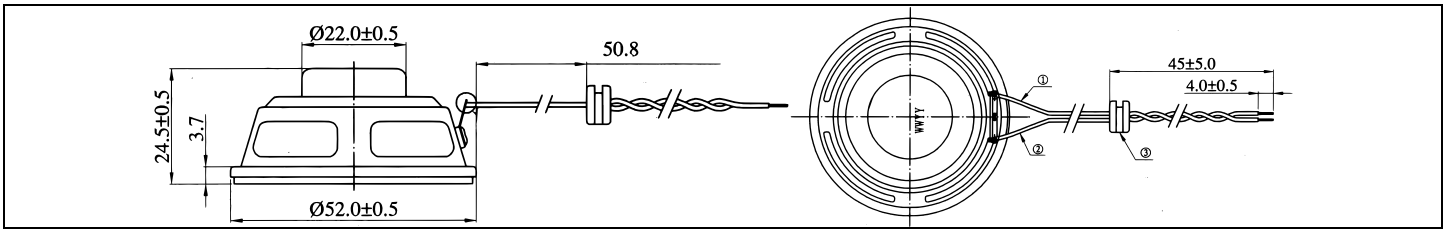
Specification
Part Number: TS121041

Description: Loudspeaker (Size: D52mm x H24.5mm)

RoHS Compliant



Revision	Date	Comments
A	February 8, 2024	Released for Production

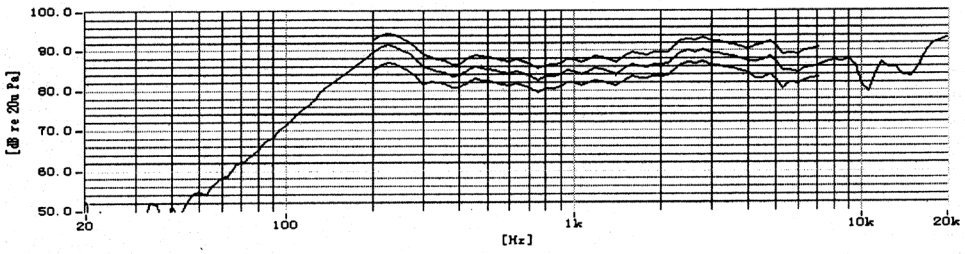
www.topshelfacoustics.com
Please send any inquiries to: sales@tsacoustics.com

1	General	
1.1	Scope	This specification defines all design requirements for the TS121041 loudspeaker.
1.2	Test Conditions	Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are 5°C~35°C, 25%~85%RH , 860~1060HPA

2	Acoustic and Electrical Specifications		
2.1	Nominal Impedance	4±0.6Ω	At 1kHz / 1.0V
2.2	Resonance Frequency	200±40Hz	At 1.0V
2.3	Output SPL	86±3dBSPL	1W (2V) / 0.5m / 800, 1000, 1200, 1500 Hz Avg
2.4	Rated Input Power	1.0W	2.0V
2.5	Max Input Power	2.0W	2.83V
2.6	Frequency Response and Deviation	F_0~16kHz	Output SPL - 10dB
2.7	Buzz and Rattle	No audible buzz or rattle	Sine Wave Sweep at 2.5V / F_0~20kHz
2.8	Distortion	200~250Hz: 5% Max 251~300Hz: 6% Max 301~500Hz: 5% Max 501Hz~7kHz: 3% Max	At 1W (2.0V)
2.9	Polarity	When a positive DC current is applied to the voice coil terminal marked +, the diaphragm shall move forward	
2.10	Magnet Size	Φ12.5 x T2.5mm NdFeB	
2.11	Net Weight	30.7g	

3 Frequency Response

1W / 0.5m / In IEC Baffle



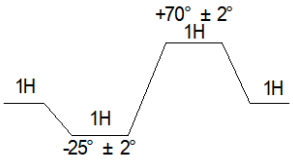
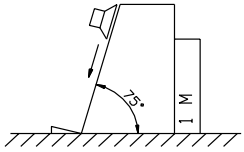
Frequency[Hz]

Ave Sens.=86.23dBSPL ACR.=4.0Ω Voltage applied for F.R.=2.0V Start F.=20Hz Stop F.=20000Hz

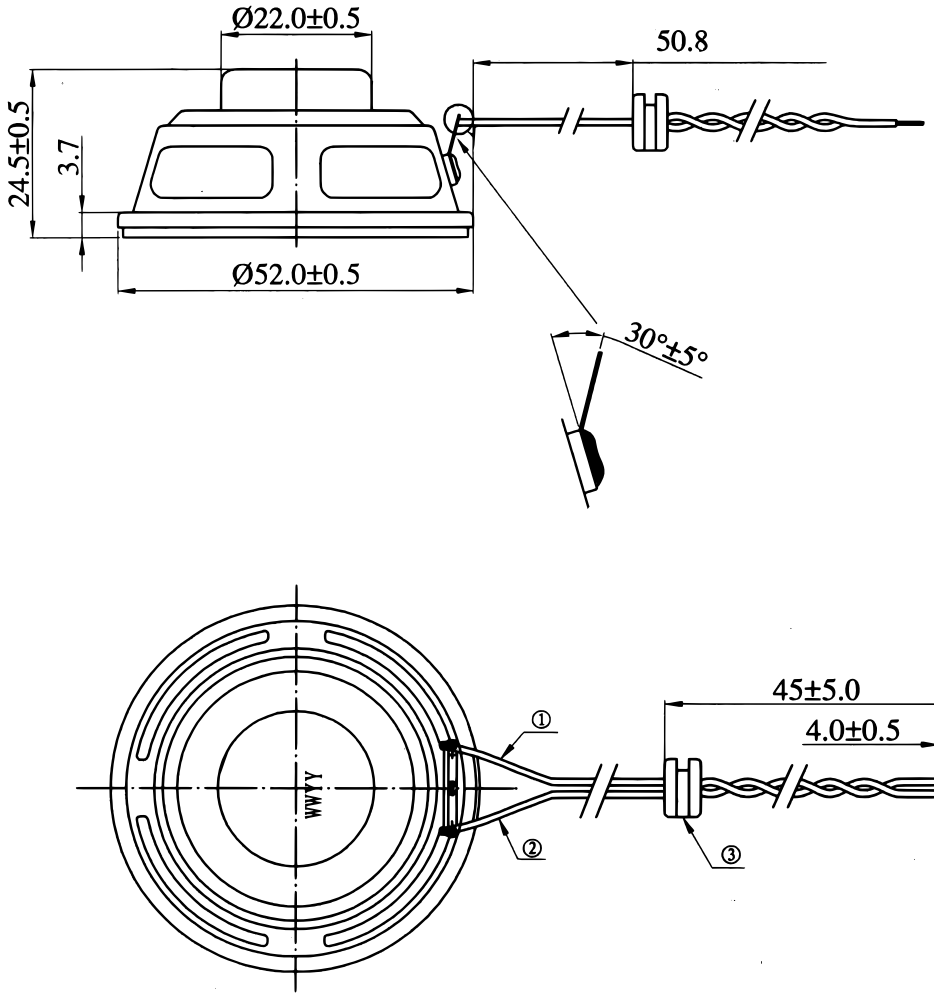
测试条件: 1W 0.5M 800 1000 1200 1500Hz(AVE.)

+3/-4.5dB from 200~250Hz; ±3dB from 251~4000Hz; +4/-4.5dB from 4001~5500Hz ; +4.5/-3.0dB from 5501~7000Hz

Frequency (Hz)	200	400	1000	1600	2000	2500	4000	5600	7100
Upper limit (dBSPL)	94	87.2	88.2	90.5	92.5	94	95	90	94.5
Lower limit (dBSPL)	84	80.2	81.2	83.5	85.5	87	85	81	82.5

4	Environmental Characteristics	
4.1	Results after test	Sensitivity difference shall be within 2dB and there should not be any obstacles that could be harmful to normal operation, including: damage, cracks, rust, distortion, etc.
4.2	Terminal Strength	A static load of 5.0N shall be applied to the terminals for 10s in any direction between the terminal block and frame and between the terminal block and terminal fastener.
4.3	Load Test	White Noise, 1.0W, 96 Hours
4.4	High Temperature Test	96 hours in test chamber at +70±2°C, 20~25%RH, then removed and stored at room temperature for 2 hours
4.5	Cold Temperature Test	96 hours in test chamber at -25±3°C, then removed and stored at room temperature for 2 hours
4.6	Humidity Test	96 hours in test chamber at +40±2°C, 90~95%RH, then removed and stored at room temperature for 2 hours
4.7	Temperature Cycle Test	1 cycle: Low Temperature -25±2°C for 1 hour, High Temperature +70±2°C for 1 hour  5 cycles total, then removed and stored at room temperature for 2 hours
4.8	Drop Test	The speaker shall be dropped 1 time from a height of 1m. 
4.9	Insulation Resistance	A voltage of 100V DC shall be applied for 1 minute between a terminal and the frame. Afterward, resistance between the terminal and frame shall be greater than 2MΩ.
4.10	Vibration Durability (Pack)	X, Y, Z axes; 10~55~10Hz / 1 minute; Amplitude 1.5mm; Endurance: 2 hours each direction
4.11	Operating Temperature	-20°C to +60°C
4.12	Storage Temperature	-30°C to +70°C

5 Mechanical Drawing



Tolerance (unless labeled): ±0.3mm