+-LORN 豪恩
Electret Condenser Microphone Units

深圳市豪恩电声科技有限公司
Shenzhen Horn Electroacoustic Technology Co.,Ltd

SPEC.SHEET NO: W031206002

Address:
Block 9,Shuiwei Ind Zone,Shuiwei New Village,Dalang,Longhua,Shenzhen, Guangdong,China 518109

Tel:(86)755-28121370/ 28121371/28109416/28109419
Fax: (86)755-28109417
E-mail: rd@horn.com.cn
Website:www.horn.com.cn

CUSTOMER: Digi-Key Corporation

APPROVAL SHEET

PRODUCT NAME	PART NUMBER	DIMENSION	REMARK
Electret Condenser Microphone	**EM6022-40BC10&33**	Ø6.0×2.2(mm)	D.S.PCB

APPROVED BY	CHECKED BY	ISSUED BY

APPROVED BY:

DATE:

PART NMUBER : EM6022-40BC10&33

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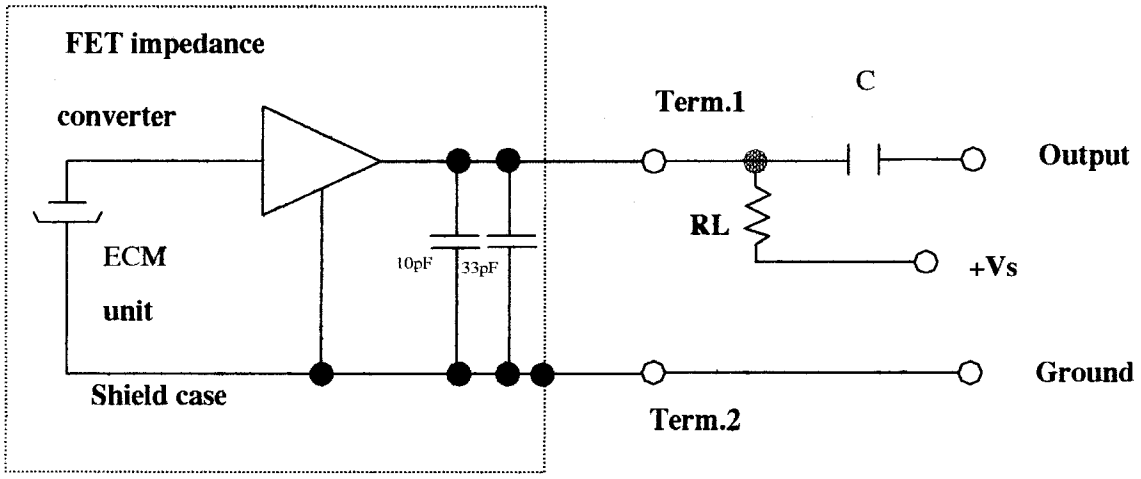
SPECIFICATION

Item	Symbol	Test conditions	Min	Standard	Max	Unit
Sensitivity	S	f=1KHz. P_{in}=1ubar	-42	-40	-38	dB (0dB=1V/Pa)
Directivity	Omnidirectional					
Impedance	Zout				2.2	KΩ
Input sound pressure level	S.P.L				100	dB
Operation voltage	Vs	-	1.0	2	10	V
Current consumption	I	f=1KHz. P_{in}=1Pa			500	uA
Sensitivity reduction	ΔS	f=1KHz. P_{in}=1Pa. Vs=2→1.5V			-3	dB
S/N ratio	S/N(A)	f=1KHz. P_{in}=1Pa. A=curve	60			dB

Measurement Circuit (Test Condition Vs=2V R_L=2.2KΩ

Ta=20℃ R.H=65%)



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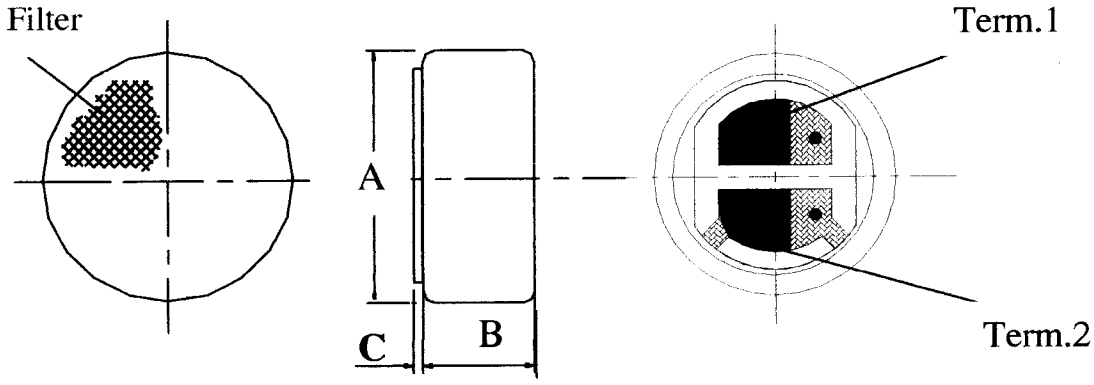
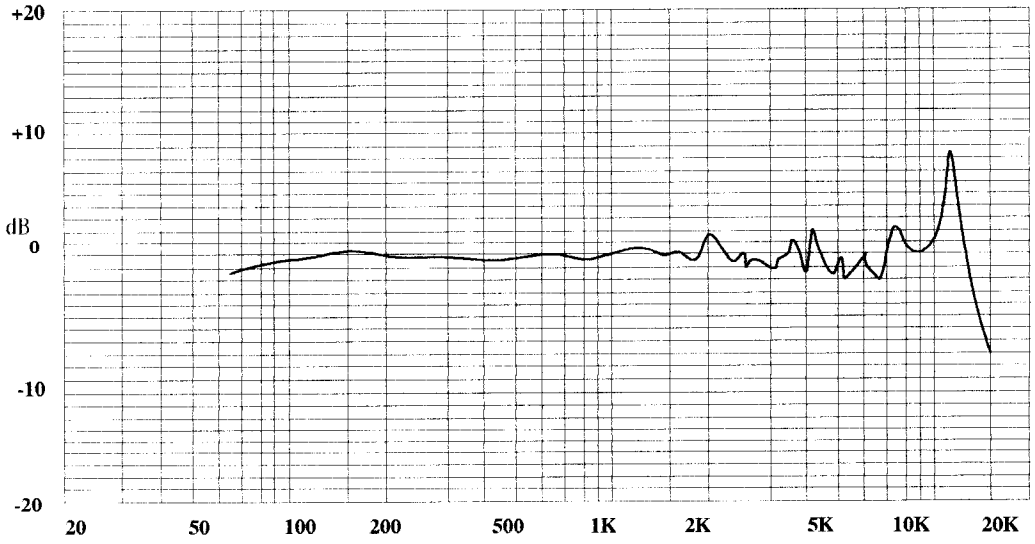
Dimensional Drawing

unit: mm



PART	MIN	STANDARD	MAX	REMARK
A	Ø5.9	Ø6.0	Ø6.1	
B	2.0	2.2	2.4	
C	0.1	0.2	0.3	

Typical Frequency Response Curve



Frequency(Hz)

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Ambient condition

(1) Operating condition
Ambient temperature: -10℃～+45℃
Relative humidity: ≤ 85%

(2) Storage condition
Ambient temperature: -20℃ ～+60℃
Relative humidity: 45%～75%

Reliability Test

1) Vibration Test

To be no interference in operation after vibration of full amplitude 2mm for 30 minutes at three axis, the sensitivity to be within +/-3dB from initial sensitivity.

2) Drop test

To be no interference in operation after dropped to concrete floor each time from 1 meter height of three directions in state of packing, the sensitivity to be within +/-3 dB from initial sensitivity.

3) High Temperature Storage:

To be no interference in operation after high temperature test 70℃+/-3℃ for 48 hours. The sensitivity to be within+/-3dB from initial sensitivity.

4) Isotherm & Iso-humidity Storage

To be no interference in operation after storage test at temperature 60℃+/-2℃ and relative humidity(93+/-3%) for 48 hours, the sensitivity to be within +/-3dB from initial sensitivity, the test is performed at temperature 20℃after operation for 6 hours.

5) Low Temperature Storage

To be no interference in operation after test at temperature -20℃+/-3℃ for 48 hours, the sensitivity to be within +/-3dB from initial sensitivity.

6) Temperature Cycle Test

After exposure at 55+/-2℃for 1 hour, at 20+/-2℃ for 1 hour. at -10+/-2℃ for 1 hour, at 20+/-2℃for 1 hour, with 5 cycles. Change of sensitivity within +/-3dB from initial measuring should be done after 2 hours exposed to 20℃±2℃).

7) Collision Test

After collided with the acceleration 100+/-10m/s, at the vertical & horizontal directions for 1000+/-10 times. at the state of packing. Change of sensitivity within +/-3dB from initial.

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深圳市豪恩电声科技有限公司
SHENZHEN HORN ELECTROACOUSTIC TECHNOLOGY CO.,LTD

TEST RESULT OF SAMPLES

NO.	1KHz (dB)	CURRENT (mA)	NOTES
1	-39.6	0.18	（1KHz、0dB=1V/Pa）
2	-40.5	0.18	
3	-40.4	0.17	
4	-39.8	0.14	
5	-39.9	0.17	
6	-39.7	0.18	
7	-40.7	0.18	
8	-40.7	0.18	
9	-40.4	0.18	
10	-39.5	0.17	
11	-40.5	0.17	
12	-40.7	0.19	
13	-39.5	0.17	
14	-40.5	0.17	
15	-40.4	0.19	

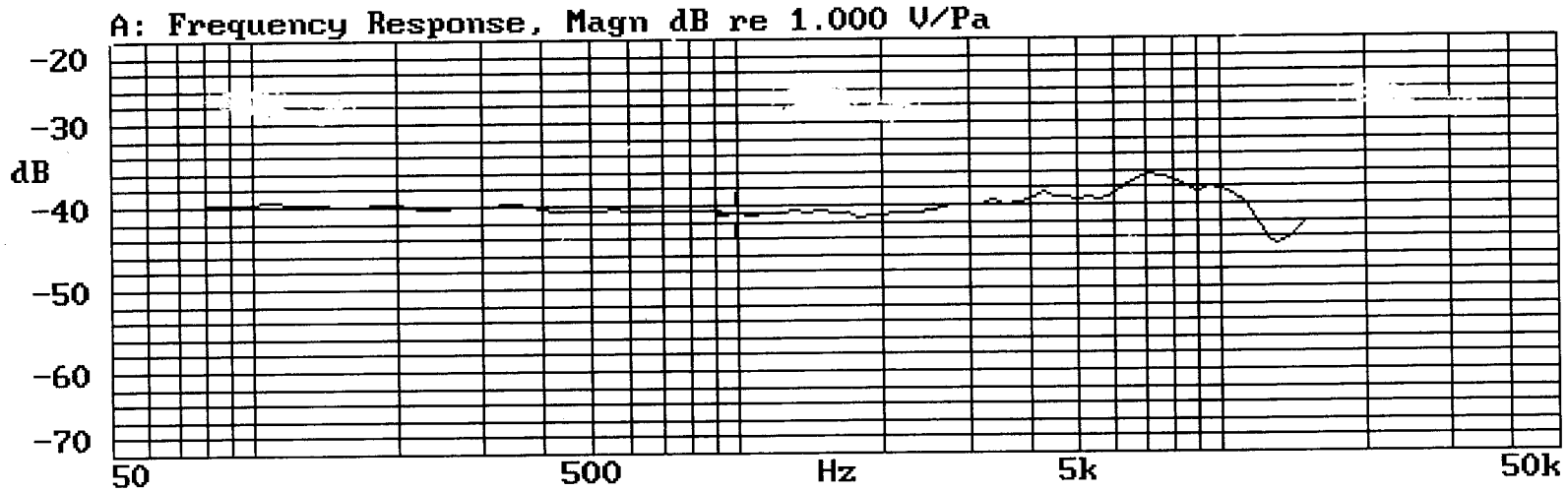
Customer: Digi-Key Corporation　　Date: 2003.12.09

Part number: EM6022-40BC10&33　　Sensitivity: -40±2dB

Test condition: 2.2KΩ 2V　　Tester: G1

SHENZHEN HORN ELECTROACOUSTIC TECHNOLOGY CO.,LTD.

X:1.0000kHz *Y:-40.87dB* ZA:Live Curve SSR Fund.



MODEL:	EM6022-40BC10&33
CODE:	8#
SENSITIVITY:	-40.87dB (1KHz)
TEST CONDITION:	2.2KΩ 2V

08-DEC-2003 16:01:53

Mode: SSR

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Certificate of Confirmed Products

Date: Dec. 07. 2003 NO: W031206002

SUPPLIER	HORN	BUYER	Digi-Key Corporation
TITLE	ECM	MODEL	EM6022-40BC10&33
SIZE	φ6.0 × 2.2mm	TEST CONDITION	2.2KΩ 2V
QUANTITY		SAMPLE: 15PCS	

SPECIFICATIONS

Sensitivity	-40 ± 2dB (0dB=1V/Pa. 1KHz)
Directivity	Omnidirectional
Impedance	Low impedance
Standard operation voltage	2V
Operation voltage	1. 0-10V
Current consumption	Max 500uA
Maximum input S. P. L	100dB
S/N ratio	More than 60 dB
Sensitive reduction	within-3dB at 1. 5V

The test result from customers	Signature: ____ . ____ . 2003		
Final confirmed	Pass	Refuse	Accepted basis on
Remarks			

****** The form must be confirmed by return fax after your test as your best regards! ******