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## SPECIFICATION FOR APPROVAL

### Receiver

Part Number	OWR-05049T-38D
Note	This item was compliance with the following requirements: 1. RoHS directive 2. REACH
Customer P/N	

Ole Wolff	Signature / Date	Prepared	Checked	Approved
		Nathan Chen 2018.03.02		

Customer	Signature / Date	Confirmation		

#### REVISION NOTES:

Date	Rev.	Description of Revision
2018.03.02	00	Initial Release

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## 1. SCOPE

THIS SPECIFICATION IS APPLIED FOR A DYNAMIC SPEAKER FOR EARPHONE.

## 2. TEST CONDITIONS

TEMPERATURE : 18°C ~ 22°C

HUMIDITY : 65% +/-5% (R.H.)

ATMOSPHERE : 860 ~ 1060 hPa

## 3. GENERAL REQUIREMENTS

OPERATING TEMPERATURE RANGE: -20° C ~ 65° C

STORAGE TEMPERATUR RANGE: -20° C ~ 70° C

## 4. MECANICAL LAYOUT & DIMENSIONS

DIMENSIONS : SHOWN IN FIGURE 5.

NET WEIGHT: 0.4± 0.1g

## 5. ELECTRICAL AND ACOUSTICAL CHARACTERISTICS

1	Impedance	38Ω ± 15% at 5kHz with 0.195V input.
2	Sound Pressure Level	97.5±3 dB at 1kHz with input 0.195V/2cc coupler (0dB=20μPa) Measure setup as shown in FIG.1
3	Binning	Binning at 100Hz with input 0.195V/2cc coupler (0dB=20μPa) Bin A: 112dB~110dB, dot mark = Red; Bin B: 109.99dB~108dB, dot mark = White; Bin C: 107.99dB~106dB, dot mark = Blue; Bin D: 105.99dB~104dB, dot mark = Gold.
4	Frequency response	Mask as shown in FIG.3.
5	Resonance frequency	2800± 15% Hz with 0.195V input.
6	Total Harmonic Distortion (THD)	As shown in FIG.3.
7	Input Power	(Nom. /Max.): 5mW/10mW
8	Rub & Buzz	Driver must be free of audible noise at 0.44V sine wave between 50Hz-10kHz.

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## 6. Reliability Test Requirements.

Sensitivity difference at 1000Hz shall be within  $\pm 3\text{dB}$  from initial value after each test. The measurement shall be done after minimum 1 hours and maximum 2 hours with room conditioning of  $18^\circ\text{C} \sim 25^\circ\text{C}$ .

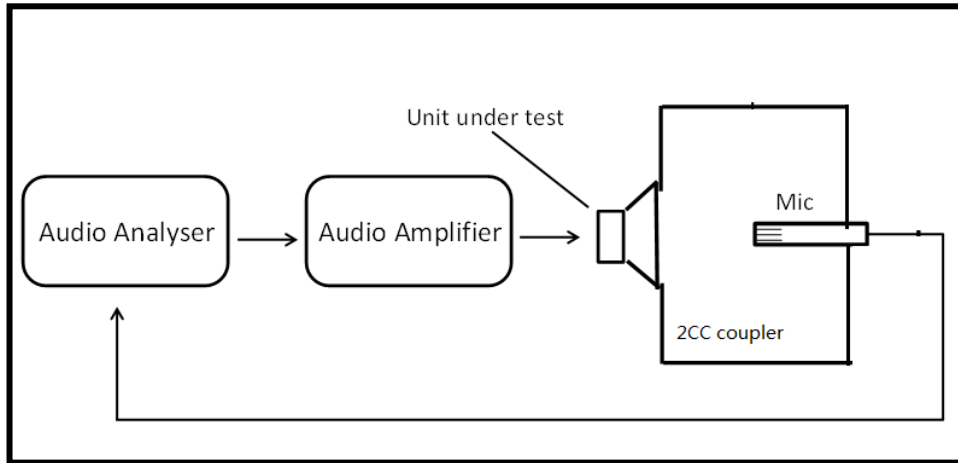
No.	ITEMS	TEST CONDITION	
1	HIGH TEMPERATURE TEST STORAGE	Temperature	$70 \pm 3^\circ\text{C}$
		Duration	96hrs
2	LOW TEMPERATURE TEST STORAGE	Temperature	$-20 \pm 3^\circ\text{C}$
		Duration	96hrs
3	HIGH TEMPERATURE HUMIDITY TEST	Temperature	$40 \pm 3^\circ\text{C}$
		Humidity	90%--95%(RH)
		Duration	96hrs
4	DROP TEST	Height	1m to hardwood floor
		Total times	10 times
5	TEMPERATURE CYCLE TEST	Temperature	$-20 \pm 3^\circ\text{C} \leftrightarrow 55 \pm 3^\circ\text{C}$
		Duration	2hours, 5mins, 2hours
		Cycles	5 cycles
6	MAX. SHORT TERM POWER TEST	Test signal and Temperature	White noise / $25^\circ\text{C}$
		Test input power	10mW/0.62V
		Cycles	10 minutes without damage but not guarantee for no rattling
7	RATED POWER TEST	Test signal and Temperature	White Noise / $25^\circ\text{C}$
		Test input power	5mW/0.44V
		Duration	96hrs

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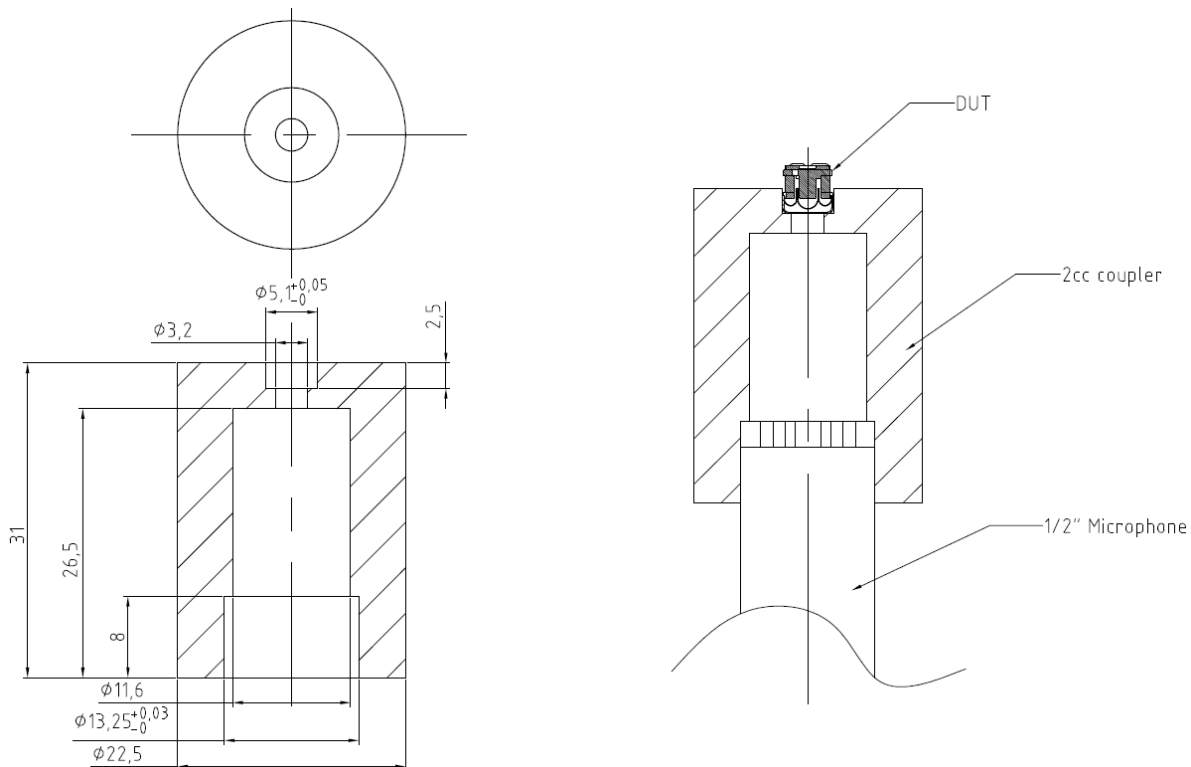
## 7. Test setup (FIG.1)

### MEASUREMENT CIRCUIT FOR DYNAMIC SPEAKER



NO	EQUIPMENT	REMARKS
1	UNIT UNDER TEST	OW RECEIVER
2	2CC COUPLER	OLE WOLFF 2CC COUPLER
3	AUDIO POWER AMPLIFIER	LEM DPA300
4	ANALYZER	LISTEN SOUNDCHECK

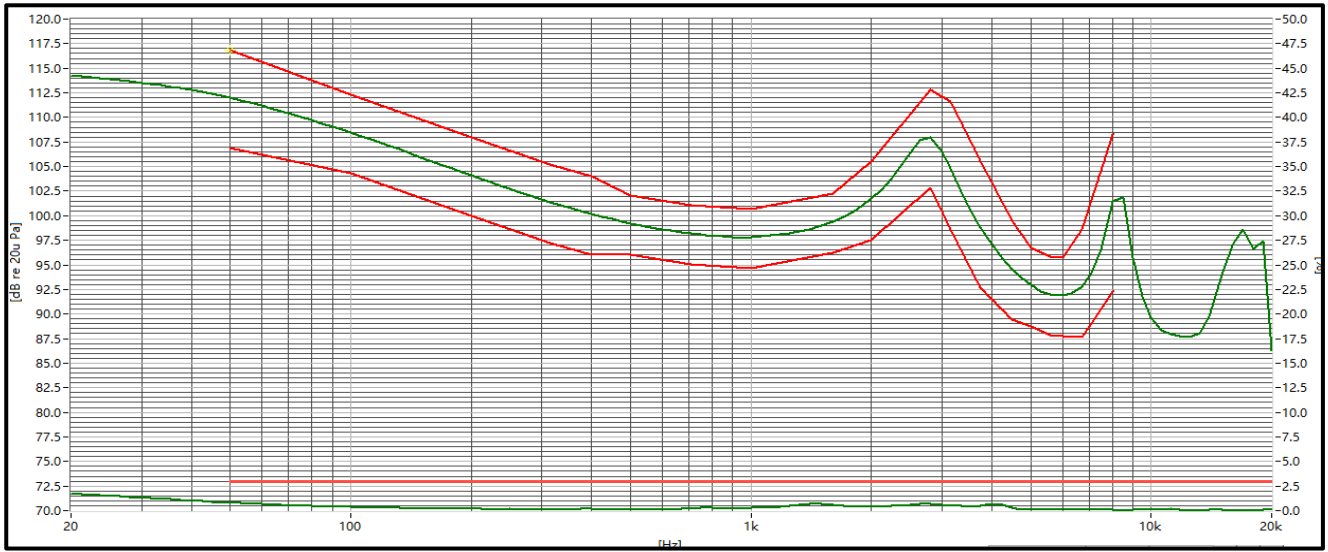
## 8. Test jig (FIG.2)



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### 9. Standard Frequency Response Curve & Standard THD (FIG.3)



#### FR Mask

<b>F. POINT</b>	50	100	200	315	400	500	710	1000	1600	2000	Hz
<b>Upper limit</b>	+5	+4	+4	+4	+4	+3	+3	+3	+3	+4	dB
<b>Lower limit</b>	-5	-4	-4	-4	-4	-3	-3	-3	-3	-4	dB

<b>F. POINT</b>	2800	3150	4000	4500	5000	5600	6300	7100	8000	Hz
<b>Upper limit</b>	+5	+7	+7	+5	+4	+4	+4	-	+7	dB
<b>Lower limit</b>	-5	-6	-6	-5	-4	-4	-4	-5	-9	dB

#### THD Mask

<b>F. POINT</b>	50	10000	Hz
<b>Upper limit</b>	3	3	%

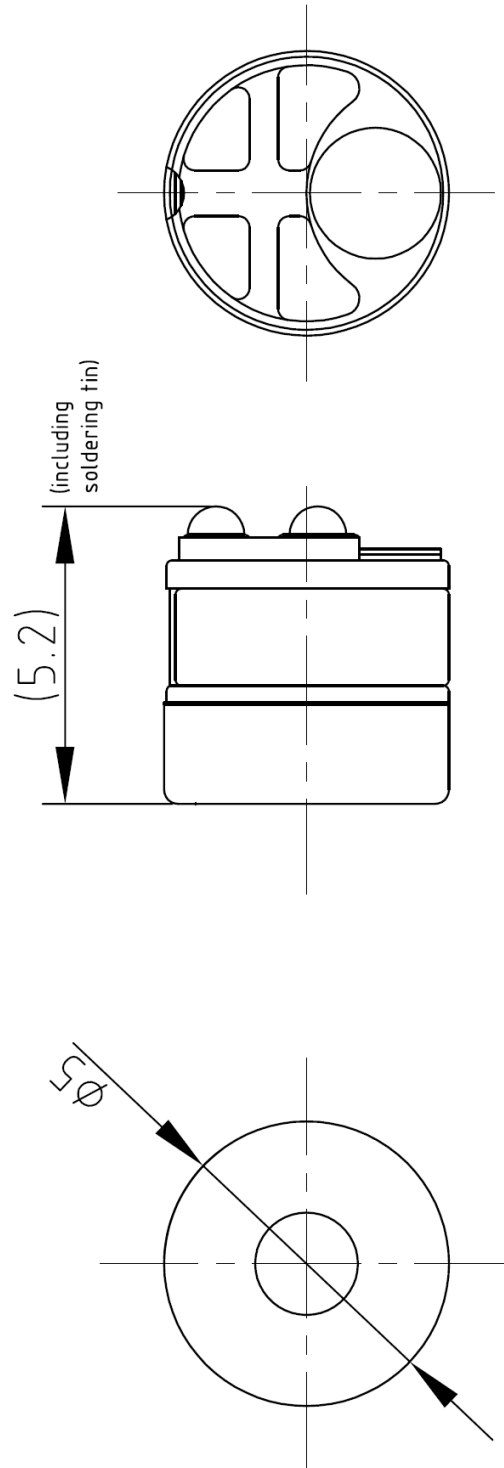
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### 10. DIMENSION (Fig.4)

Unit: mm

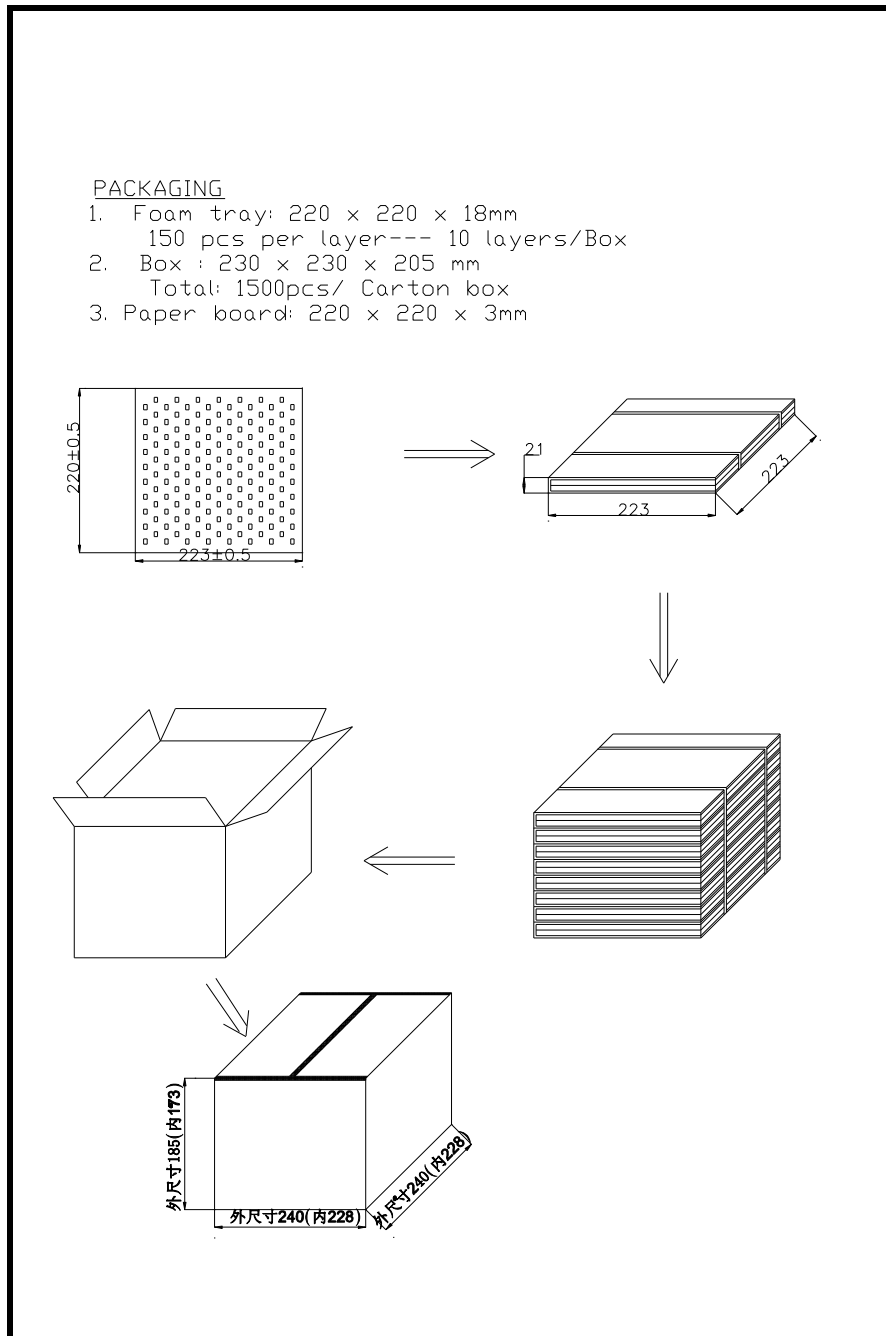
Tolerance: +/-0.3



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## 11. PACKING (Fig.5)



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