VECO VANSONIC ENTERPRISE CO. LTD.
ELITALIA
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fax 02.2626.1009 www.elitaliaweb.it

1.	**MODEL:**	**21RF01** **Metal Cover, Low Flux Leakage**
2.	Dimension	Outer Diameter **21** mm.
		Height **Refer to Drawing** mm. Weight **5** Grams.
3.	Magnet	Materials **Rare Earth** Size: **8. 0** ϕ × **1. 0** mm.
4.	Impedance	**150** Ω ± **15** % At **1200** Hz.
5.	Power Rating	Normal **20** mW. Maximum **40** mW.
6.	Output Sound Pressure Lever	**105** ± **3** db / 1mW · At 1000 Hz. (0db=20uPa=0.0002uBar)
	(S.P.L.)	Measured by Artificial Ear B&K 4153 (IEC-318).
7.	Frequency Range	**300 ~ 5000** Hz. Refer figure 1 for frequency window setting.
8.	Distortion	**5** % Maximum over the range **300 ~ 5000** Hz at **20** mW.
9.	Abnormal Sound Test	Must be Normal Tested By **1.8** Volts. Sine Wave.
10.	Load Test	White Noise With Weighted filter **1.8** Volts. (RMS.) **96** Hours.
11.	Magnetic Flux Leakage	Maximum **3.5** mT (35 Gauss) in hearing side (metal cover surface).
12.	Storage Temperature	**- 40ºC ~ + 60ºC**
13.	Operating Temperature	**- 40ºC ~ + 50ºC**

Environment & Mechanical test.

14.	High Temperature	+ 60 ± 3 °C Humidity Random for 96 Hours.
15.	Low Temperature	– 20 ± 3 °C Humidity Random for 96 Hours.
16.	Humidity	+ 40 ± 3 °C Relative Humidity 90 ~ 95 % 96 Hours.

After test leave at room temperature for 1 hour, SPL shall not deviate by ± 3 db from pre-test measurement, and meet above spec. item 6. 7. 8. 9. 10.

17.	Temperature Cycle test	– 20 ~ + 60 °C 4 Cycles Temperature test.

After test leave at room temperature for 1 hour, SPL shall not deviate by ± 4 db from pre-test measurement, and meet above spec. item 6. 7. 8. 9. 10.

18.	Vibration	Frequency 30 ± 15 Hz, Amplitude 1.5 mm for 3 Hours.
19.	Drop test	75 CM free falling on Concrete floor, 10 times.

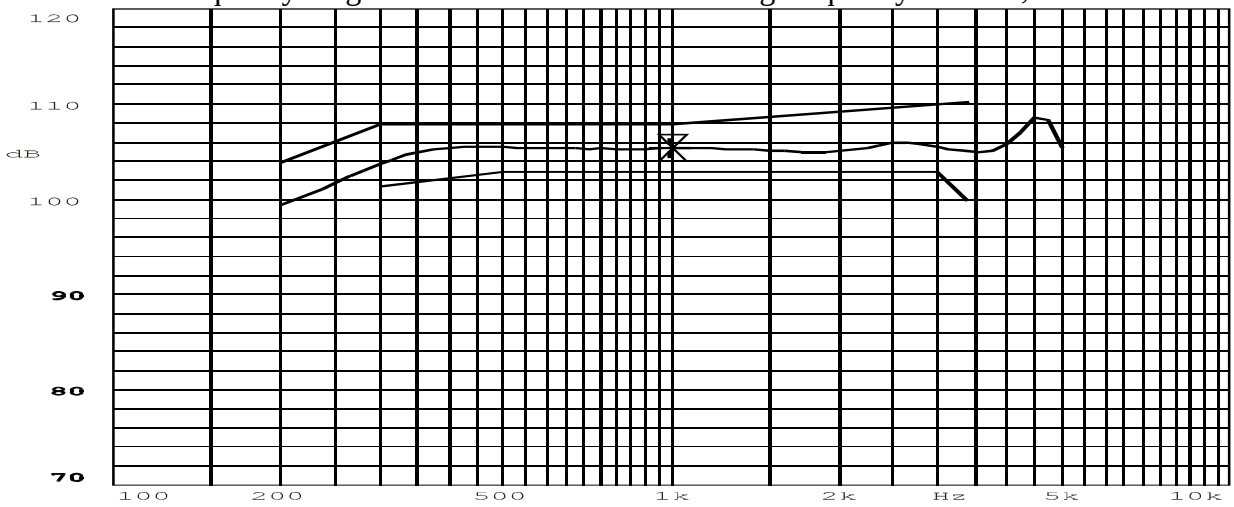
After test, SPL shall not deviate by ± 3 db from pre-test measurement, and meet above spec. item 6. 7. 8. 9. 10.

Please refer to next pages for more detailed testing method.

Frequency Window and Test method.

1. Frequency Window

The receiver frequency range should be within the following frequency window,



Frequency(HZ)	Upper limit(dB)	Lower limit(dB)
200	-1.5	
300	2.5	-4
500	2.5	-2.5
1000	2.5	-2.5
3000	*	-2.5
3400	+5.5	-5.5

* = limits for intermediate bevels are found by drawing a straight line between breaking points in a LOG/LOG scale.

2. Environment test – High temperature.

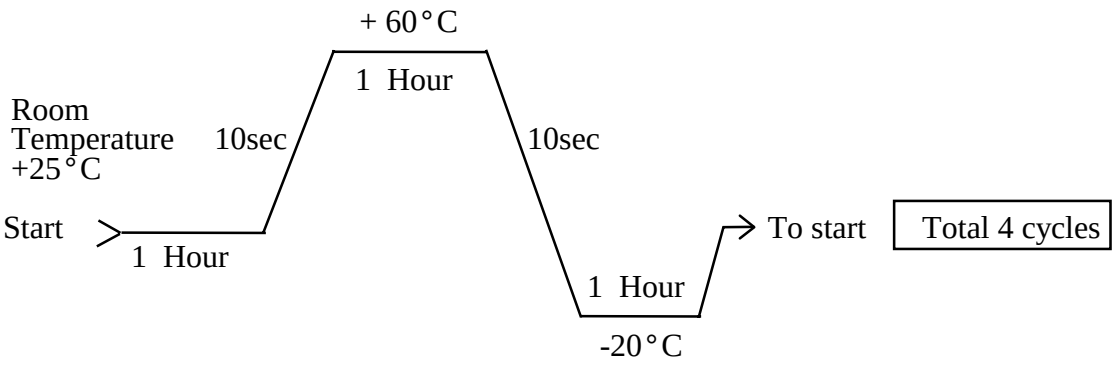
After exposure the receiver in the + 60 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

3. Environment test - Low temperature.

After exposure the receiver in the – 20 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

4. Environment test - Temperature cycle.

After exposure the receiver in the chamber, temperature cycle setting as below shows, SPL should not deviate by ± 4 db, compare with pre-test measurement.

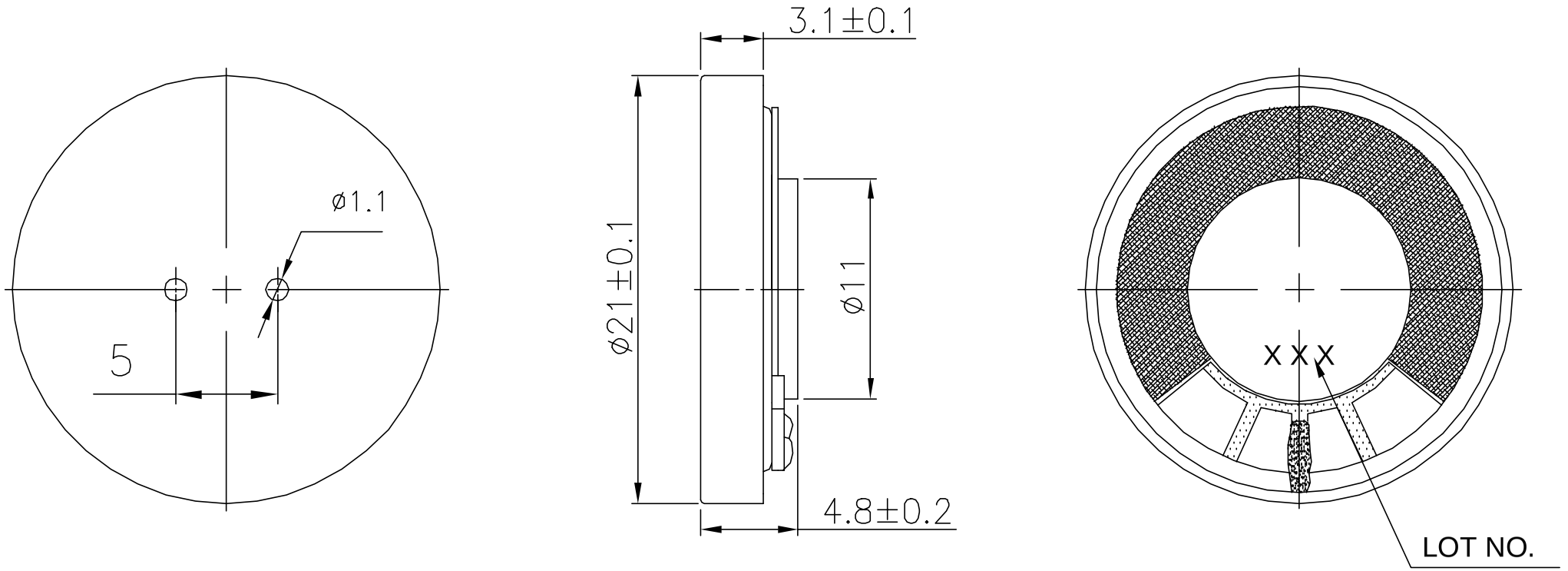


5. Environment test - Humidity.

After exposure the receiver in the + 40 ± 3 °C, relative humidity 90% ~ 95% chamber for 96 hours, then leave the receiver at room temperature for 6 hours, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

6 Load test

Receiver should not fail after apply 20 ~ 20K Hz while noise rated power input (RMS), 96 hours.



VERSION	DATE	DESCRIPTION
V 1.0	00.09.28	
V 1.1	00.12.14	

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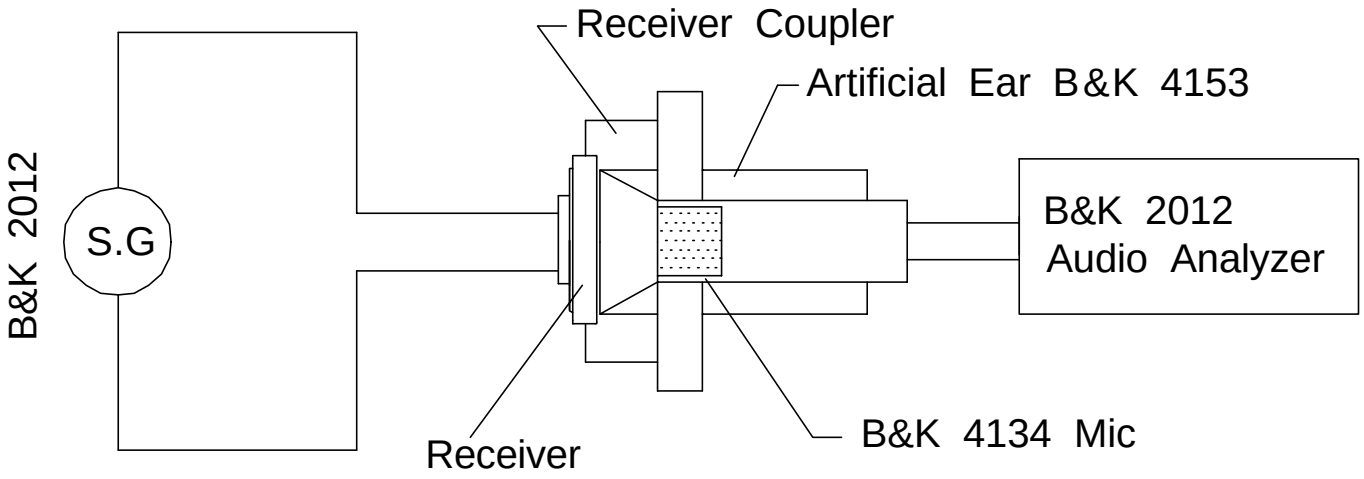
TEL:+886-2-29626335 FAX:+886-2-29625220

Title: 21RF01-150

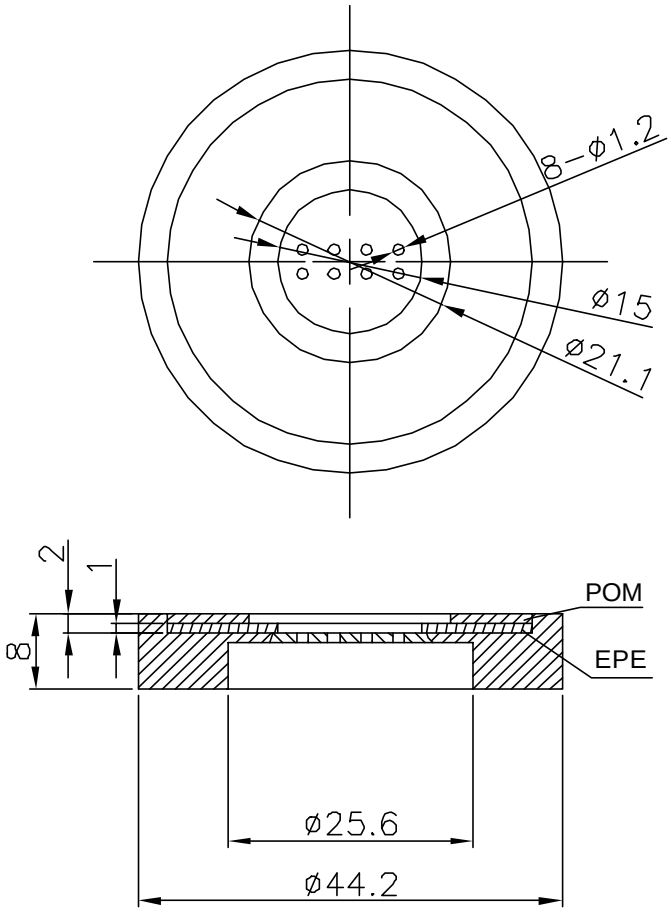
G:\VECO\21\21RF\SPEC\21RF01-2.DWG

Unit: mm	Scale:	Appr.:	
Tol.: 其余公差±/2IT13		CHK.:	Dwg.:

Measuring Setup



Receiver Coupler



V 1.0	01.01.06	Receiver Coupler for P21RF11	
VERSION	DATE	DESCRIPTION	

Title: Receiver Coupler P21RF

G:\VECO\21\21RF\SPEC\RECEIVR COUPLER P21RF01.DWG

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Unit: mm	Scale:	Appr.:	
Tol.:		CHK.:	Dwg.:

VECO Vanson Electronics(Nanhai) Co., Ltd.

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1.	**MODEL:**	**21RF11-1**
2	Dimension & Weight	Outer Diameter ϕ 21mm
		Height **Refer to drawing** Weight **6** Grams
3	Magnet	Materials **Rare Earth** Size **8.4ϕ ×1.0** mm
4.	Nominal Impedance	**150** Ω ± 15 %, At **1200** Hz.
5.	Power Rating	Normal **0.02** Watts Maximu **0.04** Watts Sine Wave.
		Normal Watts Maximu Watts Square
6.	Output Sound Pressure Level (S.P.L.)	**108** ± 3 db/ **0.001** At1000Hz (0db=20uPa=0.0002uBar)
		Measured by Artificial Ear B&K 4153 (IEC-318).
7.	Frequency Range	**300** ~ **3400** Hz. Average SPL – 10 db.
8.	Distortion	**5** % Maximum over the range **300** ~ **3400** Hz at **20** mW.
9	Abnormal Sound test	Must be Normal Tested By **1.73** Volts. Sine Wave.
10	Load Test	White Noise **1.73** Volts. (RMS.) **96** Hours.
11	Polarity	Diaphragm shall move Forward while Apply a Positive DC Signal to the " + " or " Marked " Terminal.

Above Measuring condition under temperature : 25~35℃ R.H. 25 ~75%. According to standard GB/T9396-1996

Mechanical and vibration test

12	High Temperature	+ 60 ± 2 °C Humidity Random for 96 Hours. (GB2423.2-81)
13	Low Temperature	– 20 ± 2 °C Humidity Random for 96 Hours. (GB2423.1-81)
14	Humidity	+ 40 ± 2 °C Relative Humidity (RH) 90 ~ 95 % 48 Hours.
15	Vibration	Frequency 30 ± 15 Hz, Amplitude 1.5 mm for 3 Hours. (GB11606.8-89)
16	Drop test	75 CM free falling on Concrete floor, 10 times. (GB2423. 8-81)

After test leave speakers at room temperature for 1 hour, SPL shall not deviate by ± 3 db from pre-test

17	Temperature Cycle test	– 25 ~ + 60 °C 4 Cycles Temperature test. (GB5170.18-87)

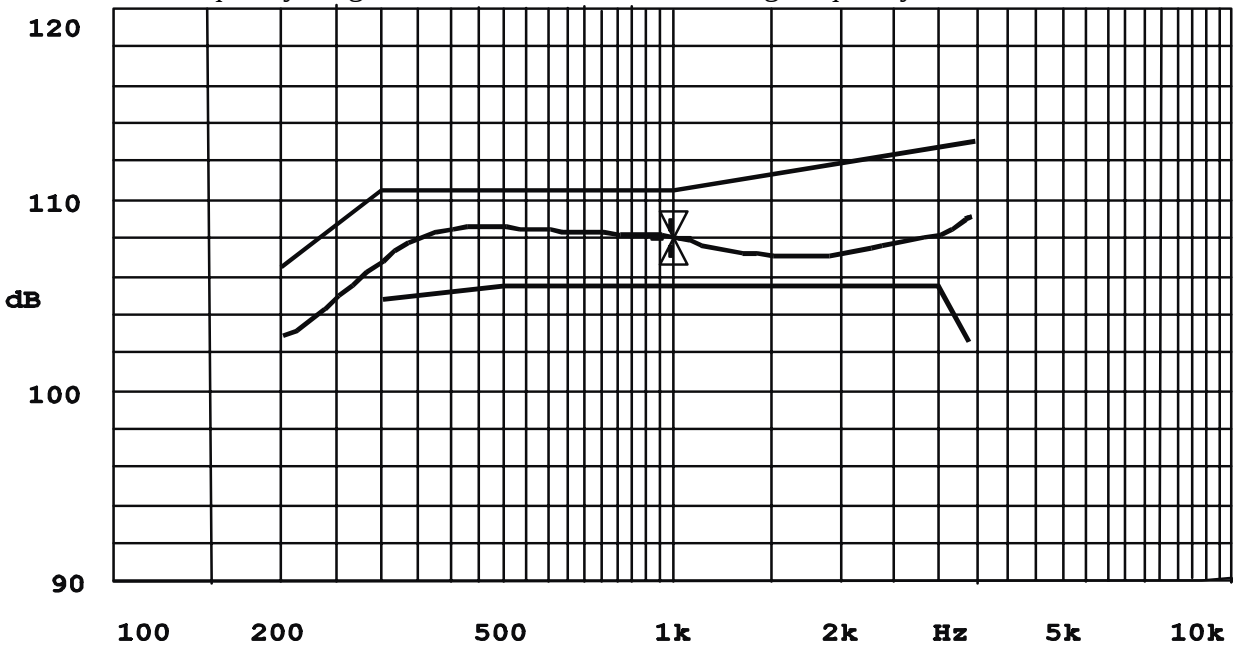
After test leave speakers at room temperature for 1 hour, SPL shall not deviate by ± 3 db from pre-test Measurement, and meet above spec. item 6. 7. 8. 9. 10.

Please refer to next pages for more detailed testing method.

Frequency Window and Test method.

1. Frequency Window

The receiver frequency range should be within the following frequency window,



Frequency(HZ)	Upper limit(dB)	Lower limit(dB)
200	-1.5	
300	2.5	-3
500	2.5	-2.5
1000	2.5	-2.5
3000	*	-2.5
3400	+5.5	-5.5

* = limits for intermediate bevels are found by drawing a straight line between breaking points in a LOG/LOG scale. 108dB=0dB

2. Environment test – High temperature.

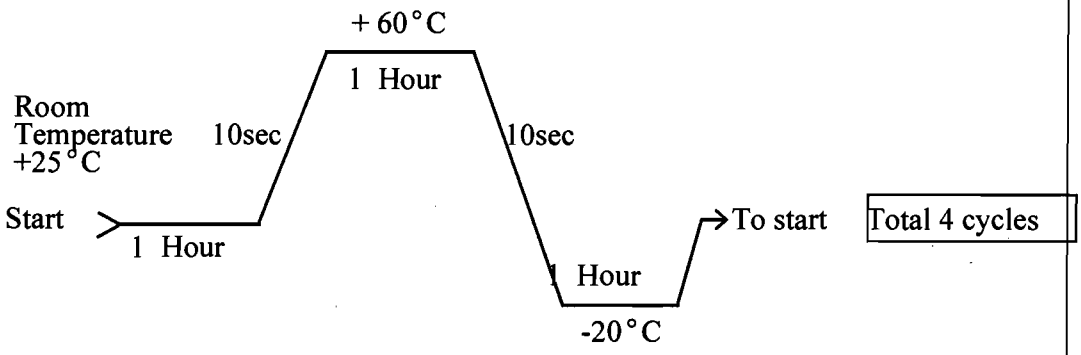
After exposure the receiver in the + 60 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

3. Environment test - Low temperature.

After exposure the receiver in the – 20 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

4. Environment test - Temperature cycle.

After exposure the receiver in the chamber, temperature cycle setting as below shows, SPL should not deviate by ± 4 db, compare with pre-test measurement.



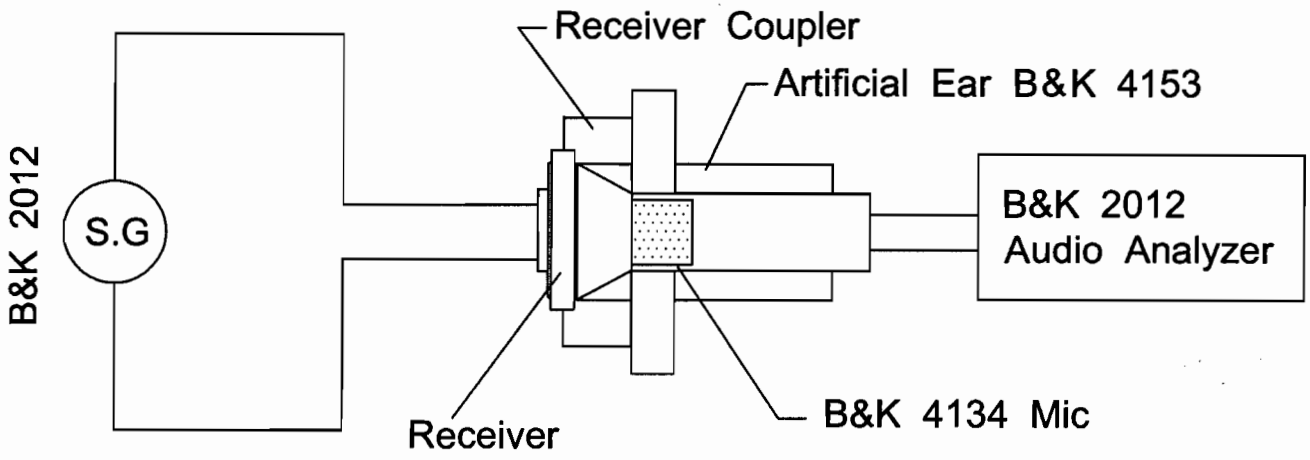
5. Environment test - Humidity.

After exposure the receiver in the + 40 ± 3 °C, relative humidity 90% ~ 95% chamber for 96 hours, then leave the receiver at room temperature for 6 hours, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

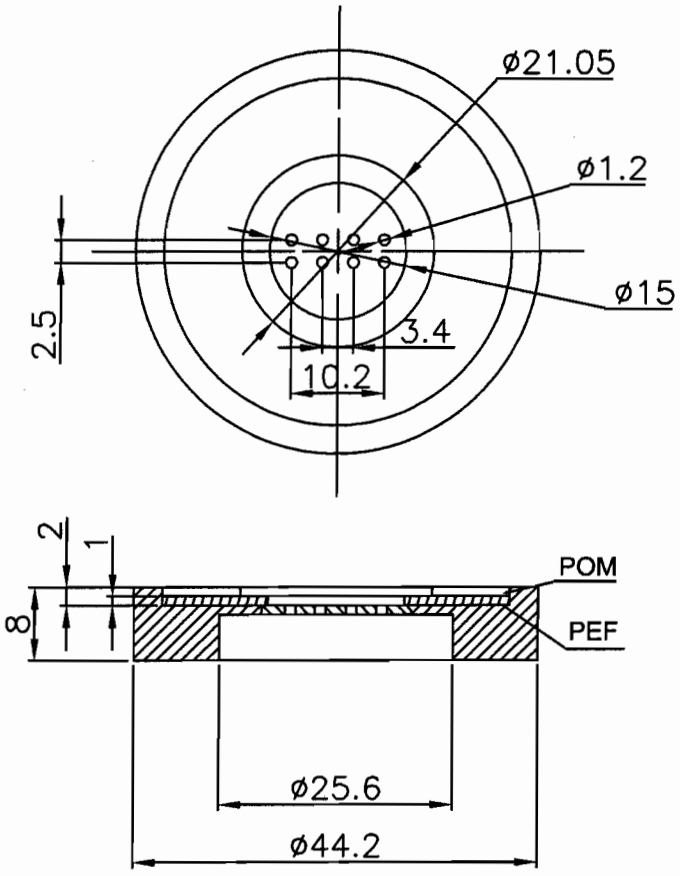
6 Load test

Receiver should not fail after apply 20 ~ 20K Hz while noise rated power input (RMS), 96 hours.

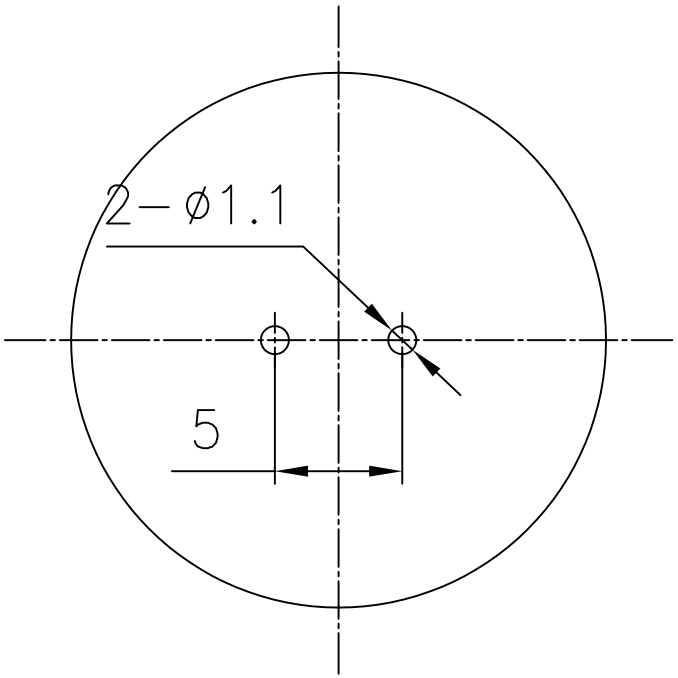
Measuring Setup

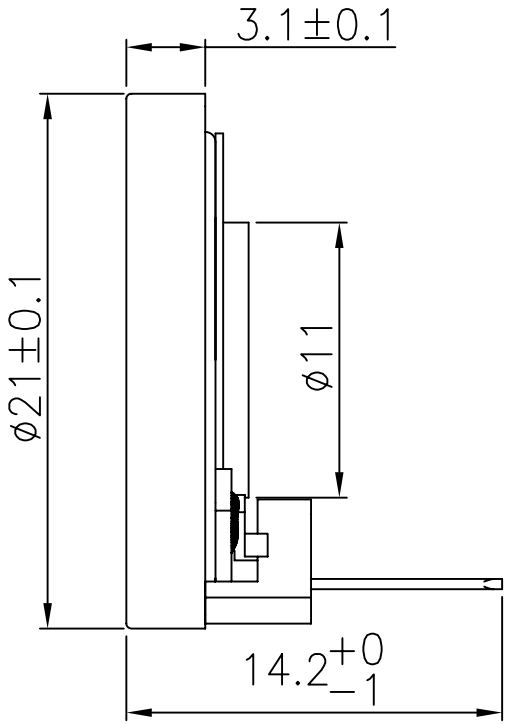


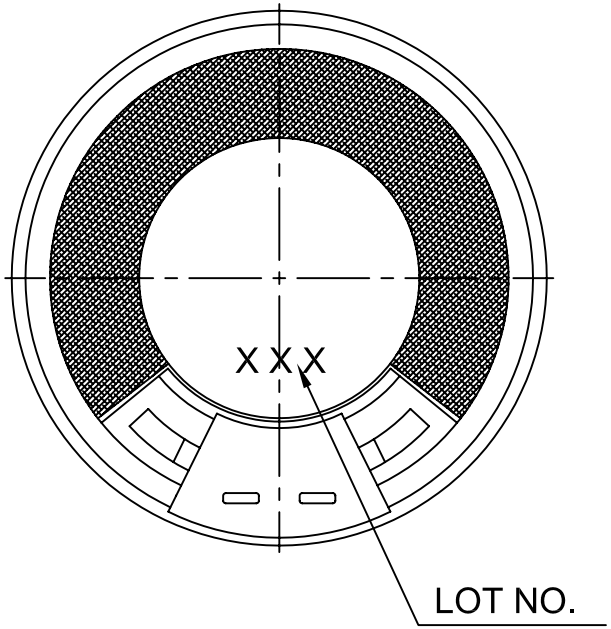
Receiver Coupler



Title: Receiver Coupler P21RF11					
F:\SPEC\RECEIVER\13\RECEIVR COUPLER P21RF11.DWG	V 1.0	07.03.16	Receiver Coupler for P21RF11		
	VERSION	DATE	DESCRIPTION		
Vanson Electronics (Nanhai) Co., Ltd.	Unit: mm		Scale:	Appr.:	
鋐利電子 E-MAIL: vecof@vansonic.net TEL:+86-757-88536828 FAX:+86-757-88536826	Tol.:			CHK.:	Dwg.:







TOL / RANGE			√	
0–8	±0.05	±0.10	±0.20	±0.30
8–16	±0.10	±0.15	±0.25	±0.40
16–24	±0.15	±0.20	±0.30	±0.50
24–50	±0.20	±0.25	±0.40	±1.0
50–100	±0.25	±0.30	±0.50	±2
>100	±0.40	±0.40	±0.80	±3

VERSION	DATE	DESCRIPTION
V1.0	07.03.16	

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Title: P21RF11-1

F:\SPEC\RECEIVER\21RF\P21RF11-1.DWG

Unit: mm	Scale:	Appr.:	
Tol.:		CHK.:	Dwg.: 廖繼茂

VECO VANSONIC ENTERPRISE CO. LTD.
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1.	**MODEL:**	**21RF31**
2.	Dimension	Outer Diameter **21** mm.
		Height **Refer to Drawing** mm. Weight **4** Grams.
3.	Magnet	Materials **Rare Earth** Size: **8.4** ϕ × **1.0** mm.
4.	Impedance	**150** Ω ± **15** % At **1200** Hz.
5.	Power Rating	Normal **20** mW. Maximum **40** mW.
6.	Output Sound Pressure Lever	**109** ± **3** db / 1mW · At 1000 Hz. (0db=20uPa=0.0002uBar)
	(S.P.L.)	Measured by Artificial Ear B&K 4153 (IEC-318).
7.	Frequency Range	**300** ~ **3400** Hz. Refer figure 1 for frequency window setting.
8.	Distortion	**5** % Maximum over the range **300** ~ **3400** Hz at **20** mW.
9.	Abnormal Sound Test	Must be Normal Tested By **1.8** Volts. Sine Wave.
10.	Load Test	White Noise With Weighted filter **1.8** Volts. (RMS.) **96** Hours.
11.	Storage Temperature	**- 40°C ~ + 60°C**
12.	Operating Temperature	**- 40°C ~ + 50°C**

Environment & Mechanical test.

13.	High Temperature	+ 60 ± 3 °C	Humidity Random for 96 Hours.
14.	Low Temperature	– 20 ± 3 °C	Humidity Random for 96 Hours.
15.	Humidity	+ 40 ± 3 °C	Relative Humidity 90 ~ 95 % 96 Hours.

After test leave at room temperature for 1 hour, SPL shall not deviate by ± 3 db from pre-test measurement, and meet above spec. item 6. 7. 8. 9. 10.

16.	Temperature Cycle test	– 20 ~ + 60 °C 4 Cycles Temperature test.

After test leave at room temperature for 1 hour, SPL shall not deviate by ± 4 db from pre-test measurement, and meet above spec. item 6. 7. 8. 9. 10.

17.	Vibration	Frequency 30 ± 15 Hz, Amplitude 1.5 mm for 3 Hours.
18.	Drop test	75 CM free falling on Concrete floor, 10 times.

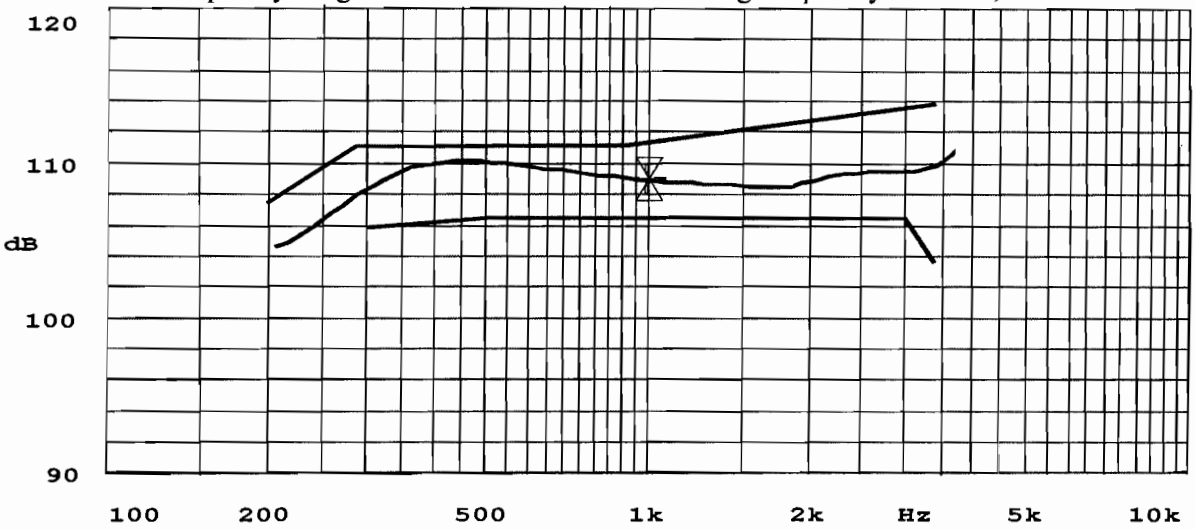
After test, SPL shall not deviate by ± 3 db from pre-test measurement, and meet above spec. item 6. 7. 8. 9. 10.

Please refer to next pages for more detailed testing method.

Frequency Window and Test method.

1. Frequency Window

The receiver frequency range should be within the following frequency window,



Frequency(HZ)	Upper limit(dB)	Lower limit(dB)
200	-1.5	
300	2.5	-3
500	2.5	-2.5
1000	2.5	-2.5
3000	*	-2.5
3400	+5.5	-5.5

* = limits for intermediate bevels are found by drawing a straight line between breaking points in a LOG/LOG scale. 108db=0dB

2. Environment test – High temperature.

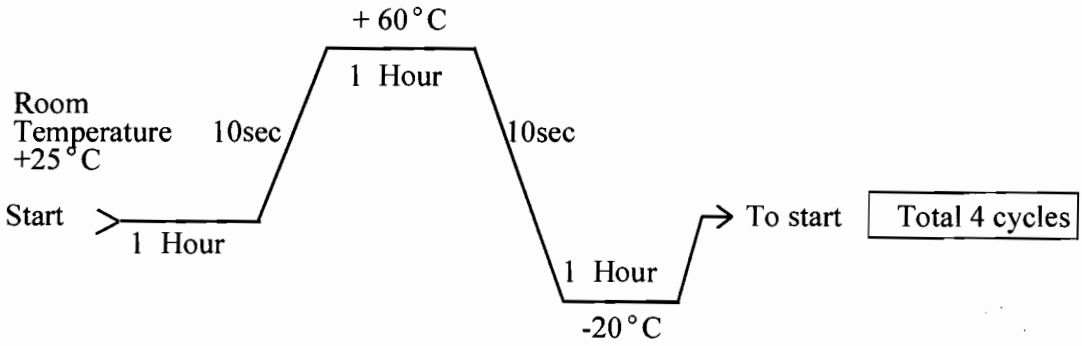
After exposure the receiver in the + 60 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

3. Environment test - Low temperature.

After exposure the receiver in the – 20 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

4. Environment test - Temperature cycle.

After exposure the receiver in the chamber, temperature cycle setting as below shows, SPL should not deviate by ± 4 db, compare with pre-test measurement.



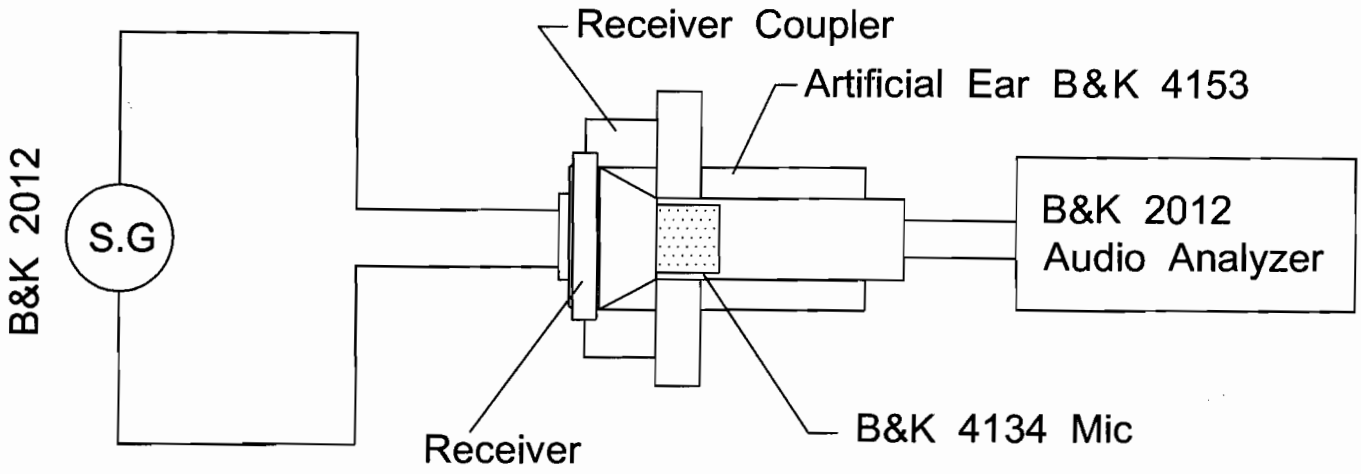
5. Environment test - Humidity.

After exposure the receiver in the + 40 ± 3 °C, relative humidity 90% ~ 95% chamber for 96 hours, then leave the receiver at room temperature for 6 hours, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

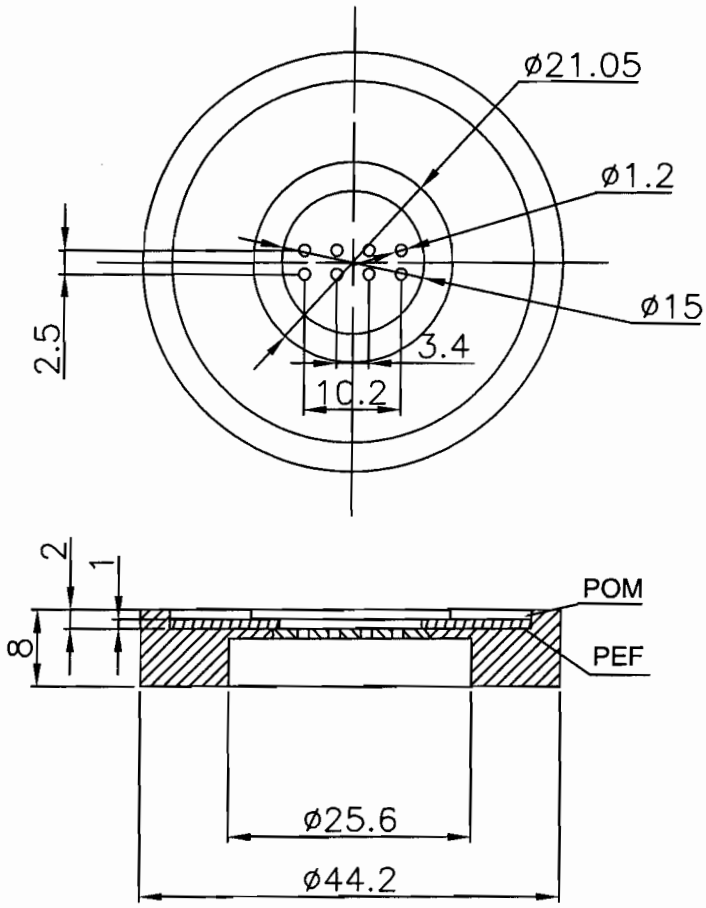
6 Load test

Receiver should not fail after apply 20 ~ 20K Hz while noise rated power input (RMS), 96 hours.

Measuring Setup



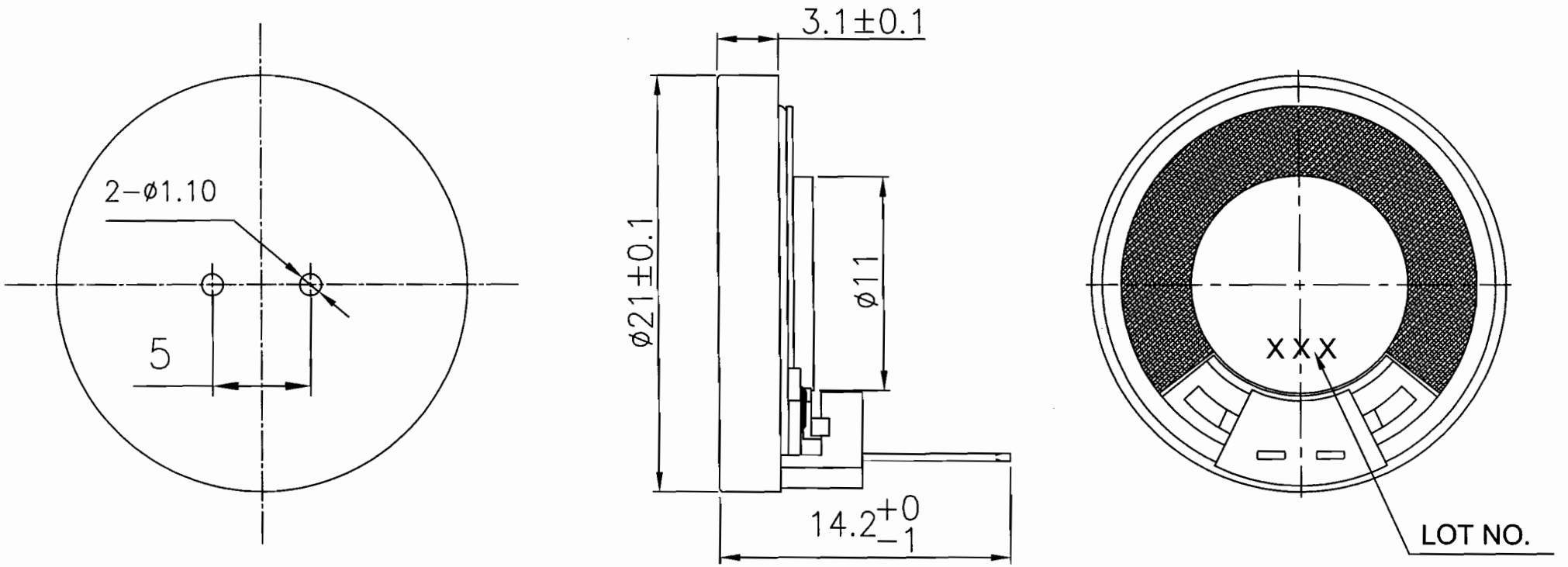
Receiver Coupler



Title: Receiver Coupler P21RF31			
F:\SPEC\RECEIVER\13\RECEIVR COUPLER P21RF31.DWG	V 1.0	01.11.09	Receiver Coupler for P21RF31
	VERSION	DATE	DESCRIPTION

Vansonic Enterprise CO.,Ltd.
宏立電子 E-MAIL:GZFSVECO@PUB.FOSAN.GD.CN
TEL:+86-757-3815788 FAX:+86-757-3818577

Unit: mm	Scale:	Appr.:	
Tol.:		CHK.:	Dwg.:



V 1.0	01.11.09	
VERSION	DATE	DESCRIPTION

FoshanVanson Enterprise CO.,Ltd.
宏立電子 E-MAIL:GZFSVECO@PUB.FOSHAN.GD.CN
TEL:+86-757-3815788 FAX:+86-757-3818577

Title: 21RF31

F:\SPEC\RECEIVER\21RF31.DWG

Unit: mm	Scale:	Appr.:	
Tol.: 其余公差±1/21T13		CHK.:	Dwg.:

VECO Vanson Electronics(Nanhai) Co., Ltd.

ELITALIA tel. 02.3361.1626 info@elitaliaweb.it
fax 02.2626.1009 www.elitaliaweb.it

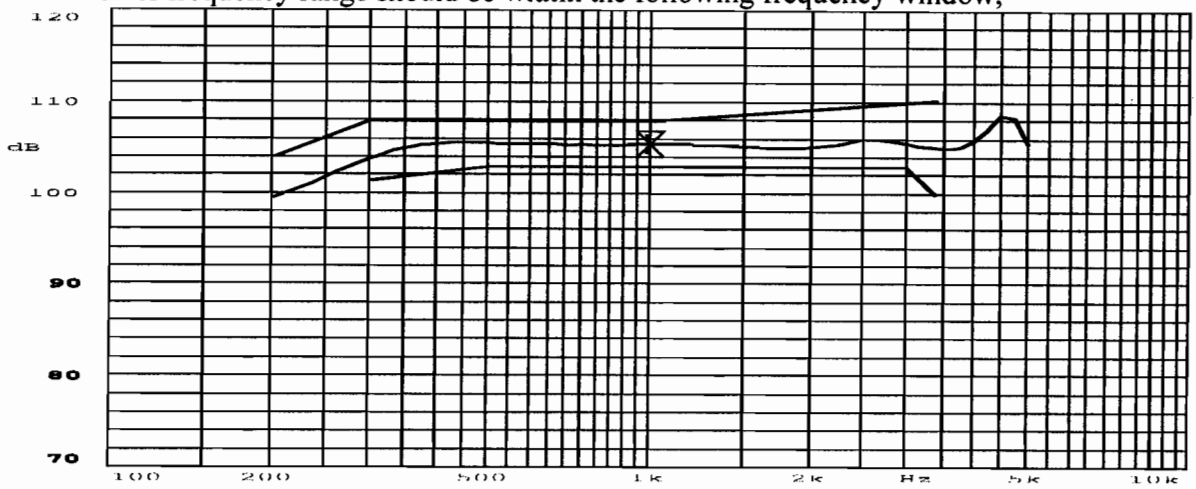
1.	**MODEL:**	**21RF11**
2	Dimension & Weight	Outer Diameter ϕ 21mm
		Height **Refer to drawing** Weight **6** Grams
3	Magnet	Materials **Rare Earth** Size **8.0**ϕ ×**1.0** mm
4.	Nominal Impedance	**150** Ω ± 15 %, At **1200** Hz.
5.	Power Rating	Normal **0.02** Watts Maximu **0.04** Watts Sine Wave.
		Normal Watts Maximu Watts Square
6.	Output Sound Pressure Level (S.P.L.)	**108** ± 3 db/ **0.001** At1000Hz (0db=20uPa=0.0002uBar)
		Measured by Artificial Ear B&K 4153 (IEC-318).
7.	Frequency Range	**300** ~ **3400** Hz. Average SPL – 10 db.
8.	Distortion	**5** % Maximum over the range **300** ~ **3400** Hz at **20** mW.
9	Abnormal Sound test	Must be Normal Tested By 1.73 Volts. Sine Wave.
10	Load Test	White Noise **1.73** Volts. (RMS.) **96** Hours.
11	Polarity	Diaphragm shall move Forward while Apply a Positive DC Signal to the " + " or " Marked " Terminal.
Above Measuring condition under temperature : 25~35℃ R.H. 25 ~75%. According to standard GB/T9396-1996		
Mechanical and vibration test		
12	High Temperature	+ 60 ± 2 °C Humidity Random for 96 Hours. (GB2423.2-81)
13	Low Temperature	– 20 ± 2 °C Humidity Random for 96 Hours. (GB2423.1-81)
14	Humidity	+ 40 ± 2 °C Relative Humidity (RH) 90 ~ 95 % 48 Hours.
15	Vibration	Frequency 30 ± 15 Hz, Amplitude 1.5 mm for 3 Hours. (GB11606.8-89)
16	Drop test	75 CM free falling on Concrete floor, 10 times. (GB2423. 8-81)
After test leave speakers at room temperature for 1 hour, SPL shall not deviate by ± 3 db from pre-test		
17	Temperature Cycle test	– 25 ~ + 60 °C 4 Cycles Temperature test. (GB5170.18-87)
After test leave speakers at room temperature for 1 hour, SPL shall not deviate by ± 3 db from pre-test Measurement, and meet above spec. item 6. 7. 8. 9. 10.		

Please refer to next pages for more detailed testing method.

Frequency Window and Test method.

1. Frequency Window

The receiver frequency range should be within the following frequency window,



Frequency(HZ)	Upper limit(dB)	Lower limit(dB)
200	-1.5	
300	2.5	-4
500	2.5	-2.5
1000	2.5	-2.5
3000	*	-2.5
3400	+5.5	-5.5

* = limits for intermediate bevels are found by drawing a straight line between breaking points in a LOG/LOG scale.

2. Environment test – High temperature.

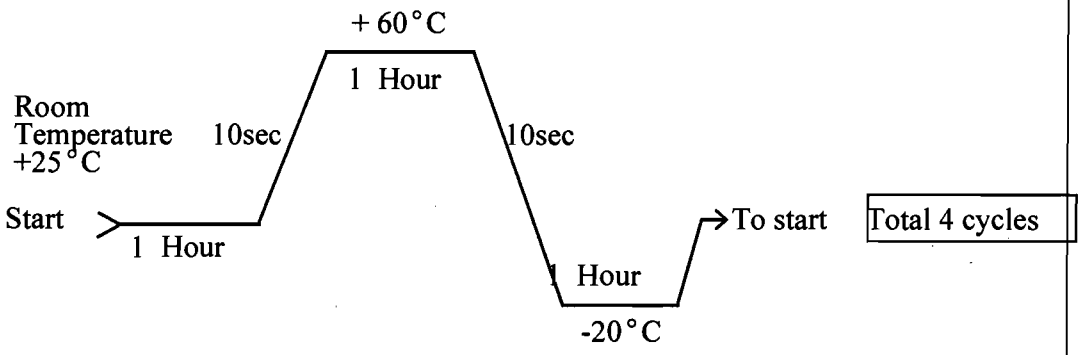
After exposure the receiver in the + 60 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

3. Environment test - Low temperature.

After exposure the receiver in the – 20 ± 3 °C chamber for 96 hours, then leave the receiver at room temperature for 1 hour, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

4. Environment test - Temperature cycle.

After exposure the receiver in the chamber, temperature cycle setting as below shows, SPL should not deviate by ± 4 db, compare with pre-test measurement.

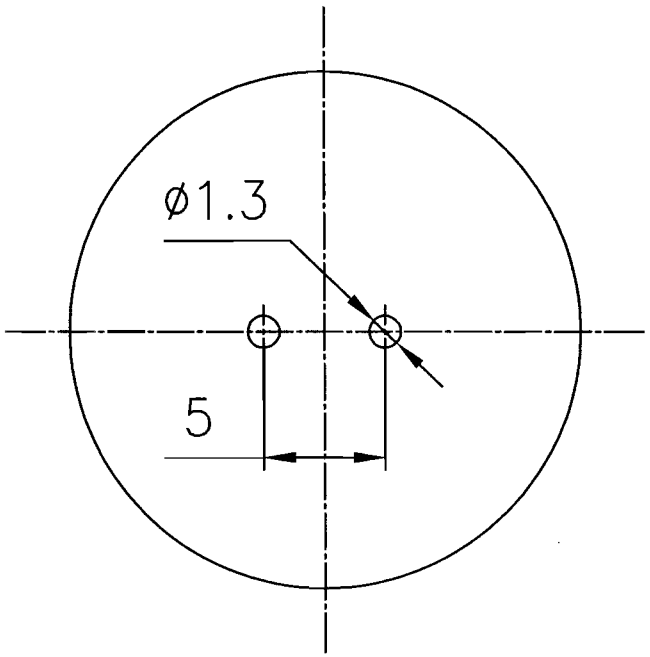


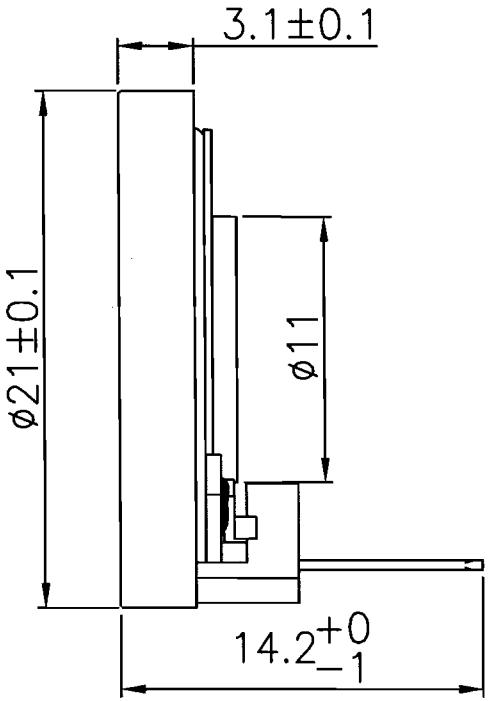
5. Environment test - Humidity.

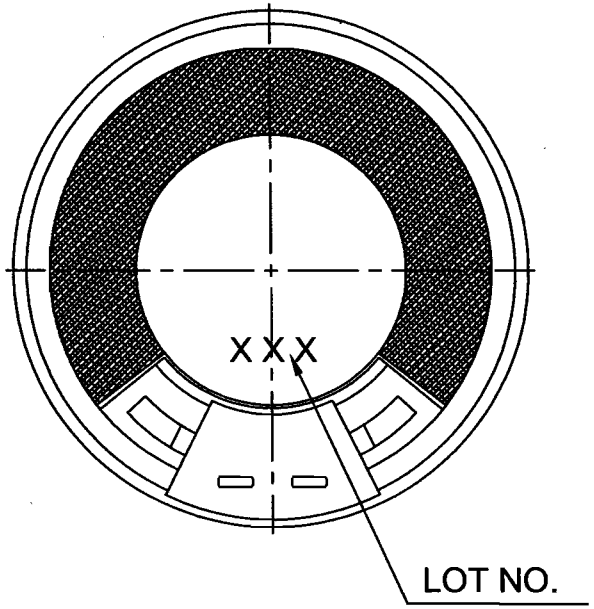
After exposure the receiver in the + 40 ± 3 °C, relative humidity 90% ~ 95% chamber for 96 hours, then leave the receiver at room temperature for 6 hours, the SPL should not deviate by ± 3 db, compare with pre-test measurement.

6 Load test

Receiver should not fail after apply 20 ~ 20K Hz while noise rated power input (RMS), 96 hours.







RANGE \ TOL			V	
0–8	±0.05	±0.10	±0.20	±0.30
8–16	±0.10	±0.15	±0.25	±0.40
16–24	±0.15	±0.20	±0.30	±0.50
24–50	±0.20	±0.25	±0.40	±1.0
50–100	±0.25	±0.30	±0.50	±2
>100	±0.40	±0.40	±0.80	±3

VERSION	DATE	DESCRIPTION
V1.0	07.03.16	

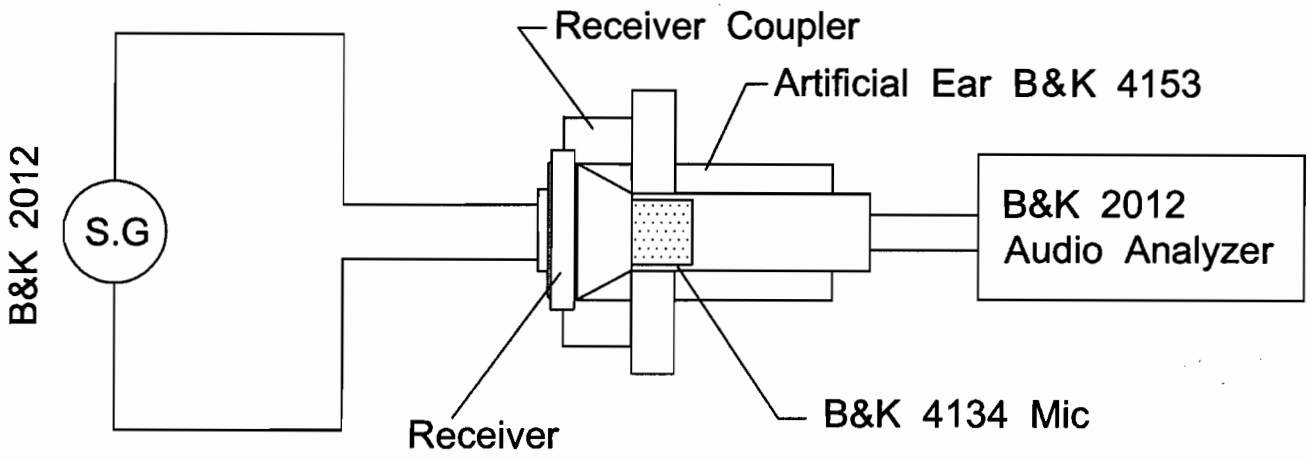
Vanson Electronics (Nanhai) Co., Ltd.
鋐利電子
E-MAIL: vecof@vansonic.net
TEL:+86-757-88536828 FAX:+86-757-88536826

Title: P21RF11

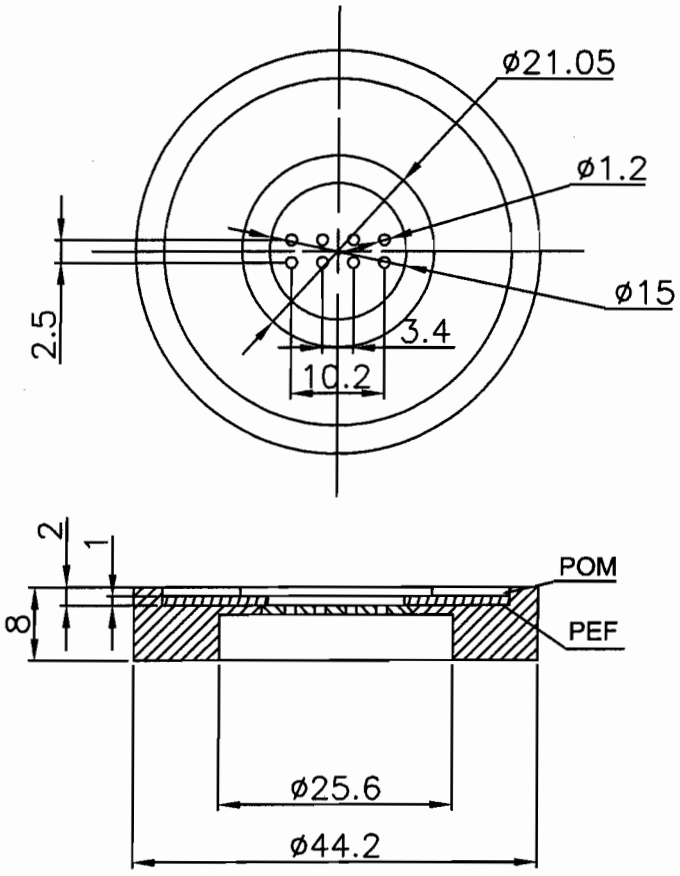
F:\SPEC\RECEIVER\21RF\P21RF11.DWG

Unit: mm	Scale:	Appr.:	
Tol.:		CHK.:	Dwg.: 廖繼茂

Measuring Setup



Receiver Coupler



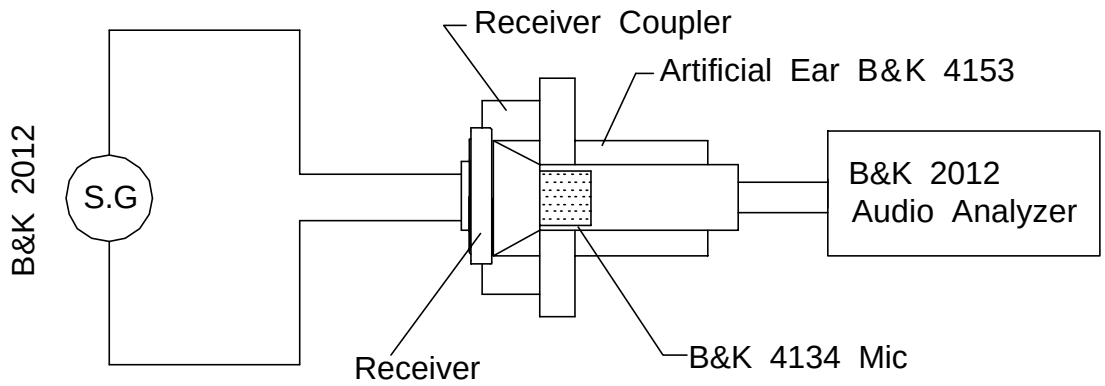
Title: Receiver Coupler P21RF11					
F:\SPEC\RECEIVER\13\RECEIVR COUPLER P21RF11.DWG	V 1.0	07.03.16	Receiver Coupler for P21RF11		
	VERSION	DATE	DESCRIPTION		
Vanson Electronics (Nanhai) Co., Ltd.	Unit: mm		Scale:	Appr.:	
鋐利電子 E-MAIL: vecof@vansonic.net TEL:+86-757-88536828 FAX:+86-757-88536826	Tol.:			CHK.:	Dwg.:

VECO VANSONIC ENTERPRISE CO.,LTD.

ELITALIA tel. 02.3361.1626 info@elitaliaweb.it
fax 02.2626.1009 www.elitaliaweb.it

1.	**MODEL:**	**21RF02** Receiver with SPEAKER function Metal Cover, Low Flux Leakage
2.	Dimension	Outer Diameter **21** mm.
		Height **Refer to Drawing** . Weight **5.0** Grams.
3.	Magnet	Material **Rear Earth** . Size Ø**8.0**? **1.0** mm .
4	Nominal Impedance	**32** Ω ± **15** % At **1000** Hz.
5.	Power Rating	Normal **200** mW. Maximum **400** mW.
6.	Output Sound Pressure Lever	**108** ± **3** db / mW. At 1000 Hz.
	(Measured by Artificial Ear)	Measured by Artifical Ear B&K 4153 (IEC-318).
	(Measured in Anechonic Chamber)	**71** ± **3** db / 200 mW / 0.3 M.
		Average at **800, 1000, 1200, 1500** Hz.
7.	Frequency Range (As Receiver)	**300** ~ **5000** Hz.
	(As Speaker)	**400** ~ **5000** Hz.
8.	Distortion	**5** % Maximum At **1000** Hz. **200** mW.
9.	Abnormal Sound Test	Must Be Normal Tested By **2. 6** Voltages Sine Wave.
10.	Load Test	White Noise With Weighted Filter **2. 6** Volts. (RMS) **24** Hrs.
11.	Magnetic Flux Leakage	Maximum **3.0** mT (**3.0** Gauss) in Hearing side.

Measuring Setup



Unit : mm Housing Material : Metal

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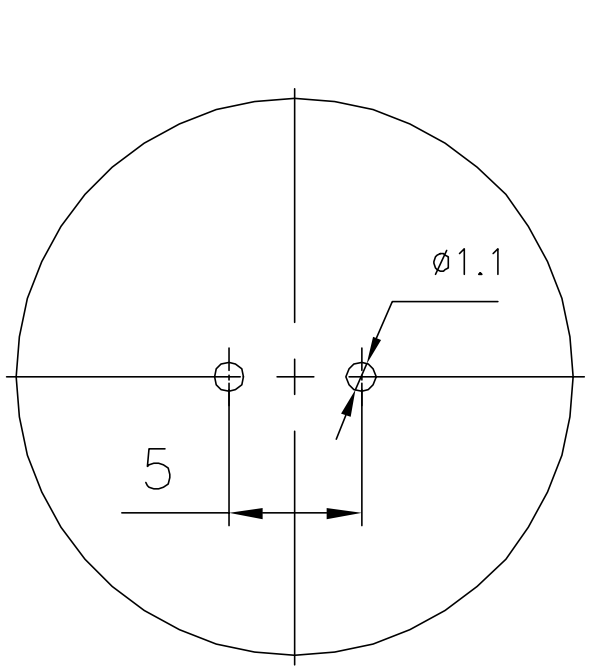

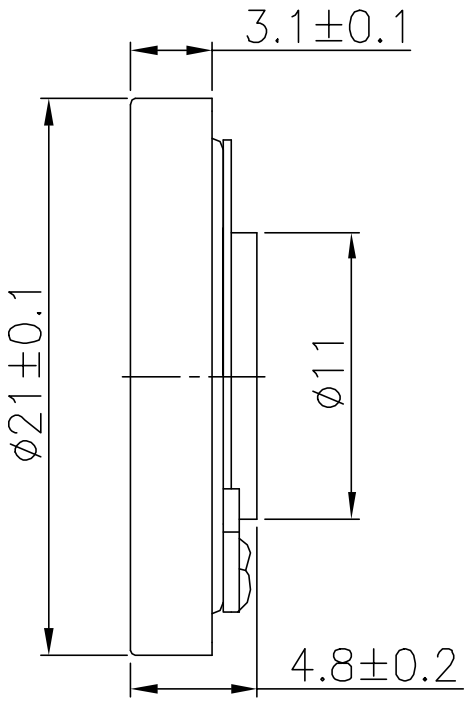

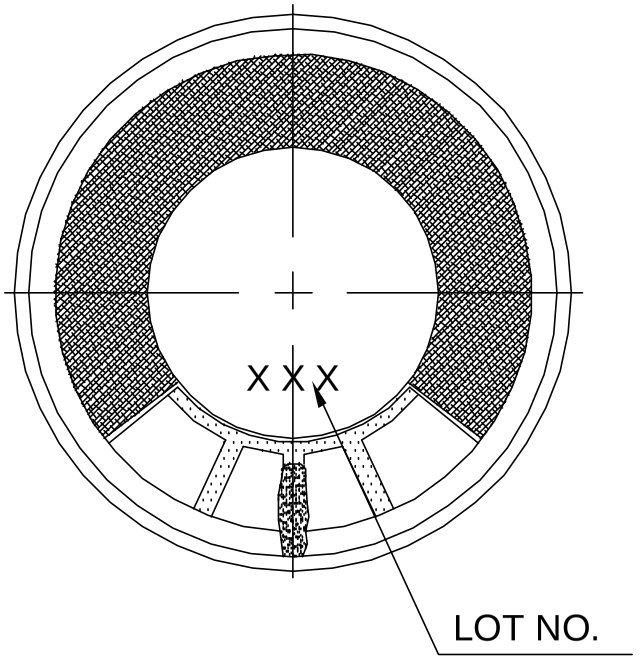

VERSION	DATE	DESCRIPTION
V 1.0	00.09.28	
V 1.1	00.12.14	

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紘立企業 E-MAIL:VANSONIC@MS4.HINET.NET
TEL:+886-2-29626335 FAX:+886-2-29625220

Title: 21RF02-32

G:\VECO\21\21RF\SPEC\21RF02-2.DWG

Unit: mm	Scale:	Appr.:	
Tol.: 其余公差±/2IT13		CHK.:	Dwg.: