



深圳市科源信科技有限公司  
Shenzhen KeYuanXin Technology CO.,LTD

# 产品规格书

**SPECIFICATION FOR APPROVAL**

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306A Block West Building 1, Huali Decoration  
NO.118 Zhenhua Road Futian District Shenzhen  
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Product Name: Crystal  
\_\_\_\_\_

Product Type: OSC 3225  
\_\_\_\_\_

Nominal Freq: 48.0000MHz  
\_\_\_\_\_

ProvideBrand: PARTRON  
\_\_\_\_\_

P/N: CSC3S480000CEVRS00  
\_\_\_\_\_

Customer P/N:  
\_\_\_\_\_

**Approved By Customer**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

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PRELIMINARY

## 1. Revision History

Rev.	Date	Rev. page	Revision Content and Reason	Remark
V1.0	'16.05.10	All Page	First-edition	

Preliminary

## 2. Specification

Item		Symbol	Content
Frequency		fo	48.000 MHz
Supply voltage		VDD	1.6V ~ 3.6V (Typ 2.6V)
Temperature range	Storage	T <sub>STG</sub>	-40 to 85°C
	Operating	T <sub>OPR</sub>	-40 to 85°C
Frequency stability(*Note 1) 		$\Delta f/f_0$	±30ppm
Current consumption		I <sub>op</sub>	10mA max
Duty cycle		tw/t	50±10%
Output voltage	High	V <sub>OH</sub>	VDD-10%VDD min
	Low	V <sub>OL</sub>	10%VDD max
Rise and fall time		t <sub>R</sub> /t <sub>F</sub>	10 ns max
Output load condition		C <sub>L</sub>	15pF
Aging		f <sub>a</sub>	±3ppm/3year
Start up time		t <sub>osc</sub>	10ms max
Pin 1 Tri-state	VDD ±0.5V		Enable (*Note 2)
	0.3V MAX		Disable

[REMARK]

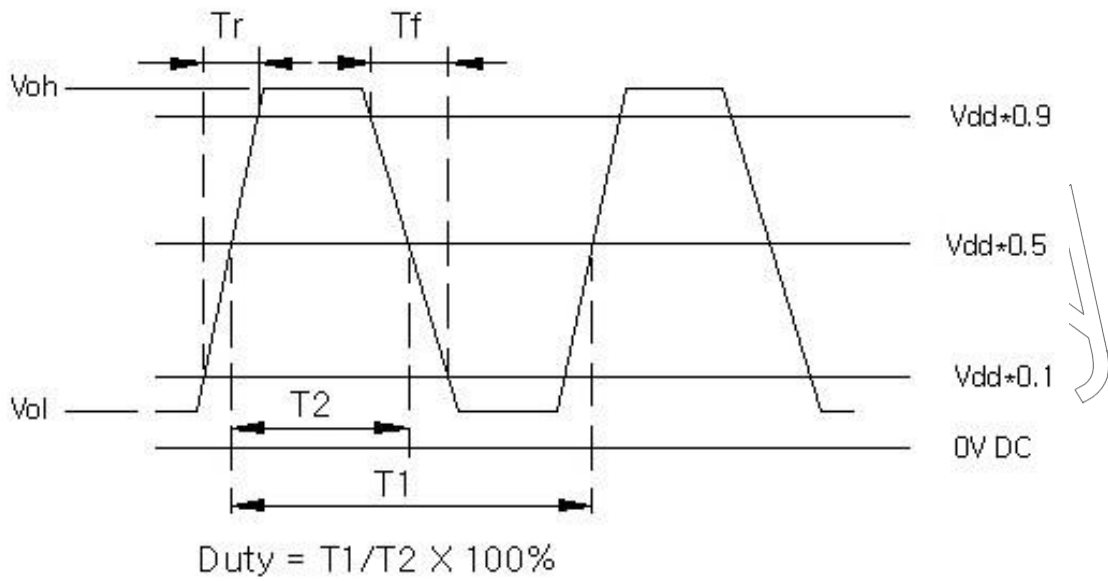
**\*Note 1**

Frequency stability contains Initial Tolerance(at 25°C), Temperature Drift(-40°C ~ +85°C), and Supply Voltage Variation (1.6V ~ 3.6V ).

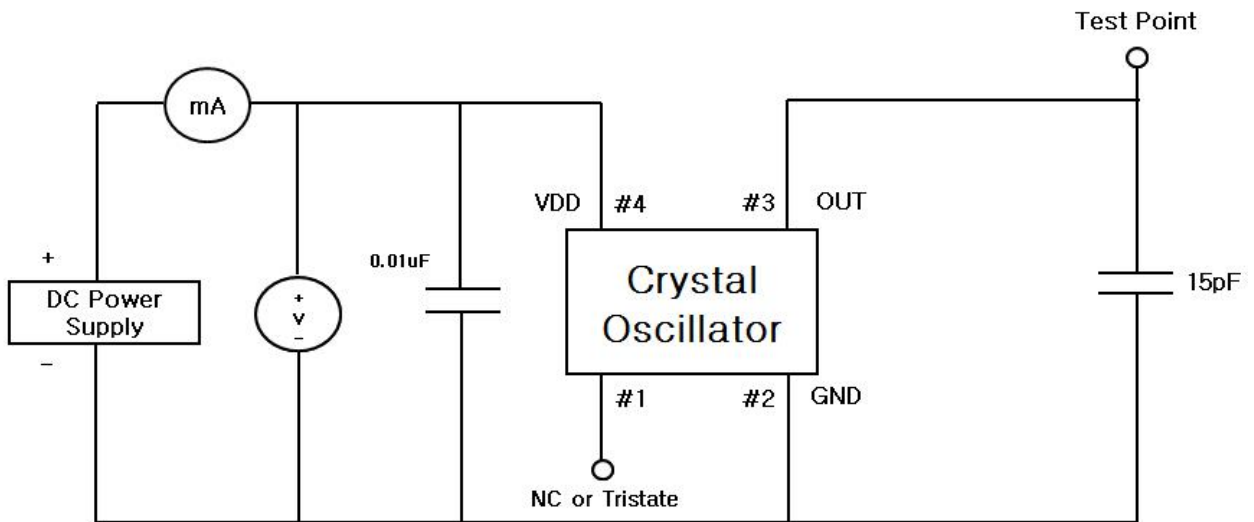
**\*Note 2**

If tri-state level is higher than VDD +0.5V, no oscillation or abnormal oscillation

Output wave form

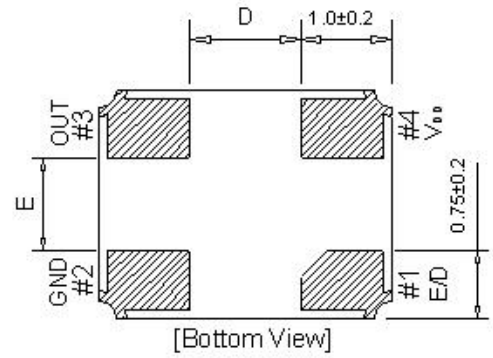
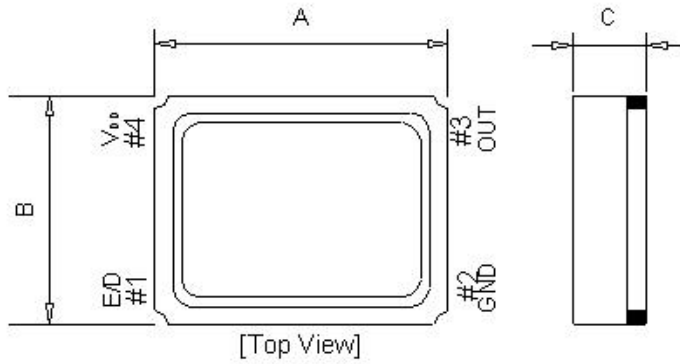


Measurement circuit



### 3. Appearance

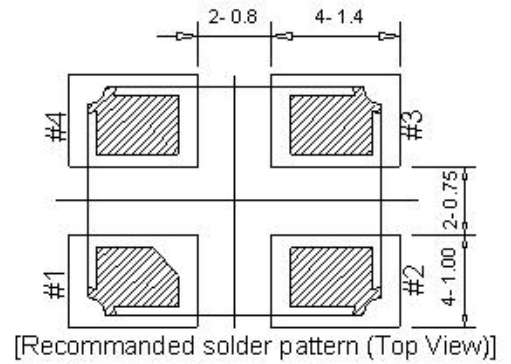
#### 3.1 Outline Dimensions and PIN CONNECTIONS



Size in mm				
A	B	C	D	E
3.20	2.50	1.00	1.20	1.00
±0.10	±0.10	max.	±0.10	±0.10

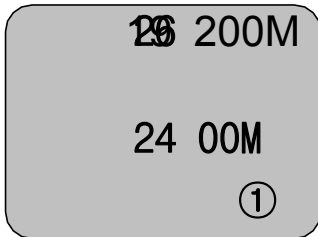
Pin connections	
#1	Tri-state or Open
#2	GND
#3	Output
#4	V <sub>DD</sub>



[About Pin #1]

- Open or high level : frequency output
- Low level : Output is high impedance

#### 3.2 Marking and Lot No.



ITEM	MARKING	REMARK
①		No Marking

**4. A Primary test result**

- Fill in formal approval sheet.

Preliminary



## 5. Reliability test

### 5.1 Environment Test

Contents	Condition	Remark
High temperature Storage	+125°C±5°C, 240 hr	*Testing is complete, leave at room temperature for 24 hours, and Measure.(25°C±5°C) * Be satisfied with contents No 2. Specification
Low temperature Storage	-55°C±5°C, 240 hr	
High temperature High humidity Storage	+85°C±5°C, RH=85%, 96 hr	
PCT	+121°C±5°C, RH=100%, 24hr	

### 5.2 Thermal shock , Reflow Test

Contents	Condition	Remark
Thermal shock	-40°C±5°C,+90°C±5°C, 15 min, 200 cycle	*Testing is complete, leave at room temperature for 24 hours, and Measure.(25°C±5°C)
REFLOW	Pre Heating 200±5°C , 30~60 sec Peak Heating 260°C±5°C , 30sec Max	* Be satisfied with contents No 2. Specification

### 5.3 Mechanical Test

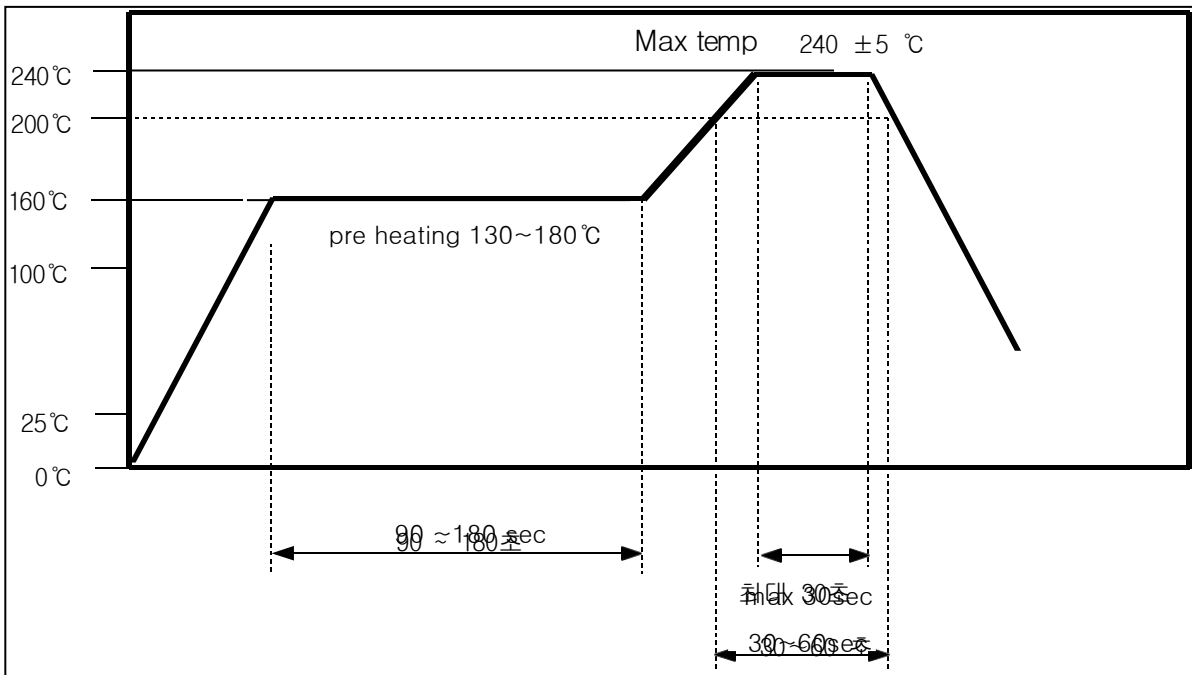
Contents	Condition	Remark
Vibration	Frequency : 10~500Hz, 10 ×9.8 m/s <sup>2</sup> (G) Sweep time 15min ,X.Y.Z each 5 times	*Testing is complete, leave at room temperature for 1 hours, and Measure.(25°C±5°C)
Drop test	12 times falling at a 160cm height (falling with jig)	* Be satisfied with contents No 2. Specification

### 5.4 Table

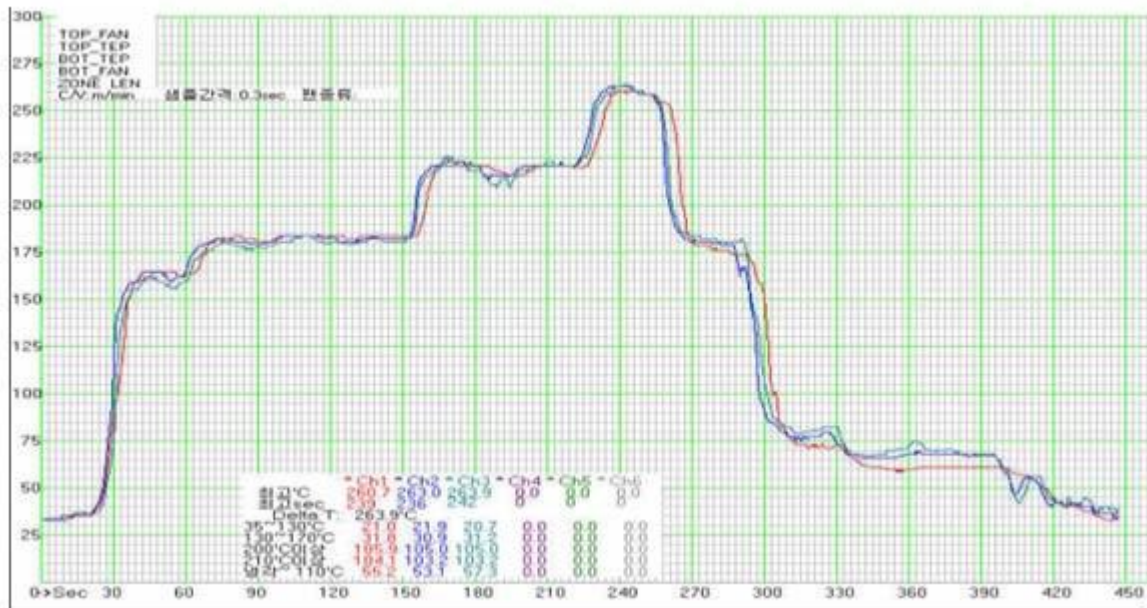
Frequency change permitted	±5ppm Max.
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## 6. Soldering Condition

### 6.1 Standard Reflow soldering condition



### 6.2 The maximum temperature guarantees to the 260°C(10sec Max)

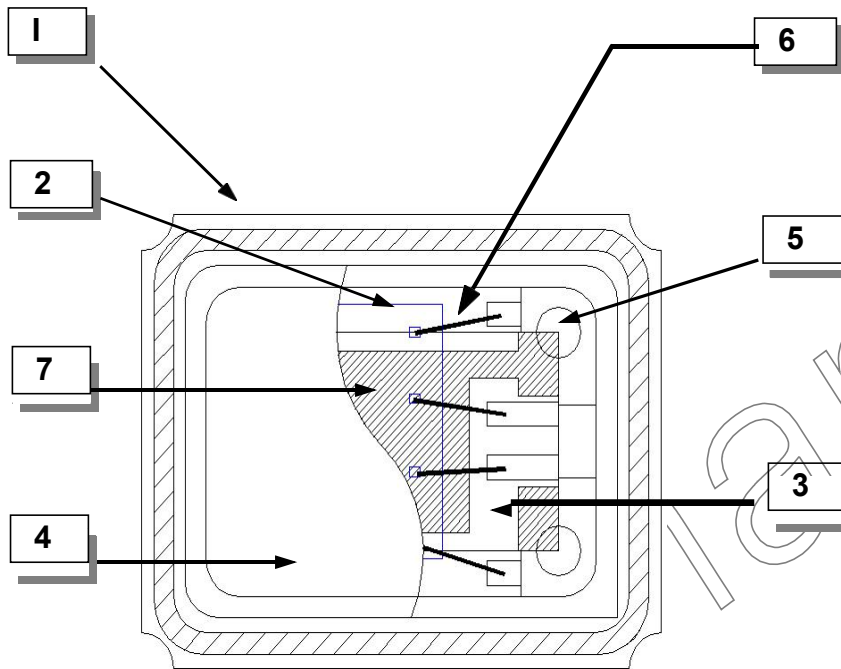


### 6.3 Soldering Iron Method

- Pre heating : 120°C (30 ~ 300 sec)
- Max temp : 410°C Max
- Time : Max 4 sec

## 7. Construction and Materials

### 7.1 Constructions



### 7.2 Product Materials

No	item	main material
1	Ceramic Package	Al <sub>2</sub> O <sub>3</sub> + gold-plating
2	IC	SiO <sub>2</sub>
3	Blank	SiO <sub>2</sub> (Quartz)
4	Lid(Cover)	kovar
5	Conductive Epoxy	Silver
6	Gold wire	Au(99.99%)
7	Electrode	Ag(99.99%)

## 8. Notices

### 8.1 ESD Level : Class2(2000V ~ 4000V)

TEST ITEM	TEST METHOD	
	REFERENCE STANDARD	CONDITION
Electrostatic Discharges (ESD)	JEITA EIAJ ED-4701/304 (MM)	C=200pF, R=0Ω,5times
	MIL-STD-883D 3015.7 (HBM)	C=100pF, R=1.5KΩ,3times

※ Be satisfied ESD condition on the table.

※ This product with a built-in C-MOS IC. Do not exposure excess ESD.

### 8.2 MSL LEVEL 1 (JEDEC J-STD-020C)

No	Floor Life		Soak Requirements	
	Time	Conditions	Time	Conditions
1	Unlimited	= < 30°C/85%RH	168hr	= < 85°C/85%RH

→ Be satisfied "MSL 1" test condition on the table.

### 8.3 NOISE

For stable operating against ripple voltage variation, attach 0.01uF~0.1uF capacitor between VDD and GND

※ available value of ripple voltage: 200mV P-P MAX

### 8.4 SHOCK

Oscillator has a CRYSTAL RESONATOR.

Do not drop in a reel or single product. It can be damaged

## 9. Packing

### 9.1 Reel, carrier tape material and surface resistance

item	Material
Cover Tape	PE (polyester film)
Carrier Tape	PC (Poly Carbonate +Carbon) or CPC (Clear Poly Carbonate)
Reel	PS (Poly Styrene)

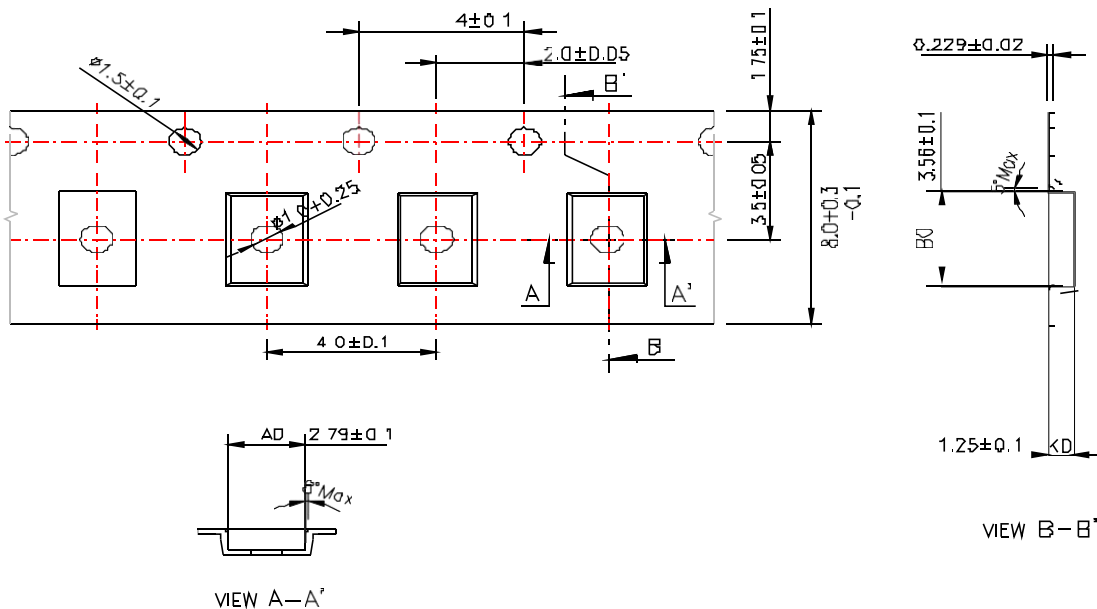
### 9.2 inner Box

Reel size	Quantity
13"	Max 20,000 pcs (Reel (10,000pcs) x 2ea)

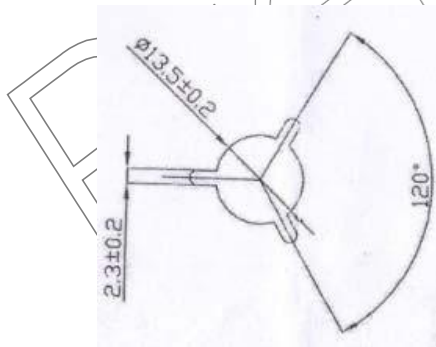
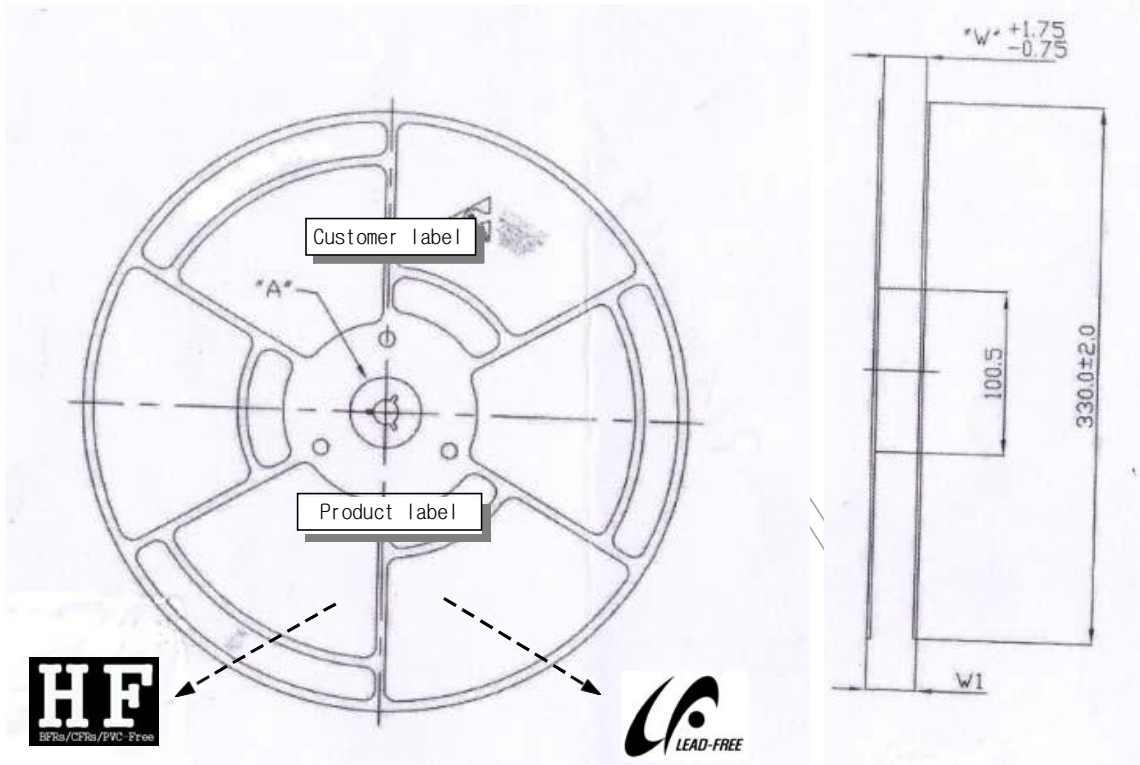
### 9.3 Outer Box

Inner Box	Quantity
3ea (Type 1)	Max 60,000 pcs
5ea (Type 2)	Max 100,000 pcs

### 9.4 Reel and Carrier tape dimensions(unit : mm)

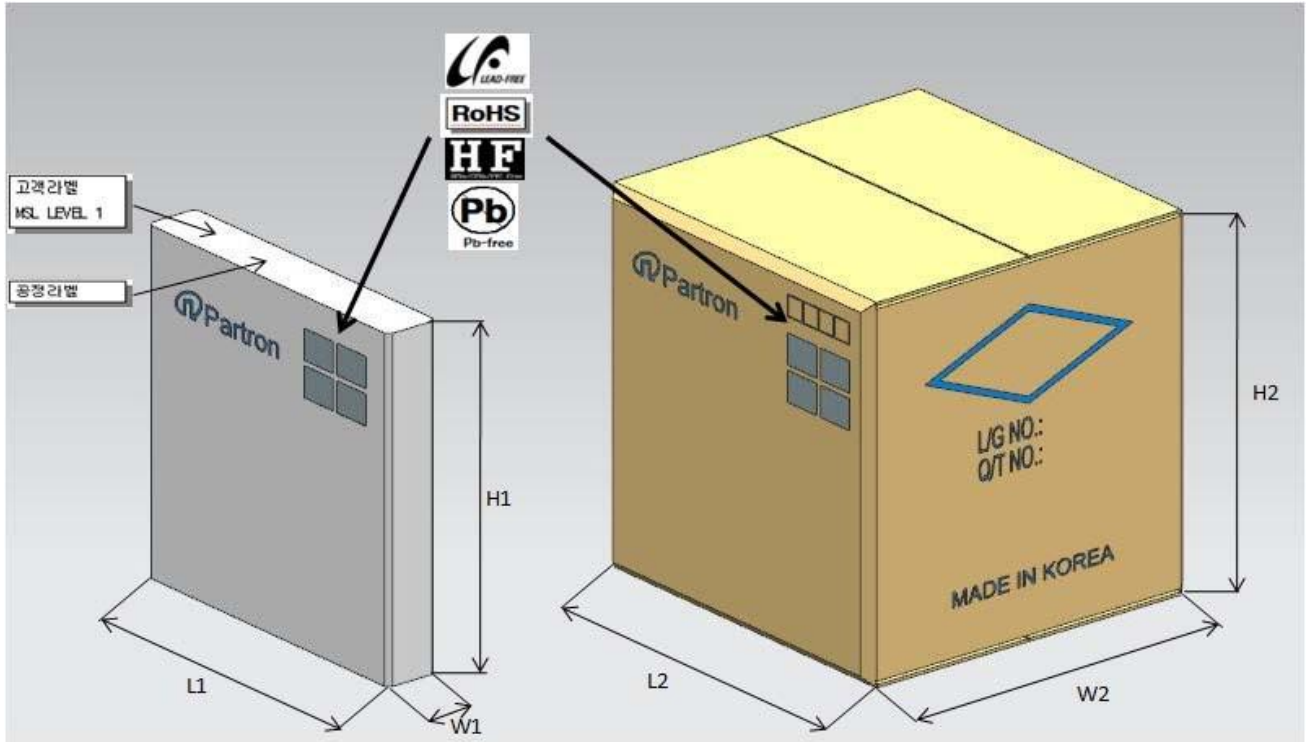


9.5 Reel Dimensions (unit : mm)



	W	W1
Size	9.5mm	11.5mm

9.7 Inner, outer box Dimensions (unit : mm)



Item	Inner Box		Outer Box		
	Mark	Dimension	Mark	Dimension (Type #1)	Dimension (Type #2)
Size	L1	330mm	L2	355mm	355mm
	W1	54mm	W2	200mm	355mm
	H1	330mm	H2	355mm	355mm
Material	Corrugated Cardboard		Corrugated Cardboard		
Quantity	20,000 EA (Reel * 2ea)			60,000 EA (Inner Box * 3ea)	100,000 EA (Inner Box * 5ea)



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