soberton inc.

ST BUZZER

Acoustic Product Specification

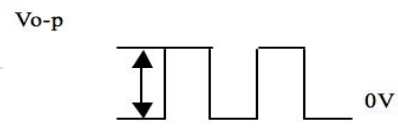
Product Number: ST-04BLA

Release | Revision: B/2018

CONTENTS

This document contains the technical specifications for the electromagnetic buzzer.

Specifications

Item	Unit	Specification	Condition
Rated Voltage	Vo-p	3.6	
Operating Voltage	Vo-p	2.0 ~ 4.0	
Mean Current	mA	85 Max.	Vo-p=½ duty, square wave
Coil Resistance	Ω	16 ±3	
Sound Output	dB	85	At 10cm rated voltage
Rated Frequency	Hz	2500	
Operating Temp	℃	-30 ~ +70	
Storage Temp	℃	-40 ~ +85	
Dimension	mm	L8.5 × W8.5 × H4.0	See attached drawing
Weight	gram	0.8	
Housing Material		LCP (Black)	
Leading Pin	SMD type	Tin plated (Sn)	See attached drawing
Environmental Protection Regulation		RoHS	

Test Condition

Temperature : +25±2 ℃ **Relative Humidity:** 65±5% **Air Pressure:** 86-106KPa

Mechanical Characteristics

Item	Test condition	Evaluation standard
Solderability	Lead terminals are immersed in the solder bath at +250±5℃ for 3±1 second.	90% min. lead terminals shall be wet with solder No interference in operation.
Soldering Heat Resistance	The product follows the reflow temperature curve to test its reflow thermal stability.	
Terminal Mechanical Strength	The force 10 seconds of 9.8N is applied to each terminal in axial direction.	No damage and cutting off
Vibration	The part shall be subjected to a vibration cycle of 10Hz to 55Hz to 10Hz in a period of 1 minute. Total peak amplitude shall be 1.52mm(9.3G). The vibration test shall consist of 2 hours per axis in each three axes (X,Y,Z).Total 6 hours.	After the test, the part shall meet specifications without any damage in appearance and performance except SPL. The SPL should be in ±10dBA compared with initial one.
Drop Test	The part is dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes (X,Y,Z). Total of 9 times.	

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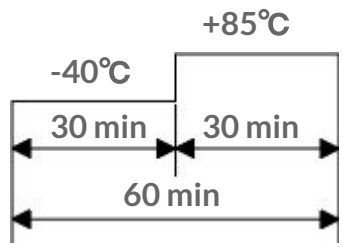
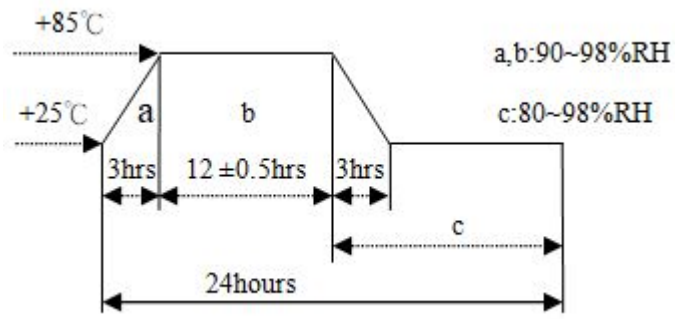
Environment Test

Item	Test condition	Evaluation standard
High Temperature Test (Storage)	The part is placed in a chamber at +85℃ for 96 hours.	After the test, the part shall meet specifications without any degradation in appearance and performance except SPL. After 4 hours at +25℃, the SPL should be in ±10dBA compared with initial one.
Low Temperature Test (Storage)	The part is placed in a chamber at -40℃ for 96 hours.	
Thermal Shock	The part shall be subjected to 5 cycles. Each cycle shall consist of; 	
Temp/Humidity Cycle Test	The part shall be subjected to 5 cycle shall be 24 hours and consist of; 	

Standard Test Condition:

a) Temperature: +5~+35℃

b) Humidity: 45~85%

c) Pressure: 86~106KPa

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Reliability Test

Item	Test condition	Evaluation standard
Operating life test	**Ordinary Temperature** The part shall be subjected to 96 hours of continuous operation at +25±10˚C. **High Temperature** The part shall be subjected to 72 hours of continuous operation at +70℃ at 3.6V, 2500Hz applied. **Low Temperature** The part shall be subjected to 72 hours of continuous operation at -30℃ at 3.6V, 2500Hz applied.	After the test, the part shall meet specifications without any degradation in appearance and performance except SPL. After 4 hours at +25℃, the SPL should be in ±10dBA compared with initial one.

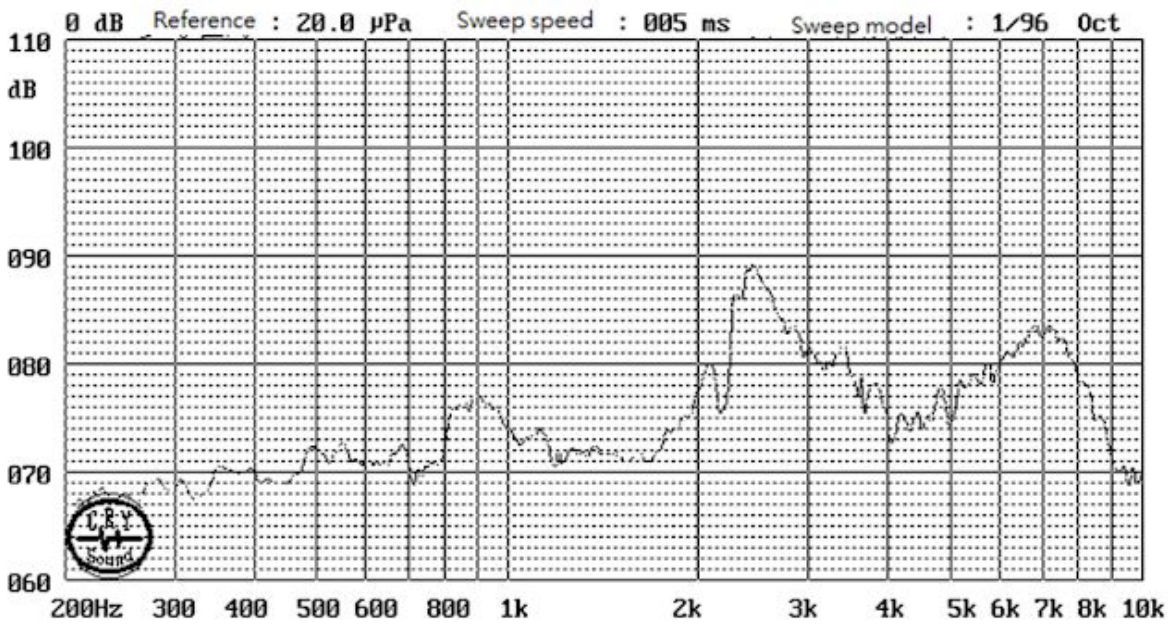
Standard test condition:

a) Temperature: +5~+35℃

b) Humidity: 45~85%

c) Pressure: 86~106KPa

Typical Frequency Response Curve



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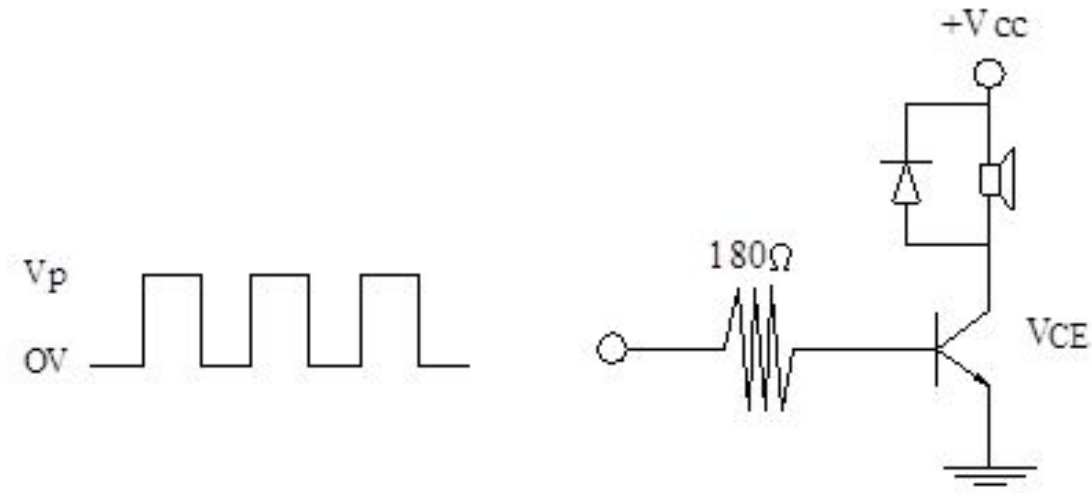
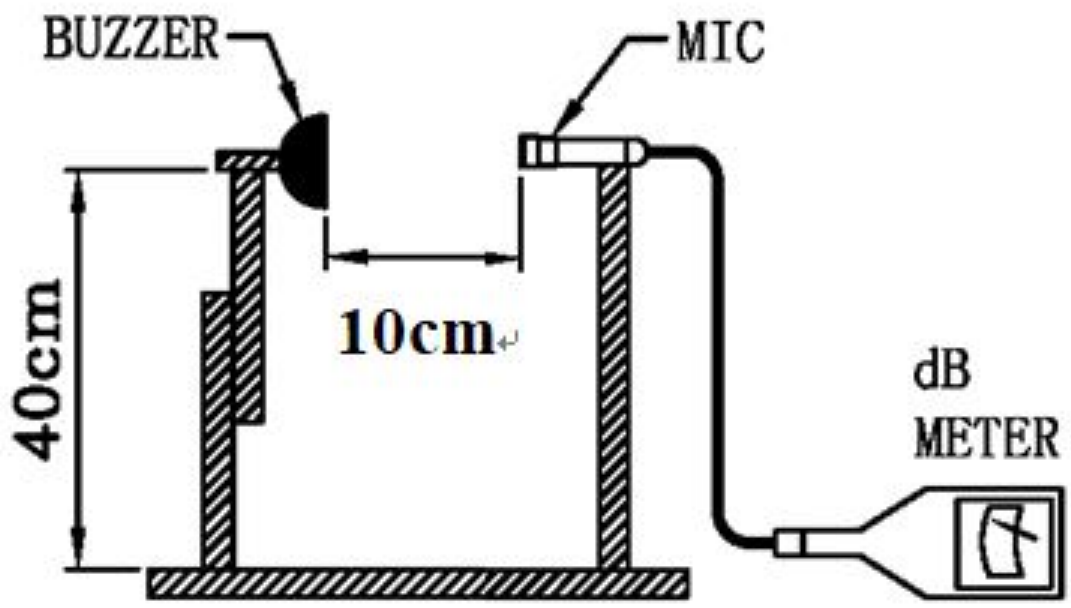
Measurement Method



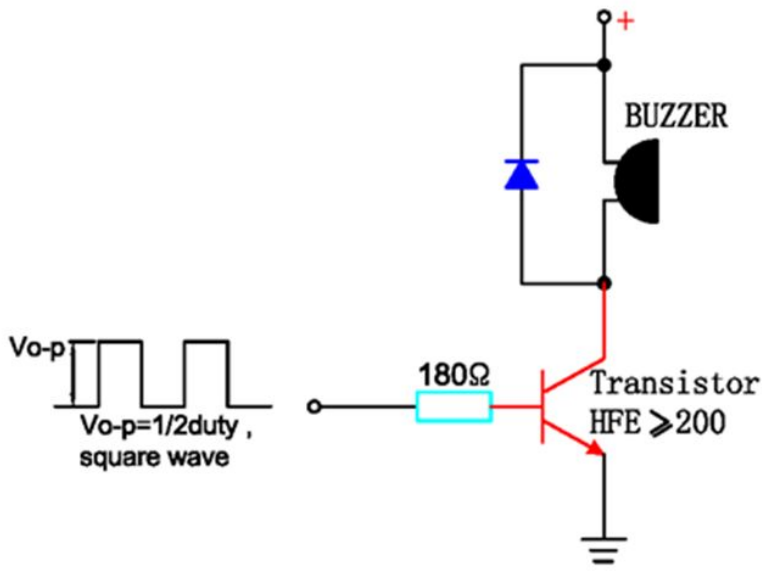
Measurement Method:
S.P.L Measuring Circuit
Input Signal: 3.6 Vo-p, square wave, ½ duty, 2500Hz



Mic: RION S.P.L meter UC30 or equivalent
S.G: Hewlett Packard 33120A Function Generator or equivalent

Recommended Driving Circuit

The base current Ib should high enough so that it saturates the collector current of the transistor with the CB load.



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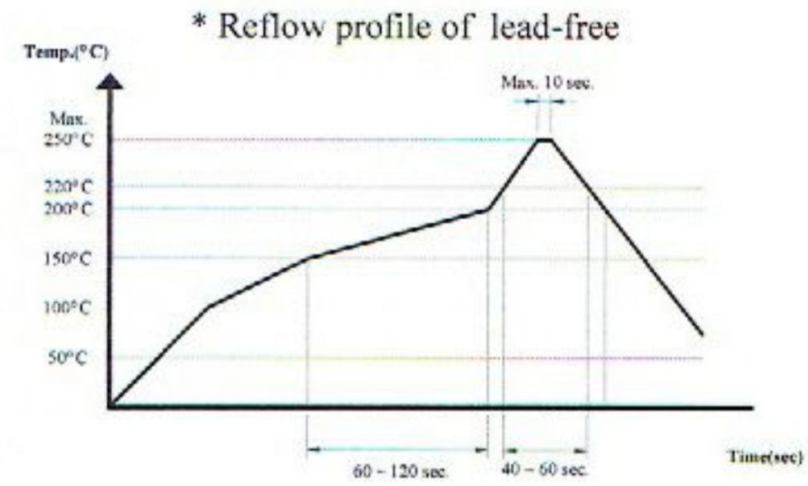
Soldering Conditions

Recommendable reflow soldering condition is as follows (Reflow soldering is twice)
Note: It is requested that reflow soldering should be executed after heat of product goes down to normal.

Recommendable wave soldering condition is as follows:
Note 1: It is requested that reflow soldering should be executed after heat of product goes down to normal temperature.
Note 2: Peak reflow temperature of 250˚C maximum of 10 seconds, with a maximum duration of 40-60 seconds between 220˚C and 250˚C



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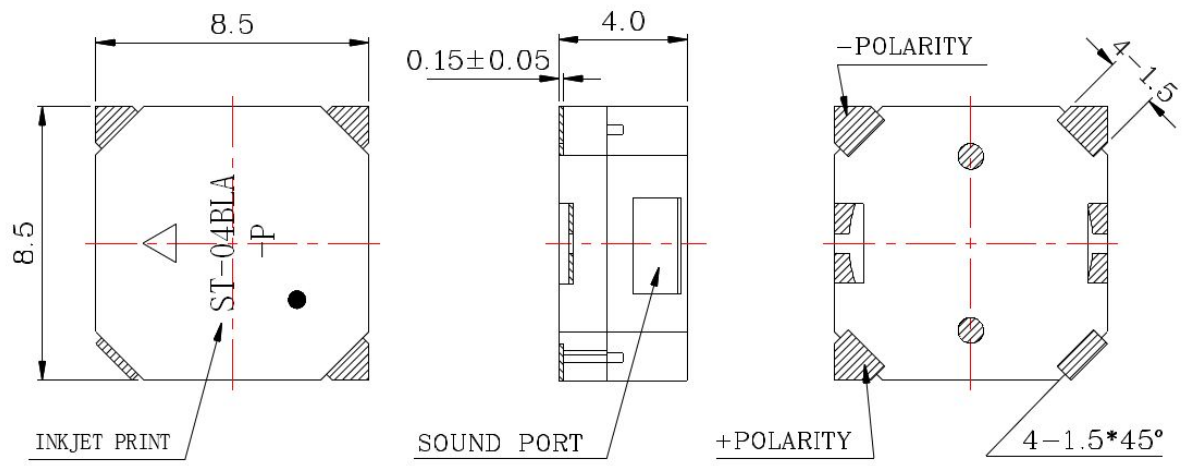
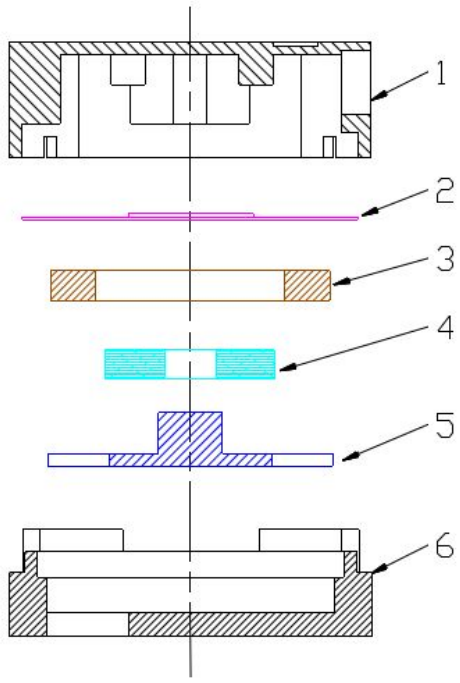
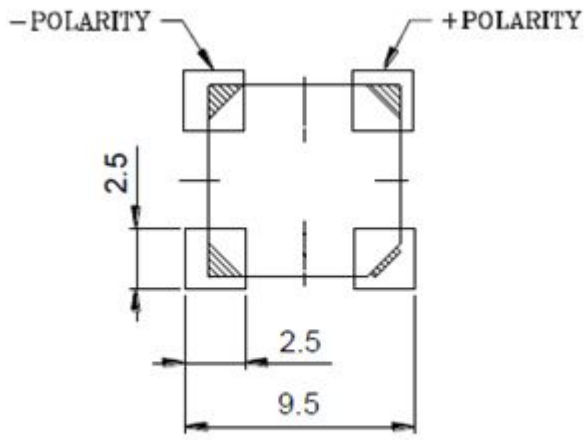
Dimensions

Tolerance: ±0.5 (unit: mm)







P.C.B Layout

No.	Part Name	Material	Quantity
1	Cover	LCP	1
2	Diaphragm	Nickel Alloy + Ferrum	1
3	Magnet ring	NdFeB	1
4	Coil	Copper	1
5	Frame	Iron	1
6	Case	LCP	1

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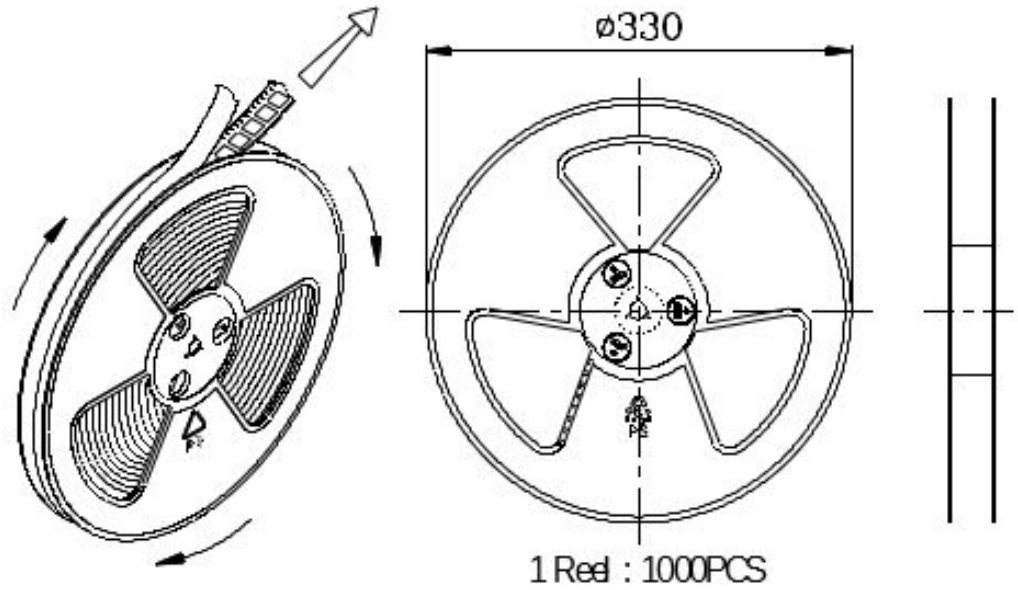
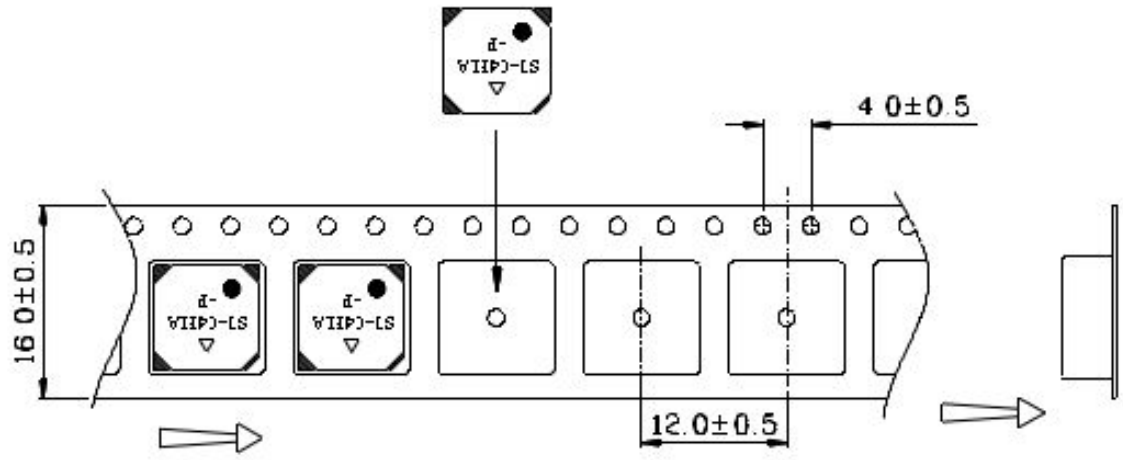
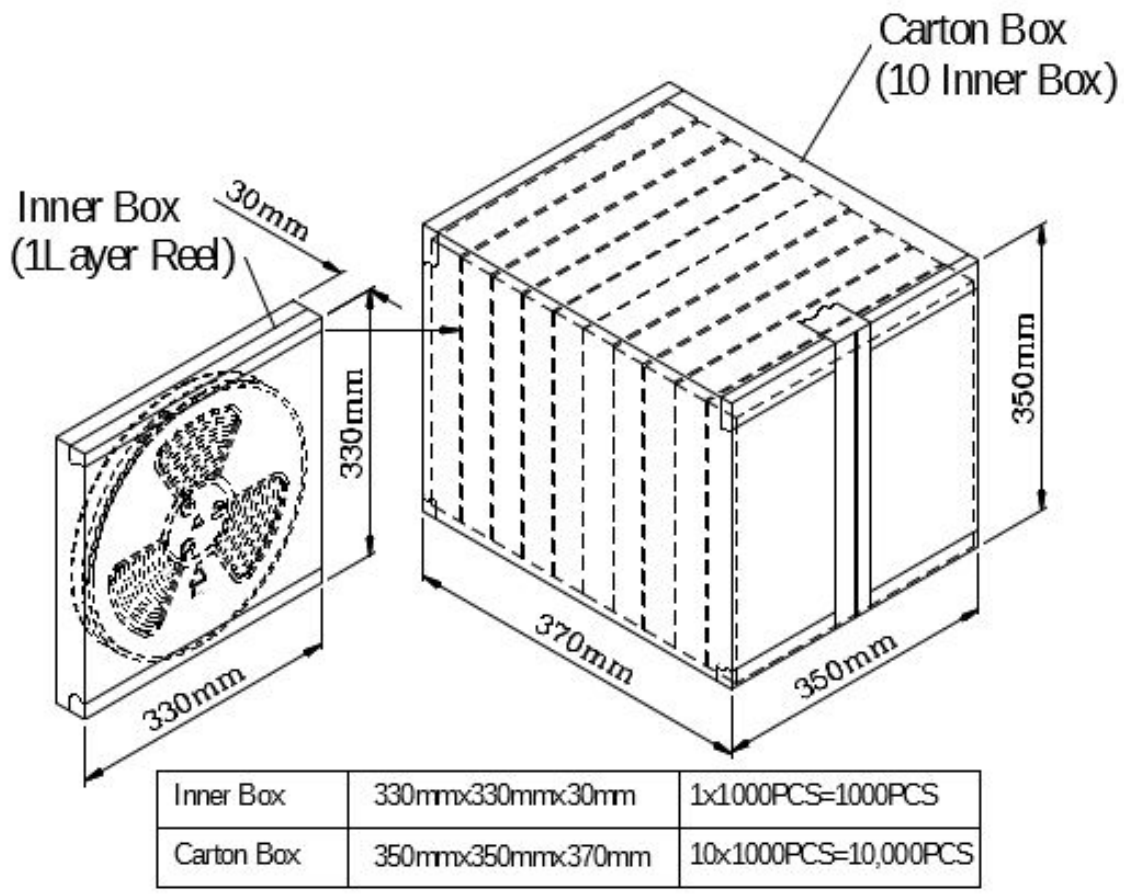
Packing







Inner Box	330mmx330mmx30mm	1x1000PCS=1000PCS
Carton Box	350mmx350mmx370mm	10x1000PCS=10,000PCS