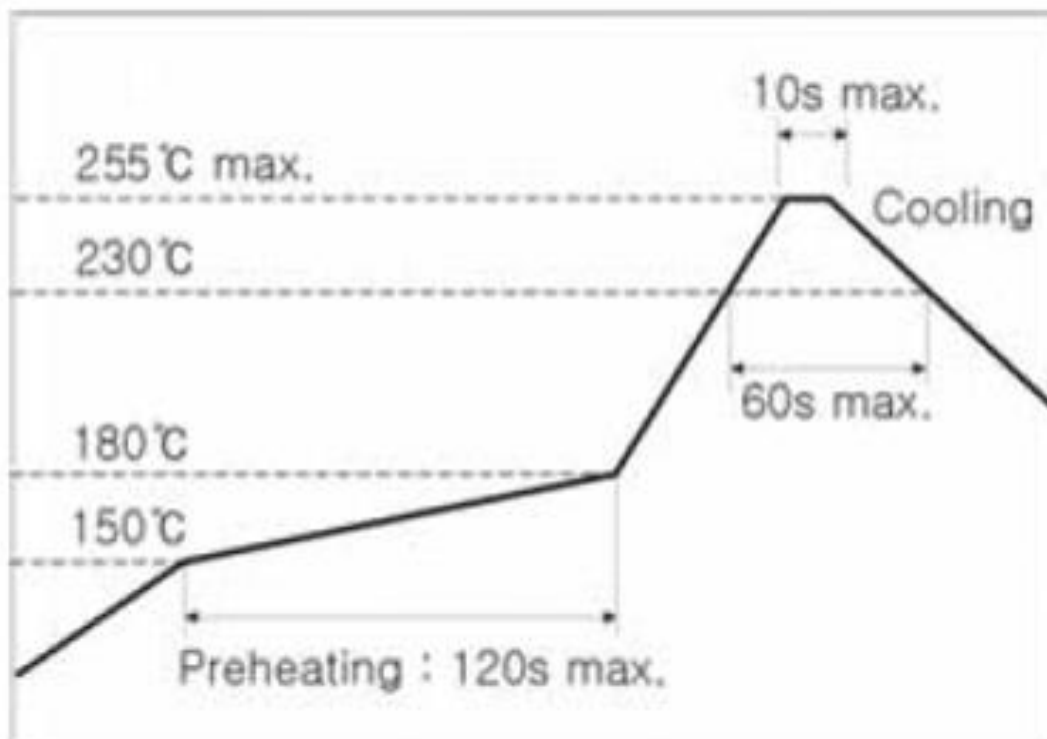


[3D Radiation Pattern]

4. Reliability

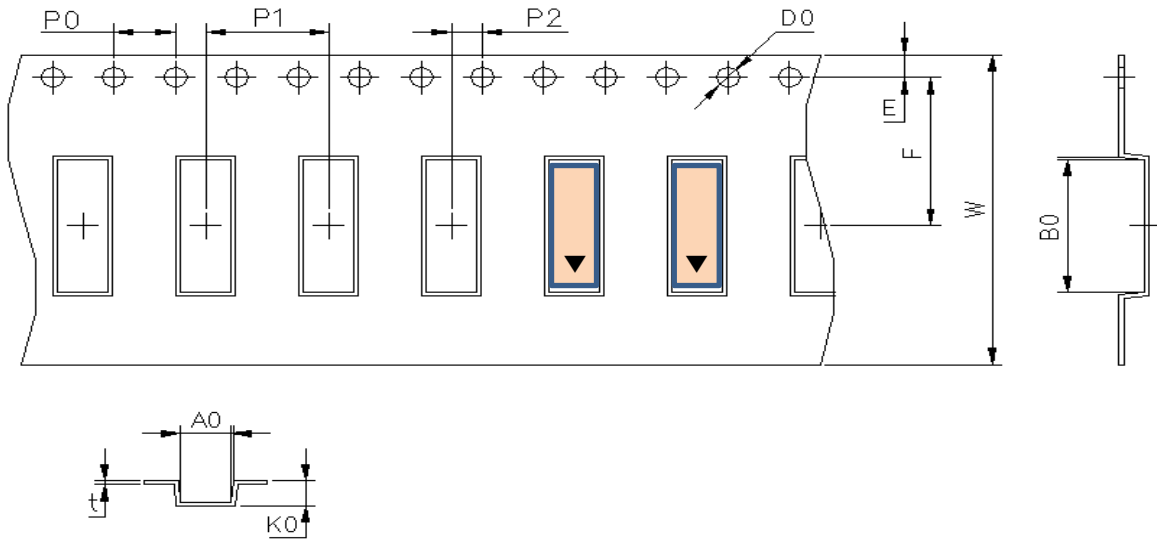
No	Item	Test Condition	Test Requirements
1	Adhesive Strength of Termination	1. Applied force on SMT chip till detached point from PCB. 	1. No mechanical damage by applied force 2. Strength (F) > 5 kgf
2	Thermal Shock (Cycle)	1. Step 1 : $-40 \pm 3^\circ\text{C}$, 30 min Step 2 : $+125 \pm 3^\circ\text{C}$, 30 min 2. Number of cycle : 30	1. No visual damage 2. Within electric spec (VSWR)
3	High Temperature Resistance	1. Temperature : $+125 \pm 5^\circ\text{C}$ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
4	Low Temperature Resistance	1. Temperature : $-40 \pm 5^\circ\text{C}$ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
5	Humidity	1. Humidity : 85 % RH Temperature : $+85 \pm 3^\circ\text{C}$ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)

5. Soldering Reflow Profile



6. Packaging

6.1 Carrier Tape Dimension



Item	Spec.	Item	Spec.	Item	Spec.
A0	3.30 ±0.10	P0	4.00 ±0.10	E	1.75 ±0.10
B0	10.30 ±0.10	P1	8.00 ±0.10	F	11.50 ±0.10
K0	3.25 ±0.10	P2	2.00 ±0.10	W	24.00 ±0.30
D0	1.55 ±0.05	-	-	t	0.30 ±0.05

6.2 Packaging Quantity

Item	Quantity	Dimension
Reel	2,000 ea	Φ13" * 24mm
Inner	4,000 ea (2 Reel)	350 * 350 * 90 (mm3)
Outer Box	12,000 ea (3 Inner Box)	390 * 390 * 280 (mm3)

6.3 Packaging Label

AMOTECH Co., Ltd.

5BL-1Lot, 617, Namchon-Dong, Namdong-Gu, Incheon, Korea

Dielectric Chip Antenna

P/N : AMAN1003030ST03

Lot No :

Quantity : 2,000 pcs Date : 2010/06/14