



Customer:

Issue/date:

PRODUCT SPECIFICATION FOR APPROVAL

产品承认书

Customer P/N	SNEC P/N

Customer Approval:

Eng. Dept.	Tech. Dept.	Elect. Dept

Manufacturer Information:

Approved/Date	Checked/Date	Prepared/Date

Supplier: Shenzhen Daybetter Technology Co., Ltd.

供方：深圳市天好科技有限公司

Native Habitat: Sunlord Industrial Park Dafuyuan Industrial Zone GuanLan, Shenzhen, China

原产地：中国深圳观澜大富苑工业区顺络工业园

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Http: //www.db-tech.com.cn, E-mail: db@db-tech.com.cn



Environment Protection Statement

There are not the prohibited chemical substances specified as belows to be contained or used in our product or process.

1. Ozone-depleting substances. Such as CFC, Halon etc.
2. Flame Retardants. Such as PBBs, PBBEs.
3. Toxic and Dangerous, chemical substances.

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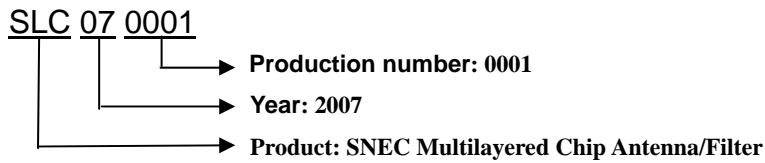
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1、PART NUMBER

SL DA 92 — 2R660G — S1
 ① ② ③ ④ ⑤

①	SL	SNEC LTCC Products
②	Classification	FB: Band Pass LC Filter FL: Low Pass LC Filter DA: Chip Antenna
③	Size	92: 9020 31: 3216 22: 2520 21: 2012
④	Frequency	2R540G:2540MHz 5R800G:5800MHz
⑤	Serial Code	A1-Z9:Modification of design or classification of model and user

2、LOT NUMBER

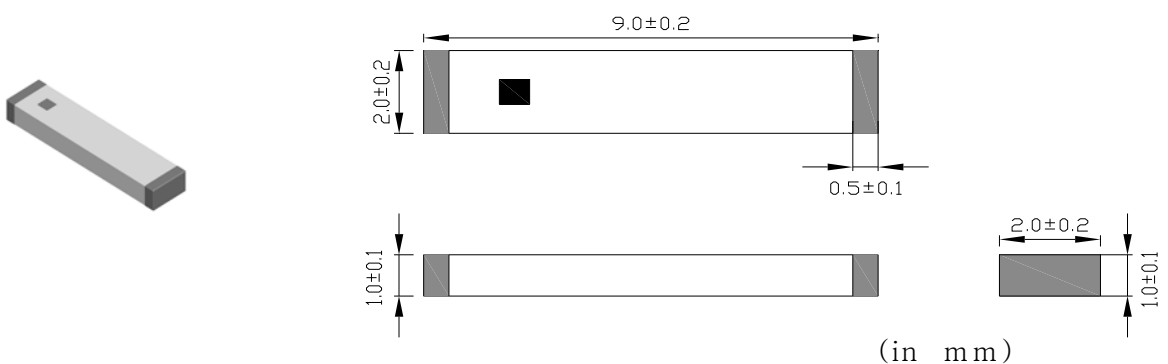


3、SHAPES, DIMENSIONS AND ELECTRICAL CHARACTERISTICS

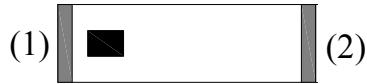
● APPLICATIONS AND FEATURES

- Monolithic SMD with small, low-profile and light-weight type.
- High gain, wide bandwidth ,and low cost .
- Center frequency of antenna on PCB can be changed by adjusting pad extent.

● DIMENSIONS



● Terminal Configuration



No.	Terminal Name	No.	Terminal Name
(1)	Feeding Point	(2)	NC

- PRODUCTION LOCATION
SHENZHEN CHINA

- SPECIFICATIONS

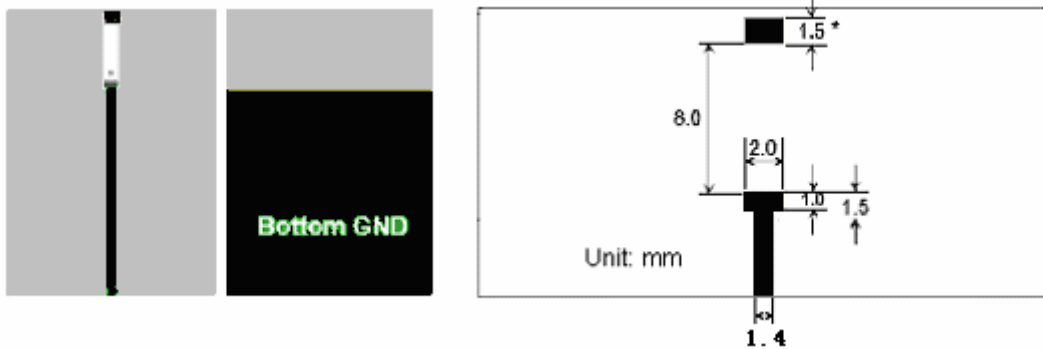
Part Number	Band Width (MHz)	Peak Gain (V-XZ)	Average Gain(V-XZ)	VSWR (in BW)	Impedance (Ohm)
SLDA92-2R660G-S1	2610-2710	3.0dBi typ	1.0dBi typ.	< 2	50

Operating Temperature Range: -40 ~ +85 °C

Storage Temperature Range: -40 ~ +85 °C

Power Capacity: 3W max.

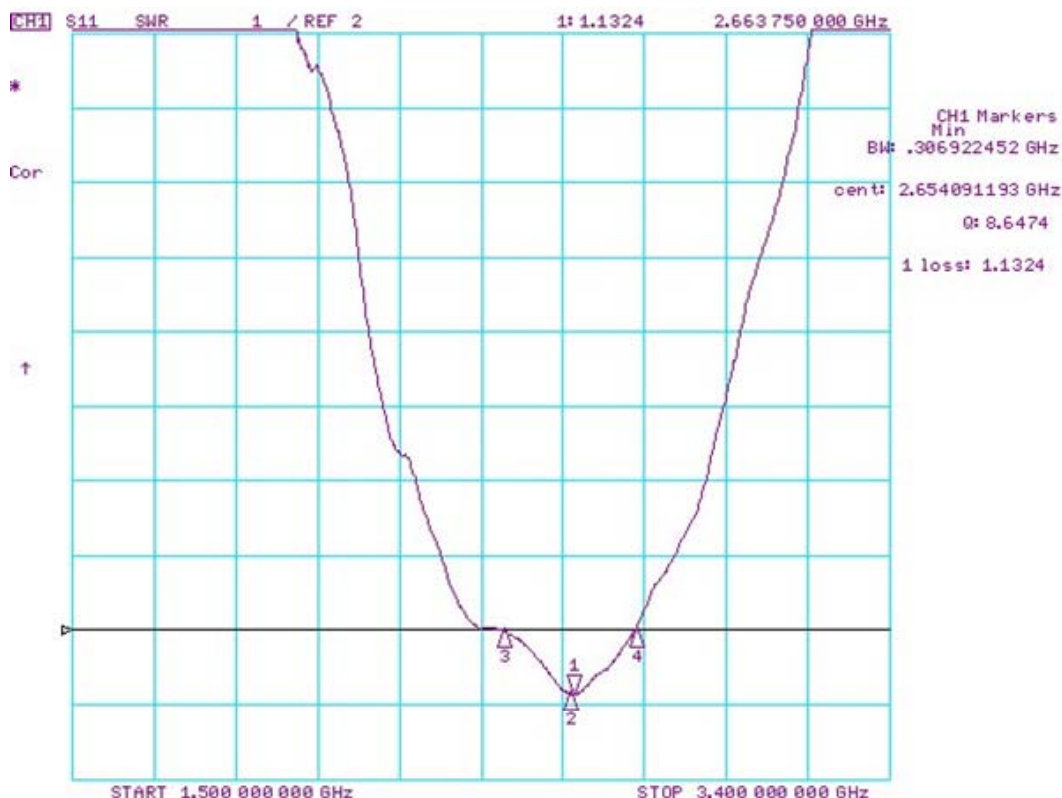
- EVALUATION BOARD AND LAND PATTERN



Frequency is changed with layout patterning of PCB.

Please consult with us for appropriate design.

- RETIRM LOSS



4. STANDARD CONDITIONS

4.1 Standard Atmospheric Conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows:

Ambient temperature: $20 \pm 15^{\circ}\text{C}$

Relative humidity: $65 \pm 20\%$

Air pressure: 86kpa to 106kpa

If there may be any doubt on the results, measurements shall be made within the following limit:

Ambient temperature: $20 \pm 2^{\circ}\text{C}$

Relative humidity: $65 \pm 5\%$

Air pressure: 86kpa to 106kpa

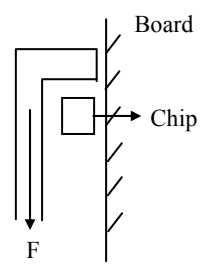
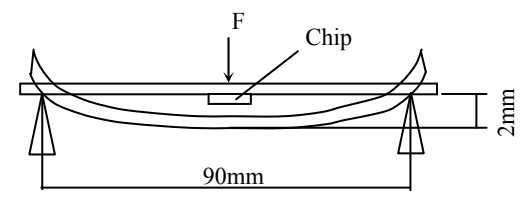
4.2 Operating temperature range: $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$

4.3 Storage temperature and humidity range: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, 0~90%RH

4.4 Test equipment: Network Analyzer——HP8753E, HP8719ES

5. Reliability Characteristics

5.1	Item	Specification	Test Condition and Method

Solderability	Solder ability	<ul style="list-style-type: none"> a. The chip shall not crack. b. More than 90% of the terminal electrode shall be covered with new solder. 	<p>Test condition</p> <p>Preheat 120°C to 150°C [248 to 302° F] for 60 sec.</p> <p>Solder: Lead free solder</p> <p>Solder temperature: 250±5°C [482±9° F]</p> <p>Flux: Rosin</p> <p>Dip time: (4±1) sec.</p>
	Leaching resistance	<ul style="list-style-type: none"> a. The chip shall not crack. b. More than 75% of the terminal electrode shall be covered with new solder. c. Satisfy electrical characteristic. 	<p>a. Test condition</p> <p>Preheat 120°C to 150°C [248 to 302° F] for 60 sec.</p> <p>Solder: Lead free solder</p> <p>Solder temperature: 260±5°C [500±9° F]</p> <p>Flux: Rosin</p> <p>Dip time: (10±1) sec.</p> <p>b. Measurement method:</p> <p>The component should be stabilized at normal condition for (24±2) hours after test.</p>
5.2	Item	Specification	Test Condition and Method
Strength	Terminal strength (Push test)	9.8N minimum	<p>Apply pushing force at 0.5mm/sec until electrode pads are peeled off or ceramic broken.</p> 
	Bending strength	No mechanical damage shall be noticed.	<p>The board is bent 2mm.</p> <p>Applied speed: 0.5mm/s</p> <p>Keep time: 30 sec.</p> 
5.3	Item	Specification	Test Condition and Method
	Temperature characteristics	Satisfy electrical characteristic.	<p>Solder the sample on PCB.</p> <p>Exposure at Each Temperature -40°C, -20°C, 0°C, 25°C, 50°C, 85°C for 30 minutes.</p>



SPECIFICATION

TQ-OP04-07, REV.B

	Humidity resistance	a. No mechanical damage shall be noticed. b. Satisfy electrical characteristic.	a. Test condition Temp.: $60 \pm 2^{\circ}\text{C}$ Humidity: 90%~95% Test time: 500+24/-0 hrs b. Measurement method: The component should be stabilized at normal condition for (24 ± 2) hours after test.
	High temperature resistance		a. Test condition Temp.: $125 \pm 2^{\circ}\text{C}$ Test time: 500+24/-0 hrs b. Measurement method: The component should be stabilized at normal condition for (24 ± 2) hours after test.
	Low temperature resistance		a. Test condition Temp.: $-55 \pm 2^{\circ}\text{C}$ Test time: 500+24/-0 hrs b. Measurement method: The component should be stabilized at normal condition for (24 ± 2) hours after test.
	Thermal shock (Temperature cycle)		a. Test condition 1) Temp.: -40°C , time: $30 \pm 3\text{min}$ 2) Temp.: $+85^{\circ}\text{C}$, time: $30 \pm 3\text{min}$ 3) Transition time: within 20sec. 100 cycles b. Measurement method: The component should be stabilized at normal condition for (24 ± 2) hours after test.
5.4	Item	Specification	Test Condition and Method
Life characteristics	High temperature resistance (Operating life)	a. No mechanical damage shall be noticed. b. Satisfy electrical characteristic.	a. Test condition Applied rated current. Temp.: $125 \pm 2^{\circ}\text{C}$ Test time: 500+24/-0 hrs b. Measurement method: The component should be stabilized at normal condition for (24 ± 2) hours after test. d. Only for chip inductor/bead.



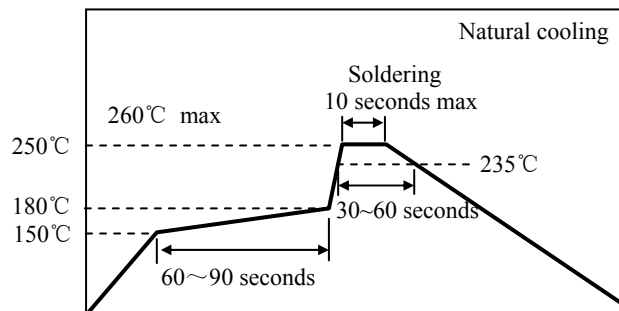
SPECIFICATION

TQ-OP04-07, REV.B

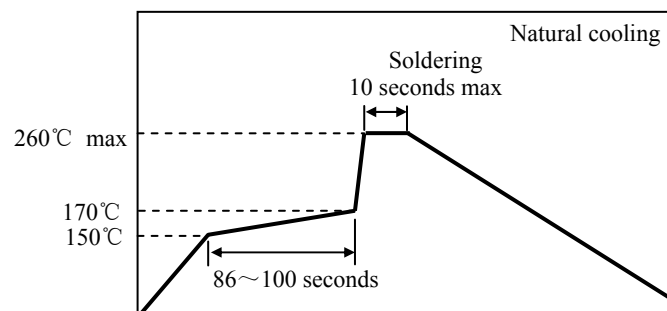
	Humidity resistance (Operating life)		<p>a. Test condition Applied rated current. Temp.: $60 \pm 2^{\circ}\text{C}$ Humidity: 90%~95% Test time: 500+24/-0 hrs</p> <p>b. Measurement method: The component should be stabilized at normal condition for (24 ± 2) hours after test.</p> <p>c. Only for chip inductor/bead.</p>
5.5	Item	Specification	Test Condition and Method
Others	Drop	<p>a. No mechanical damage shall be noticed.</p> <p>b. Satisfy electrical characteristic.</p>	<p>Test condition</p> <p>a. Chip inductor/bead Drop 10 times on a concrete floor from a height of 1m.</p> <p>b. Antenna/LC filter Drop 3 times on a concrete floor from a height of 50cm.</p>
	Vibration		<p>Test condition</p> <p>Frequency: 10 to 55Hz Amplitude: 1.52mm Direction and time: X, Y and Z directions for 2 hours each.</p> <p>Only for chip inductor/bead/filter.</p>

6. RECOMMENDED SOLDERING CONDITIONS

Reflow soldering



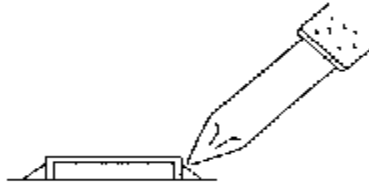
Flow soldering



Touch up soldering: Perform soldering at $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$ on 30W max.

Time: <5 sec.

Take care not to apply the tip of the soldering iron to the terminal electrodes.



Flux and cleaning: Rosin-based flux is recommended.

Cleaning conditions:

Solvent	Chlorine-based solvent (Do not use acid or alkali solvents)
Time	1 minute min.
Ultrasonic output power	200W/t max.

7. PACKAGING, STORAGE AND TRANSPORT

7.1 Packaging

- 7.1.1 Tape & reel packaging specified in attached figure.
- 7.1.2 Reel shall be packed in vinyl bag.

7.2 Storage

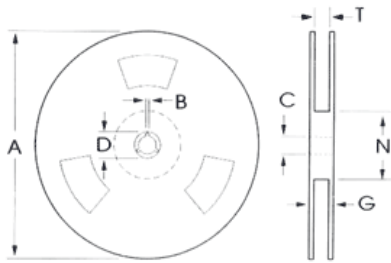
- 7.2.1 The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to high humidity. Packages must be stored at $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ and 0~90%RH.
- 7.2.2 The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to dust or harmful gas (hydrogen chloride, sulfurous acid gas or hydrogen sulfide).
- 7.2.3 Packaging material may be deformed if packages are stored where they are exposed to heat or direct sunlight.
- 7.2.4 Minimum packages, such as polyvinyl packages shall not be opened until just before they are used. If opened, use the reels as soon as possible.
- 7.2.5 Solderability specified in clause 5.1 shall be guaranteed for 12 months from the date of delivery on condition that they are stored at the environment specified in clause 7.2.1 & 7.2.2. For those parts which passed more than 12 months shall be checked solderability before it is used.

7.3 Transport

The cases shall not be damaged and rained on.

Reel dimensions

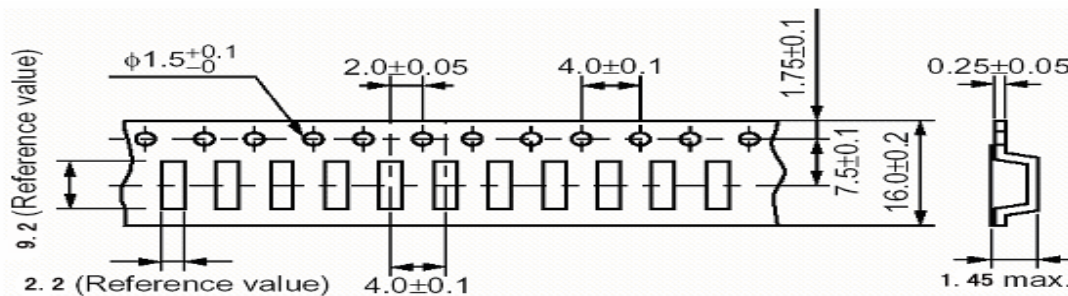
Dimensions: mm



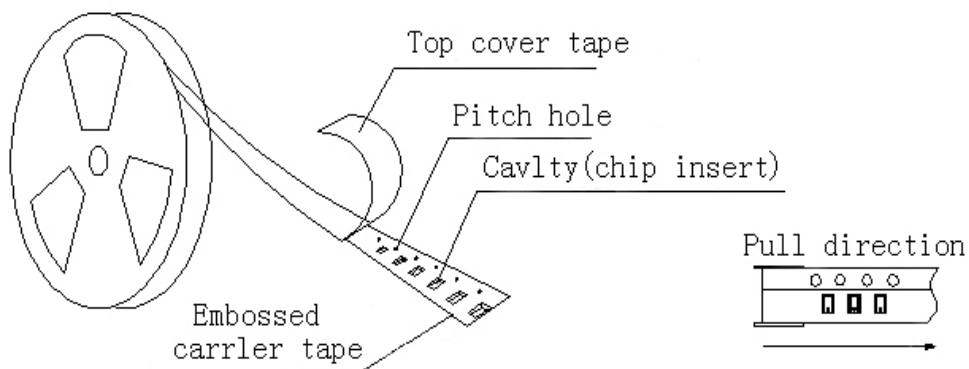
item	Chip antenna
A	330
B	2.2 ± 0.5
C	13 ± 0.2
D	20.2 ± 0.2
N	100 ± 1.0
T	16.5 ± 1.0
G	21.1 ± 2.0

Reel material: PS (Polystyrene)

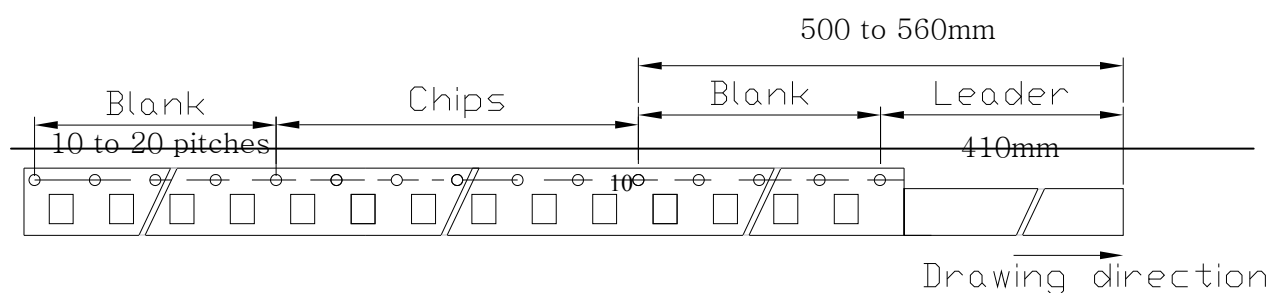
Embossed carrier tape: (Dimensions:mm)



7.4 Taping figure and drawing direction:



Unit: mm



Tape material:

Base tape: plastic

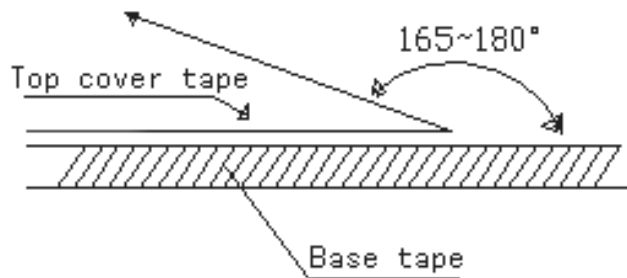
Cover tape: polyethylene

Pulling strength of tapes:

Carrier tape	10N or more (1kgf or more)
Cover tape	5N or more (0.5kgf or more)

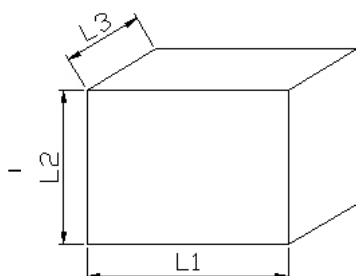
Peeling strength of cover tape:

Cover tape	0.2~0.6N (20gf~60gf)
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Test condition: 1) peel angle: 165°~180° vs. carrier tape.

2) peel speed: 300mm/min ± 10%.



Box and case dimensions: mm

Type	L1	L2	L3
Box	350	350	80
Case	380	380	270

3

reels

in a box, 3 boxes in a case.

Packaging:

Packaging quantities:

Type	Quantity pcs/reel
9020	4000

7.5 Packing documents

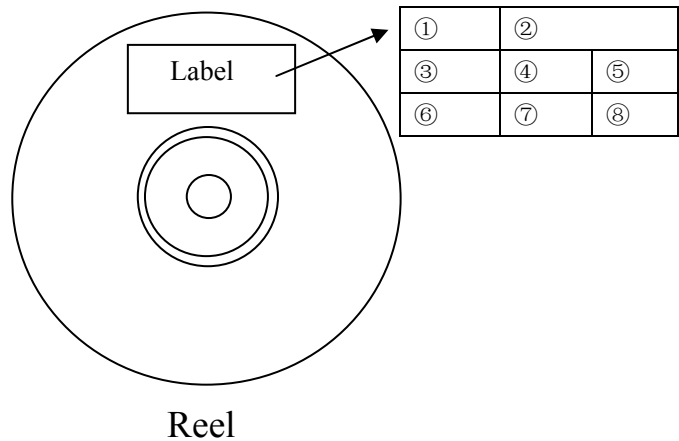
Packing include the following:

- a. Packing list.
- b. Certificate of compliance.

7.6 Marking

7.6.1 Marking on reels:

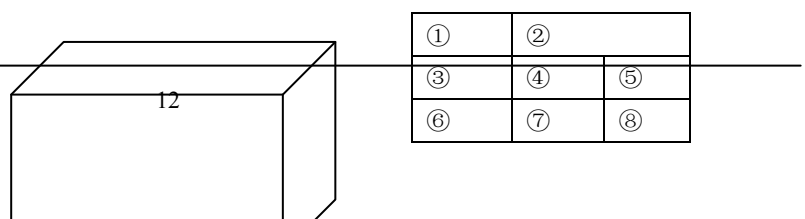
- ① Customer
- ② P.O.NO.
- ③ Customer Part NO.
- ④ Date
- ⑤ Lot NO.
- ⑥ SNEC Part NO.
- ⑦ Quantity Per Reel
- ⑧ INSP.NO



Shall be shown on marking label.

7.6.2 Marking on inner box:

- ① Customer
- ② P.O.NO.



③ Customer Part NO.

④ Date

⑤ Lot NO.

⑥ SNEC Part NO.

⑦ Quantity per BOX

⑧ INSP.NO

Label

Inner box

Shall be shown on marking label.

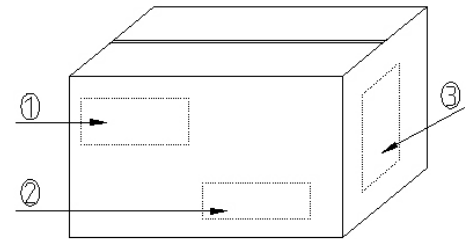
7.6.3 Marking on outer case:

① Manufacturer: “SG”——CSG HOLDING

② SHENZHEN CSG Electronics CO., LTD.

③ Ship marking: “UP”, “HAND CARE”, “MOISTURE-PROOF”.

Shall be marked on the case.



Outer case