



# East Electronics

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Product Name:	Speaker
Part Number:	SCM-20R3.2-16N0.5R
Version:	Rev. 1
Date:	2021-7-7
Note:	

**Company passed ISO 9001 / IATF16949 / ISO 14001 Certifications**

## Revision History

Rev.	Description	Author/Date	Checked By	Approver
1	Released	Lv Wenbing July.7,2021	Gaorong	Wang Jiancheng

## SPECIFICATIONS

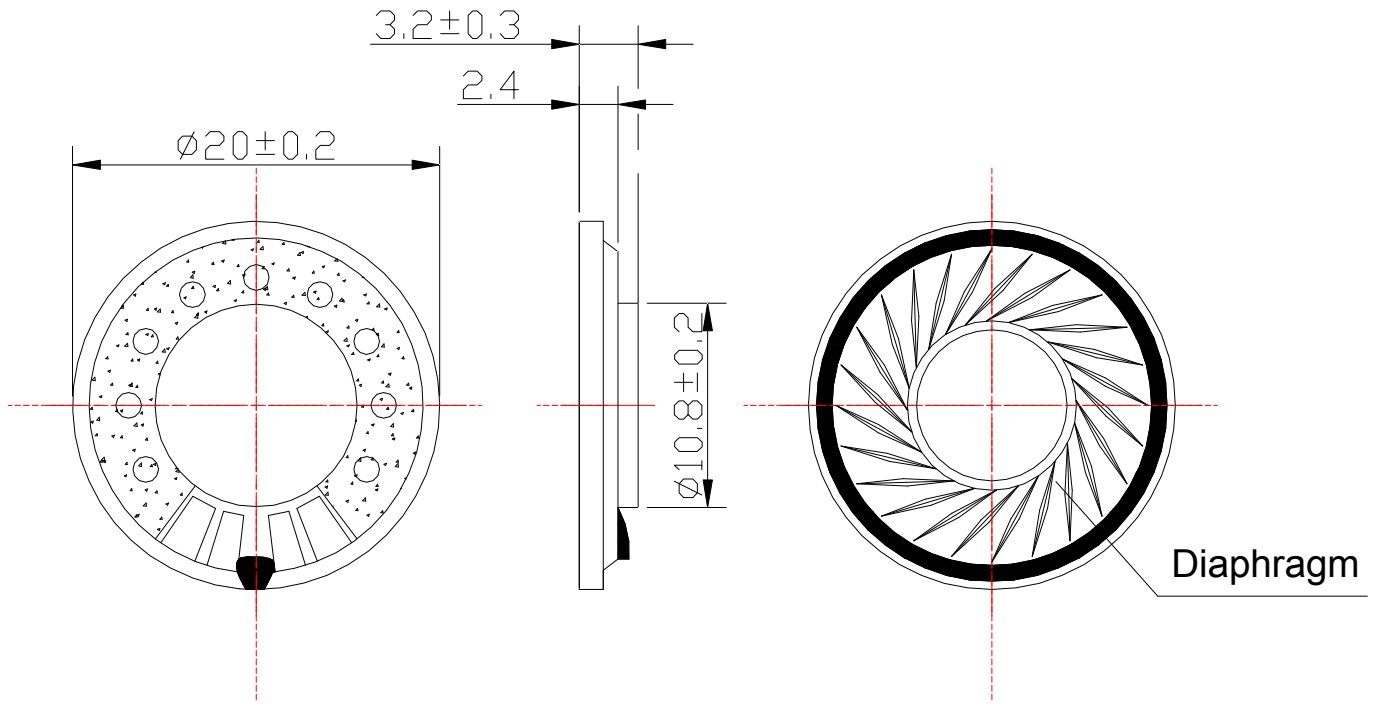
Parameter	Conditions/Description	Values	Units
Rated Input Power		0.5	W
Max Input Power		1.0	W
Rated Impedance	at 2.0 kHz	16±15%	Ω
Sound Pressure Level (S.P.L.)	at 0.8K 1.0K 1.2K 1.5KHz in 0.1W/0.1M average (0dB SPL=20μPa)	89±3	dB
Resonant Frequency (Fo)	at 1.0 V	850±20%	Hz
Frequency Range	Output S.P.L. -10dB	Fo~20K	Hz
Distortion	at 2K Hz, input 0.1W,	<10%	-
Magnet	NdFeB	Φ8.0*1.0	mm
Buzz, Rattle, etc.	must be normal at sine wave between Fo ~ 5K Hz	2.83	V
Polarity	cone will move forward with positive dc current to “+” terminal		
Weight		2.3	g
Operating Temperature		-20~+70	°C
Storage Temperature		-20~+85	°C
Waterproof		IP67	

Notes: All specifications measured at 5~35°C, humidity at 45~85%, under 86~106 kPa pressure, unless otherwise noted.

# MECHANICAL DRAWING

Units: mm

Tolerance:  $\pm 0.5\text{mm}$



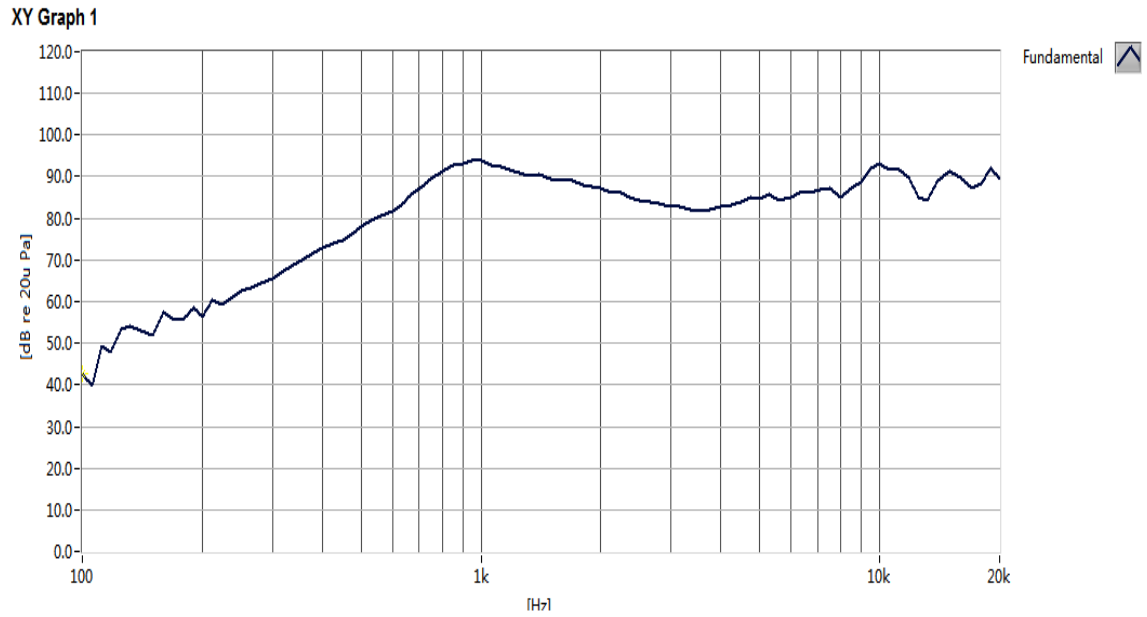
# CONSTRUCTION DETAIL

PART NO.	PART NAME	Q'TY	MATERIAL	REMARK
1	Gasket A	1	ABS	
2	Diaphragm	1	PEI	
3	VOICE COIL	1	Cu	
4	Plate	1	SPCC	
5	Magnet	1	NdFeB	
6	PCB Terminal	1	FR4	
7	Frame	1	SPCC	

# RESPONSE CURVES

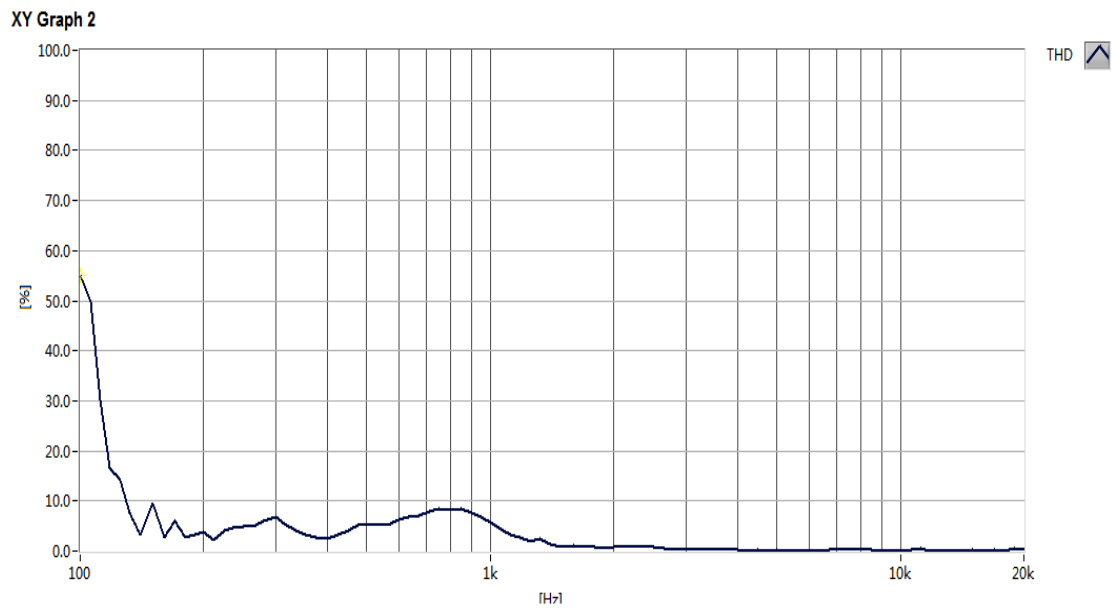
## Frequency Response Curve

Test condition: 0.1W/0.1M,



## Total Harmonic Distortion Curve

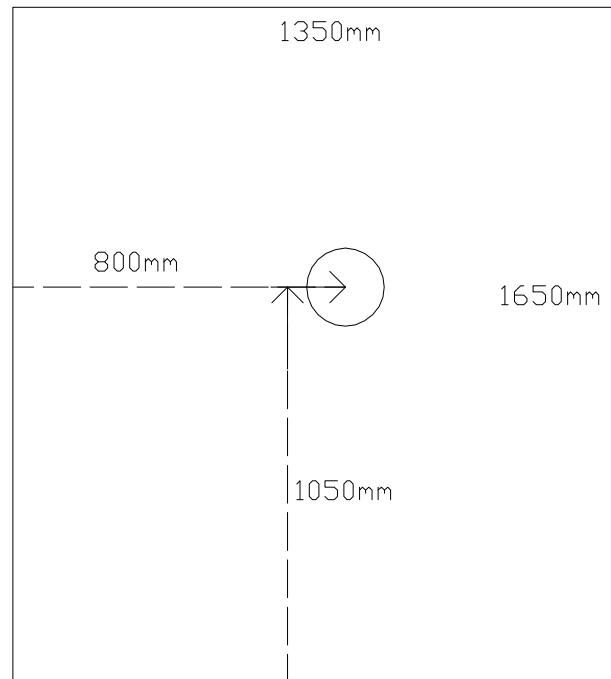
Test condition: 0.1W/0.1M,



## RELIABILITY TEST

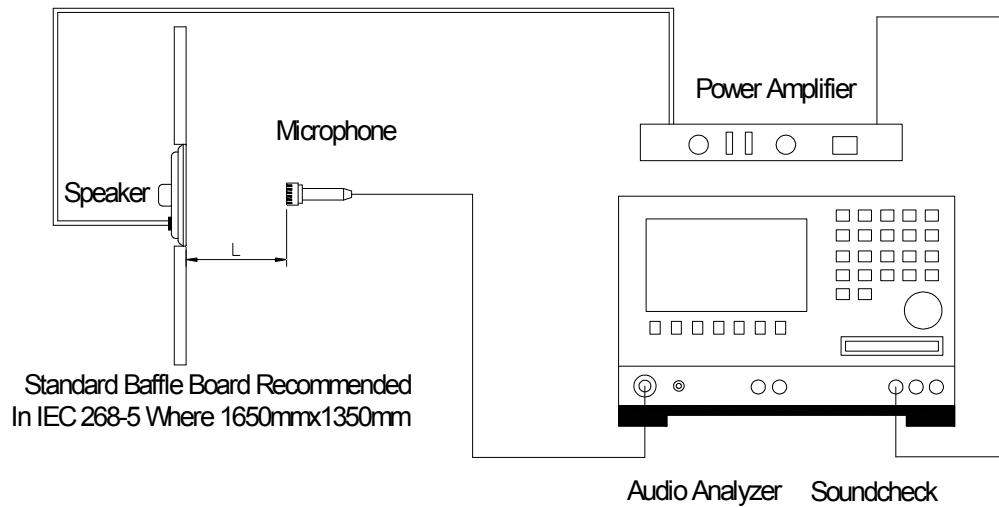
1	Reliability Test Performance	After any following test, parts should conform to original performance within $\pm 3$ dB tested with Rated Power, after 6 hours of recovery period.
2	High Temperature Test	96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$
3	Low Temperature Test	96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$
4	Humidity Test	96 hours at $+30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , 92-95% RH
5	Temp./Humidity Cycle	<p>The part shall be subjected 5 cycles. One cycle shall be 6 hours and consist of</p> <p>The graph illustrates a temperature and humidity cycle. The temperature starts at 25°C, ramps up to 65°C over 0.5 hours, remains constant at 65°C for 6 hours, ramps down to 25°C over 0.5 hours, and then remains constant at 25°C for 5 hours. Humidity is 90-95% RH during the 65°C plateau.</p>
6	Vibration Test	<p>Frequency: 10~55~10Hz Oct/min      Amplitude: 1.5mm</p> <p>Duration: 2 hours each of 3 perpendicular directions</p>
7	Drop Test	Drop the speaker contained in normal box onto the surface of 40mm thick board 10 times from the height of 75cm
8	Operation Life Test	Must perform normal with program White-Noise source at Rated Power for 96 Hours
9	Termination Strength	<p>Apply 3.0N(0.306kg) to each terminal in horizontal direction for 30 seconds;</p> <p>Apply 2.0N(0.204kg) to each terminal in vertical direction for 30 seconds;</p>

## MEASURING METHOD



**Fig. 1 Block Diagram for Measurement Method**

### Standard test condition of speaker



**L=10cm**

**Fig. 2 Speaker Test Condition**

# PACKAGING

units: cm

Remark:

100pcs per tray

10 trays for unit , 2 units per carton

Total:1600 pcs per box

Size:37\*28\*29.5cm

