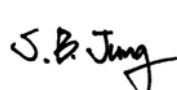





# APPROVAL SHEET

PRODUCT NAME	SMD CRYSTAL UNIT		
USER NAME			
USER PART NO.			
Provider	PARTRON		
PARTRON MODEL	CXC3X260000GHVRT3R		
User	Issued by	Checked by	Approved by
	PARTRON		
In Charge	J.S.B.	L.K.G	L.H.Y.
Division	R & D	Q C	R & D
MSL	LEAD FREE	Halogen-Free	
MSL LEVEL 1			

	Case
Fab	China/Yantai/Partron
Assembly	China/Yantai/Partron
Final Test & Packing	China/Yantai/Partron

**※ Please return one copy with approval to PARTRON**

**2017. 09. 26**

22-6, Seokwoo-dong, Hwaseong-si, Gyeonggi-do, Korea 445-170  
 TEL : 82-31-201-7750

## Contents

<b>1. Revision History</b>	<b>- - - 3</b>
<b>2. Electrical characteristics</b>	<b>- - - 4</b>
<b>3. Mechanical characteristics</b>	<b>- - - 6</b>
<b>4. A Primary test result</b>	<b>- - - 7</b>
<b>5. Reliability test</b>	<b>- - - 8</b>
<b>6. Construction</b>	<b>- - - 9</b>
<b>7. Notices</b>	<b>- - - 10</b>
<b>8. Packing</b>	<b>- - - 11</b>


PRELIMINARY

**1. Revision History**

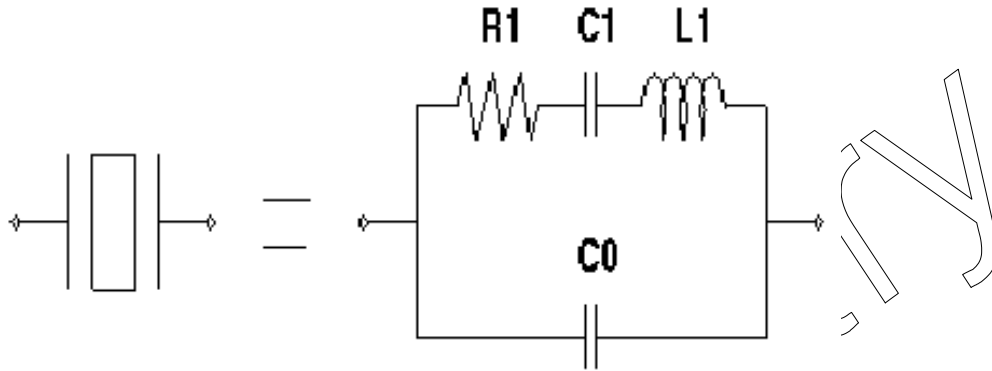
Rev.	Date	Rev. page	Revision Content and Reason	Remark
V1.0	'17.09.26	All Page	First-edition	

Preiminary

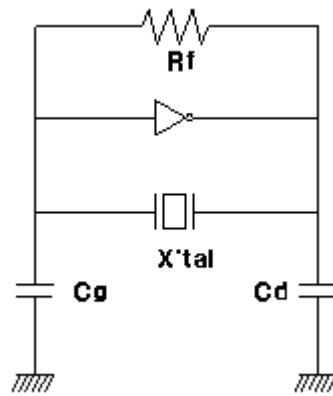
## 2. Electrical Characteristics

No.	Item	Symbol	Content
2.1	Frequency	$f_0$	26.0000 MHz
2.2	Frequency Tolerance 	$\Delta f/f_0$	$\pm 10$ ppm (@+25°C $\pm 2$ °C)
2.3	Temperature range	Storage	$T_{STG}$ -40 to 85°C
		Operating	$T_{OPR}$ -20 to 75°C
2.4	Frequency stability	$\Delta f/f_0$	$\pm 10$ ppm (-20°C to +75°C, Ref. @+25°C $\pm 2$ °C)
2.5	Drive level	DL	100 uW max.
2.6	Equivalent series resistance	R1	30Ω max.
2.7	Oscillation mode	O/T	Fundamental
2.8	Shunt capacitance	$C_0$	1.5 $\pm$ 0.2 pF.
2.9	Motional capacitance	$C_1$	10fF Max .
2.10	Load capacitance	$C_L$	7.3 pF
2.11	Aging	fa	$\pm 2$ ppm/year (@+25°C $\pm 2$ °C)
2.12	Insulation resistance	IR	500 MΩ min @ 100VDC
[REMARK]			

## 2-1 Crystal Equivalent Circuit and Application Circuit



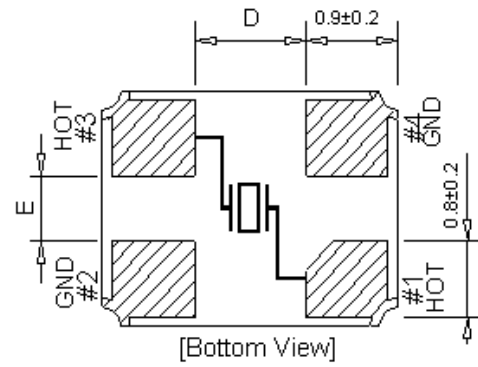
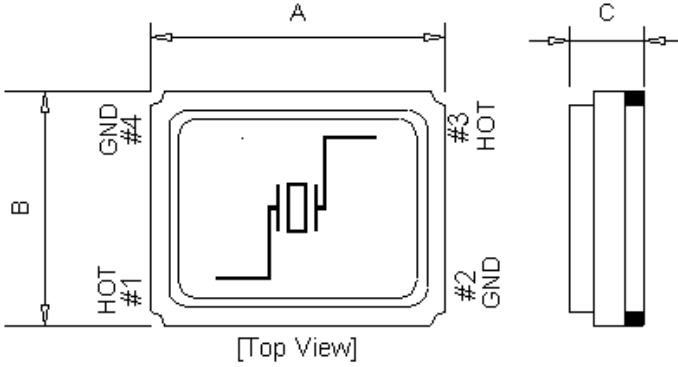
[Crystal and equivalent circuit]



[Application circuit for oscillation]

### 3. Mechanical characteristics

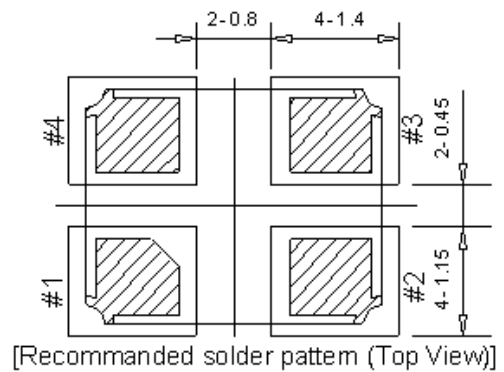
#### 3-1 Outline Dimensions and Pin connections



Size in mm				
A	B	C	D	E
3.20 ±0.10	2.50 ±0.10	0.75 max.	1.20 ±0.10	0.70 ±0.10

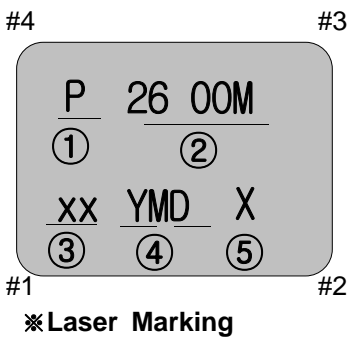
  

Pin connections	
#1	HOT
#2	GND
#3	HOT
#4	GND



PRELIM

#### 3-2 Marking and LOT No



ITEM	MARKING	REMARK
①	P	Partron logo
②	26 00M	Frequency: 26.0000MHz
③	xx	CRYSTAL CL (2 digit)
④	YMD	Y : the last 1 digit of year 1 to 9, A to V (A=10, H=17) M : 1 digit of month (Jan to Sept; 1 to 9, Oct; A,Nov B, Dec;C) D : 1 digit of day 1 to 9, A to V (A=10, V=31) EX) H11 = 2017.01.01, GAS = 2016.10.28
⑤	X	Internal code

#### 4. A Primary test result

##### 4-1 Electrical Characteristics Testing Data

No.	Item	Result	FL (ppm)	C0 (pF)	RR ( $\Omega$ )	C1 (fF)	L (mH)	TS (ppm/pF)
Spec	High	10.00	1.5 $\pm$ 0.2 pF	30.00	10.00	-	-	
	Low	-10.00		-	-	-	-	
	Max	Pass	-0.5	1.5	23.9	5.5	7.2	34.2
	Min	Pass	-2.3	1.4	13.1	5.2	6.8	32.6
	Average	Pass	-1.2	1.5	16.0	5.4	6.9	33.6
	Stdev	Pass	0.6	0.0	3.2	0.1	0.1	0.5
1		Pass	-1.5	1.5	13.1	5.5	6.8	34.0
2		Pass	-2.1	1.5	13.9	5.3	7.1	33.0
3		Pass	-1.0	1.5	13.5	5.2	7.2	32.6
4		Pass	-0.6	1.5	15.4	5.4	6.9	33.7
5		Pass	-1.2	1.5	15.4	5.5	6.8	34.2
6		Pass	-0.5	1.5	16.3	5.4	6.9	33.7
7		Pass	-2.3	1.5	18.6	5.5	6.9	33.7
8		Pass	-0.9	1.4	15.6	5.4	7.0	33.7
9		Pass	-1.0	1.5	23.9	5.4	6.9	33.6
10		Pass	-1.1	1.5	13.9	5.4	6.9	33.5

Preliminary

## 5. Reliability test

### 5.1 Environment Test

Contents	Condition	Remark
High temperature Storage	+125°C ±5°C, 240 hr	* 24 hour after Measure when finishes the test(25°C ±5°C)
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	

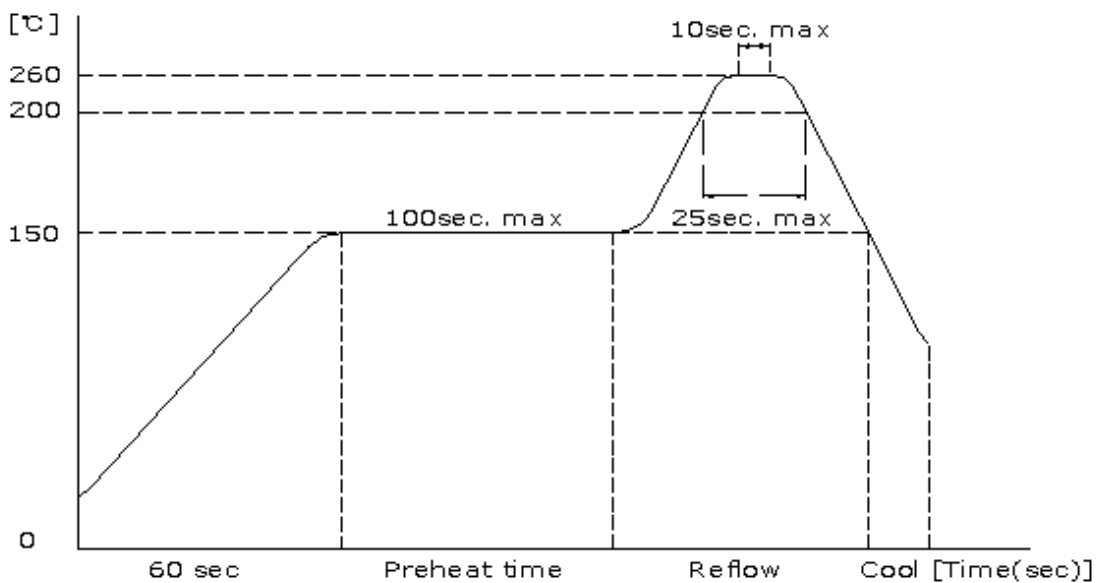
### 5.2 Thermal shock , Reflow Test

Contents	Condition	Remark
Thermal shock	-40°C ±5°C, +85°C ±5°C, 30 min, 32 cycle	* 24 hour after measure when finishes the test(25°C ±5°C)
REFLOW	Pre Heating 200±5°C , 30~60 sec Peak Heating 260°C ±5°C , 30sec Max	

### 5.3 Mechanical Test

Contents	Condition	Remark
Vibration	Frequency : 10~500Hz, 10 ×9.8m/s <sup>2</sup> (G) Sweep time 15min ,X.Y.Z each 5 times	* 24 hour after measure when finishes the test(25°C ±5°C)
Drop test	12 times falling at a 152cm height (falling with jig)	

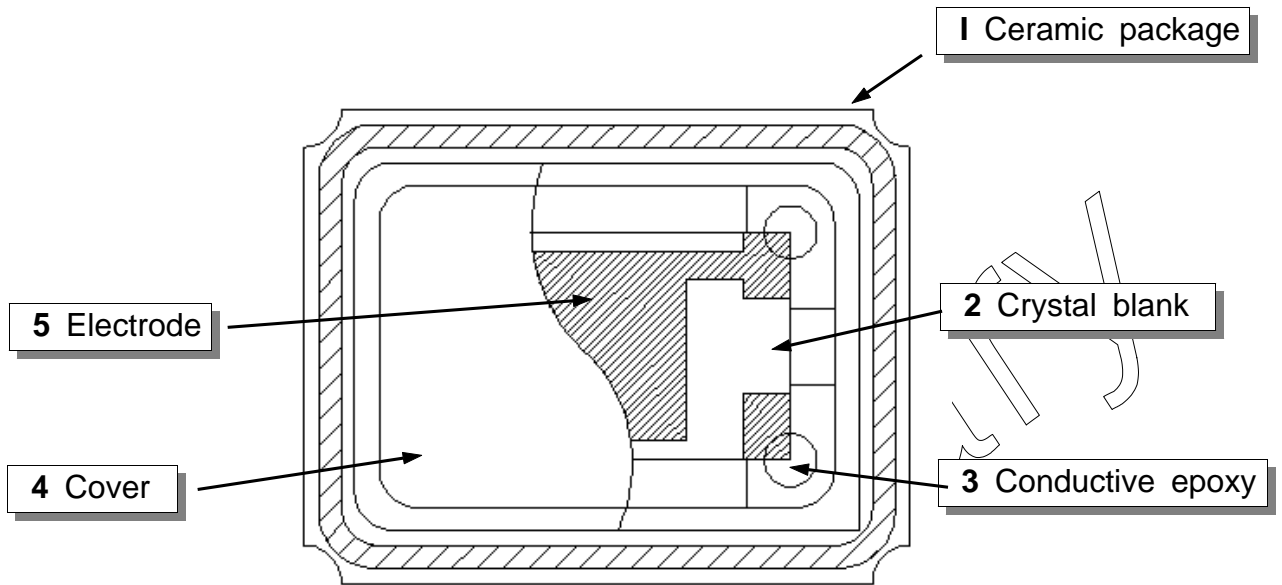
### 5.4 Soldering Condition



※ The maximum temperature guarantees to the 260°C±5°C (10sec. Max.)



## 6. Construction



Preliminary

No	item
1	Ceramic package
2	Crystal blank
3	Conductive Epoxy
4	Lid(Cover)
5	Electrode

## 7. Notices

7-1 Max. two(2) times reflow is allowed.

Once miss soldering is happen, hand work soldering by soldering iron is recommended.  
(+400°C x within 5 sec)

7-2 Ultrasonic vibration may cause deterioration and destruction of the components.

Please avoid ultrasonic cleaning

7-3 We recommend storing products at +15°C to +35°C and 25% R.H to 75% R.H

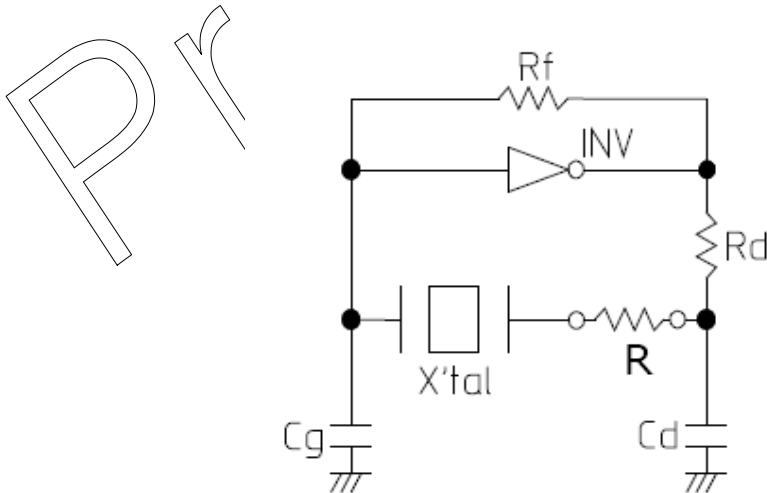
7-4 ESD Level : Class2(2000V ~ 4000V)

7-5 MSL LEVEL 1 (JEDEC J-STD-020C)

ITEM	Floor Life		Soak Requirements	
	Time	Conditions	Time	Conditions
1	Unlimited	=< 30°C/85%RH	165+5/-0	=< 85°C/85%RH

7-4 Unless adequate negative resistance is allocated in the oscillation circuit, start up time of oscillation may be increased, or no oscillation may occur. In order to avoid this, please provide enough negative resistance in the circuit design.

◎ How to check the negative resistance



- (1) Connect the resistor (R) to the circuit in series with the crystal resonator.
- (2) Adjust R so that oscillation can start (or stop).
- (3) Measure R when oscillation just start (or stop) in above (2).
- (4) Get the negative resistance  
 $-R = R + CI$  value
- (5) Recommended -R  
 $[-R] > CI \times 5$

## 8. Packing

### 8.1 Reel, carrier tape material

Item	Main Material
Cover Tape	PE (Polyester Film)
Carrier Tape	PC (Poly Carbonate +Carbon) or (Clear Poly Carbonate)
Reel	PS (Poly Styrene)

### 8.2 inner Box

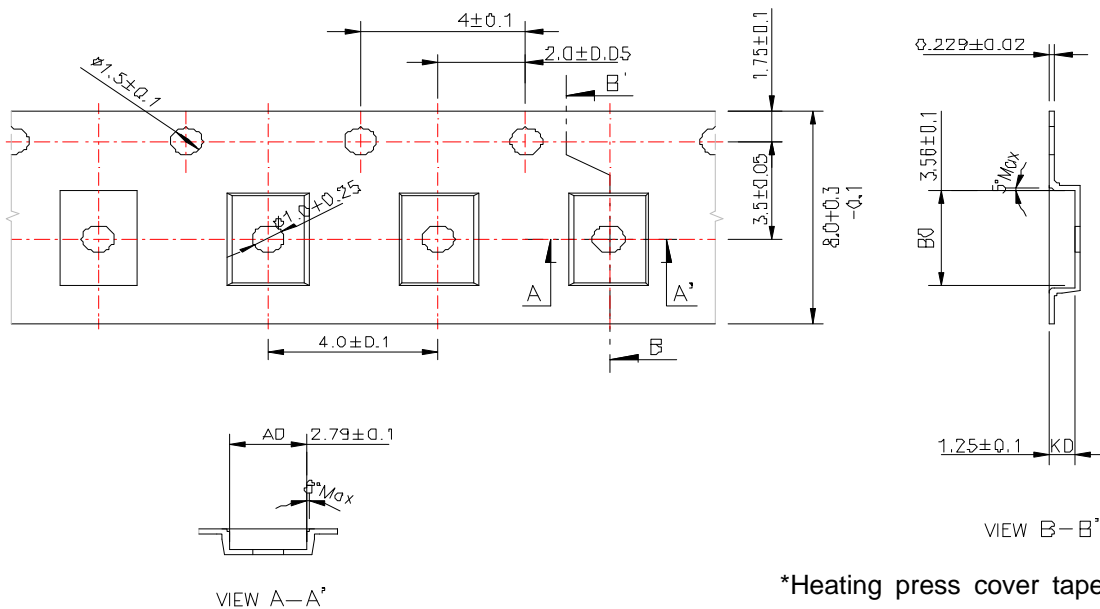
Reel size	Quantity
13"	( 5,000 or 10,000 pcs ) x 2set

### 8.3 Outer Box

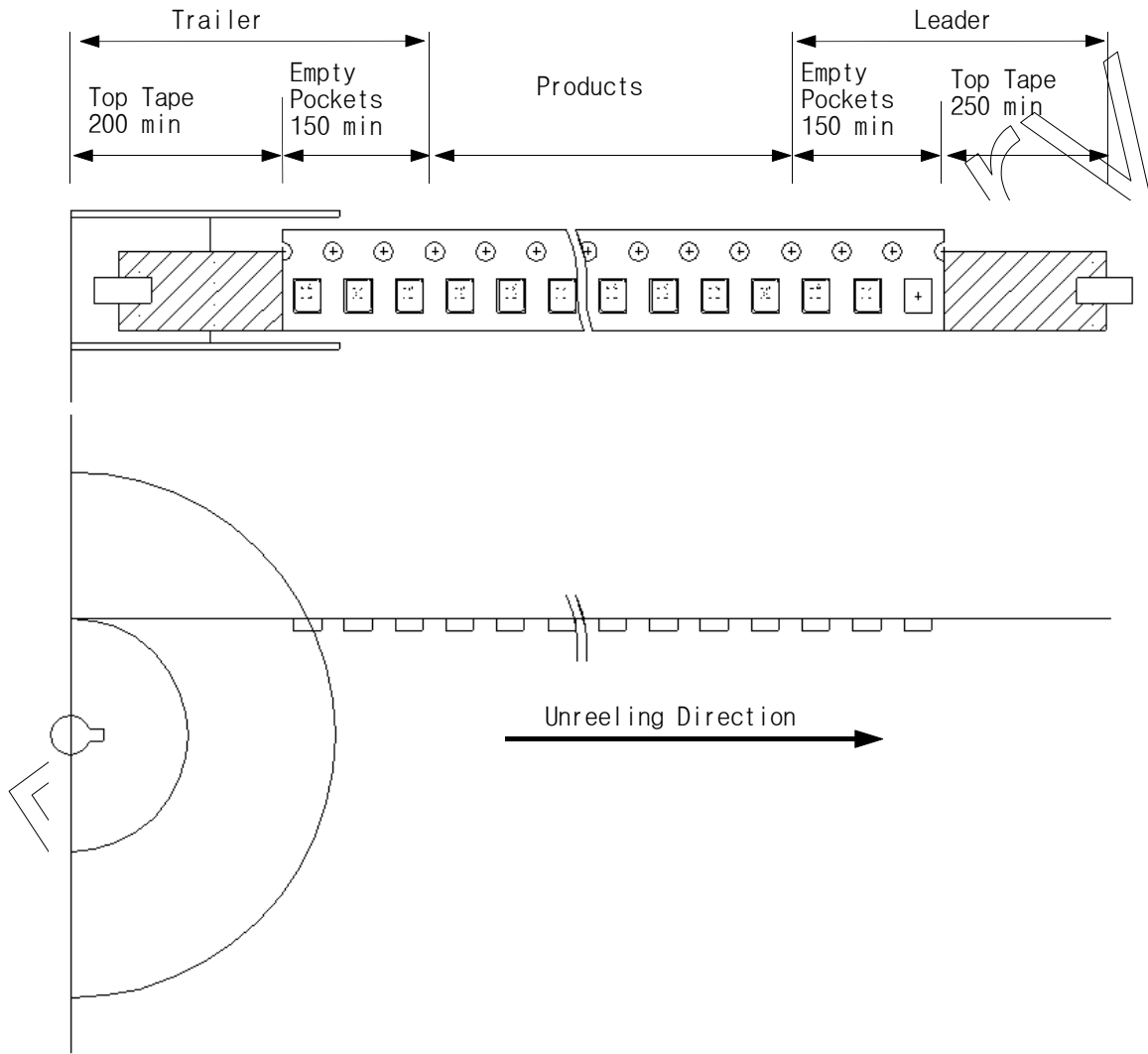
Inner Box	Quantity
3EA	60,000 pcs
5EA	100,000 pcs

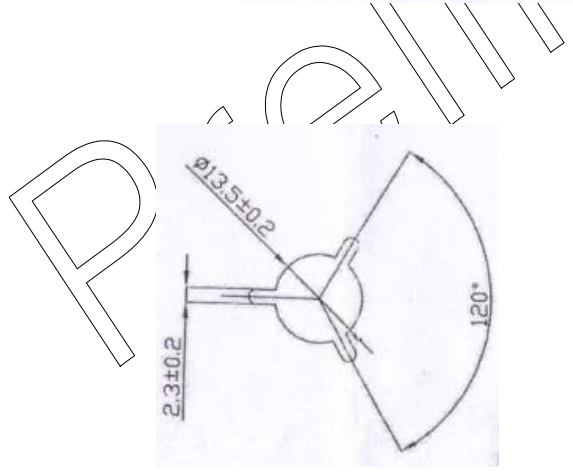
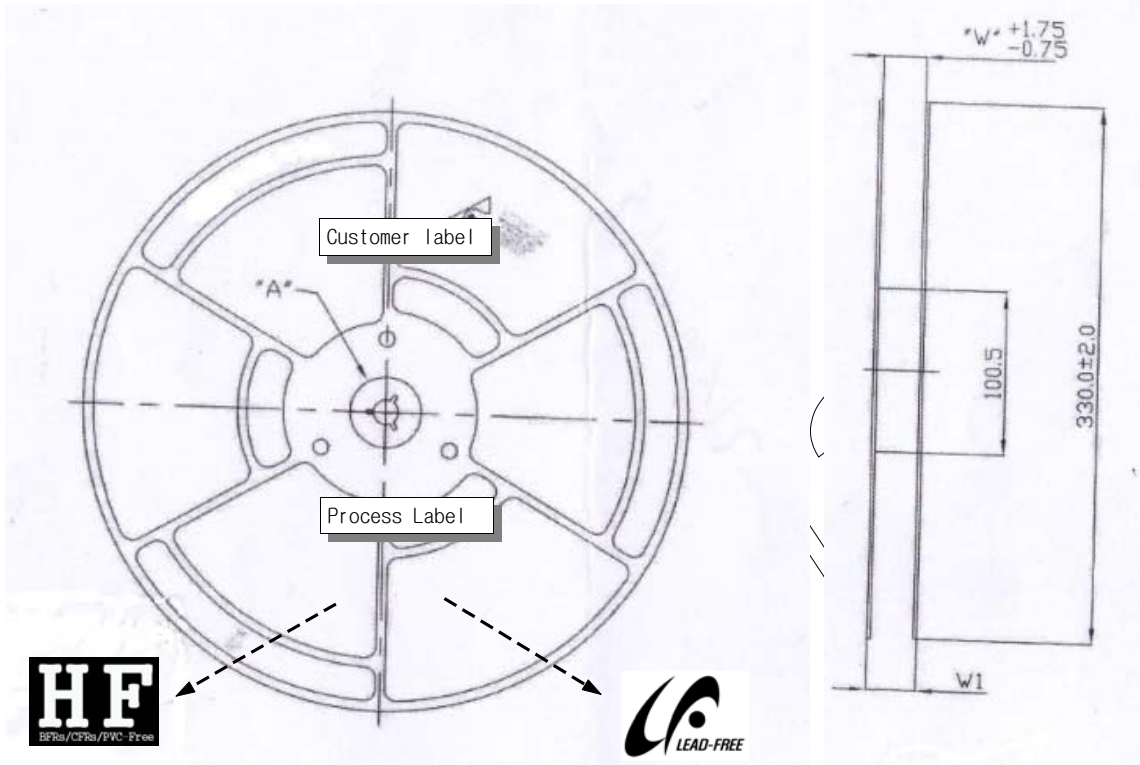
### 8.4 Reel and Carrier tape dimensions(unit : mm)

#### Carrier tape



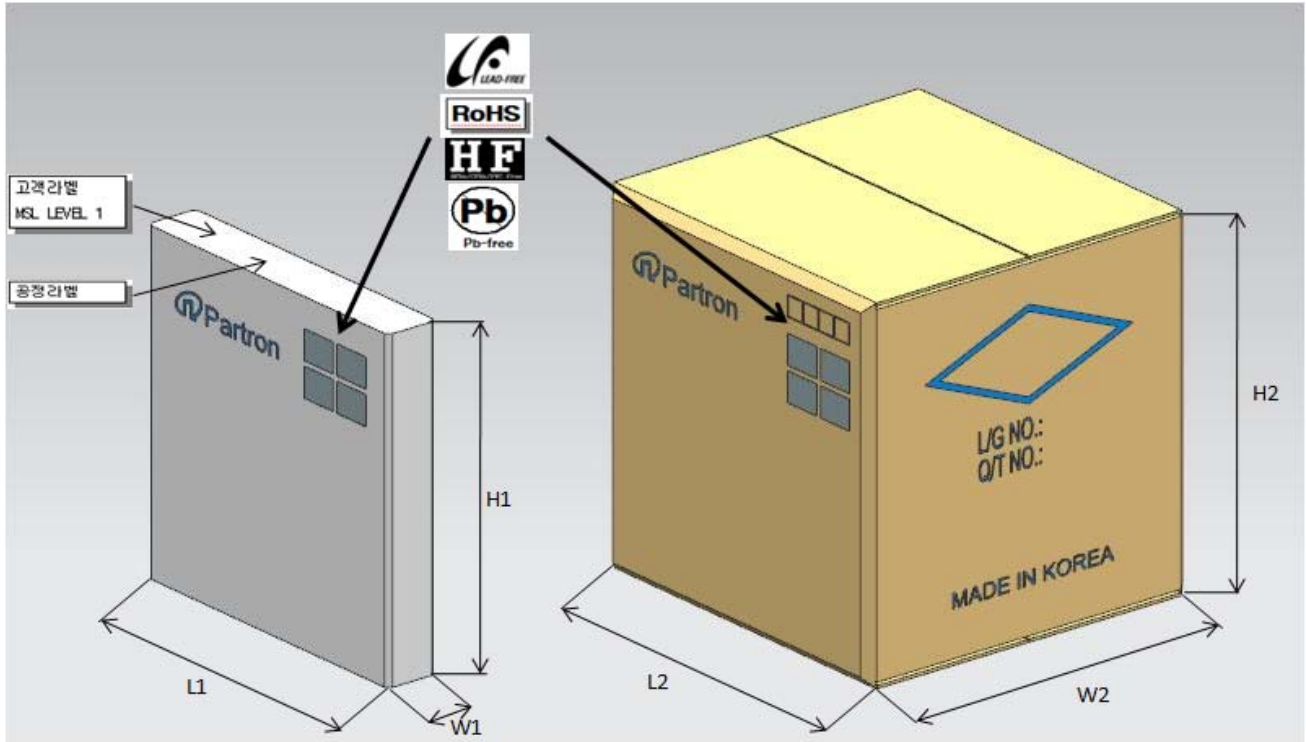
### 8.5 Tape and Reel





	W	W1
Size	9.5mm	11.5mm

8.6 Inner, outer box Dimensions (unit : mm)



DRAFT

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 * 2set)			60,000 EA (Inner Box * 3set)	100,000 EA (Inner Box * 5set)

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