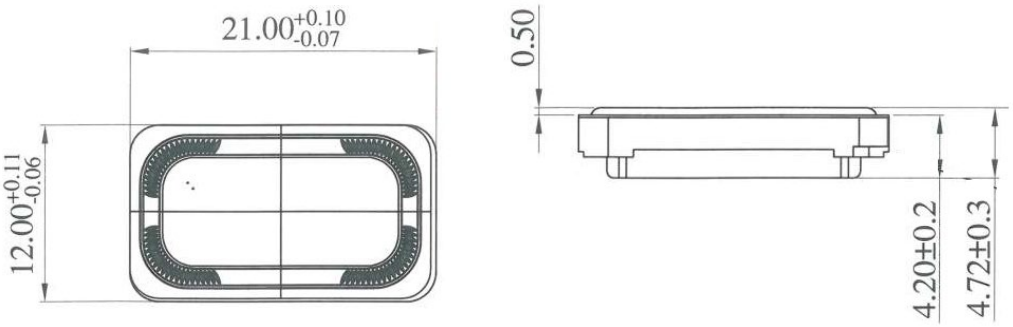
Top Shelf Acoustics

Specification
Part Number: TS121039

Description: Receiver (Size: L21mm x W12mm x H4.7mm)

RoHS Compliant



Revision	Date	Comments
A	March 15, 2024	Released for Production

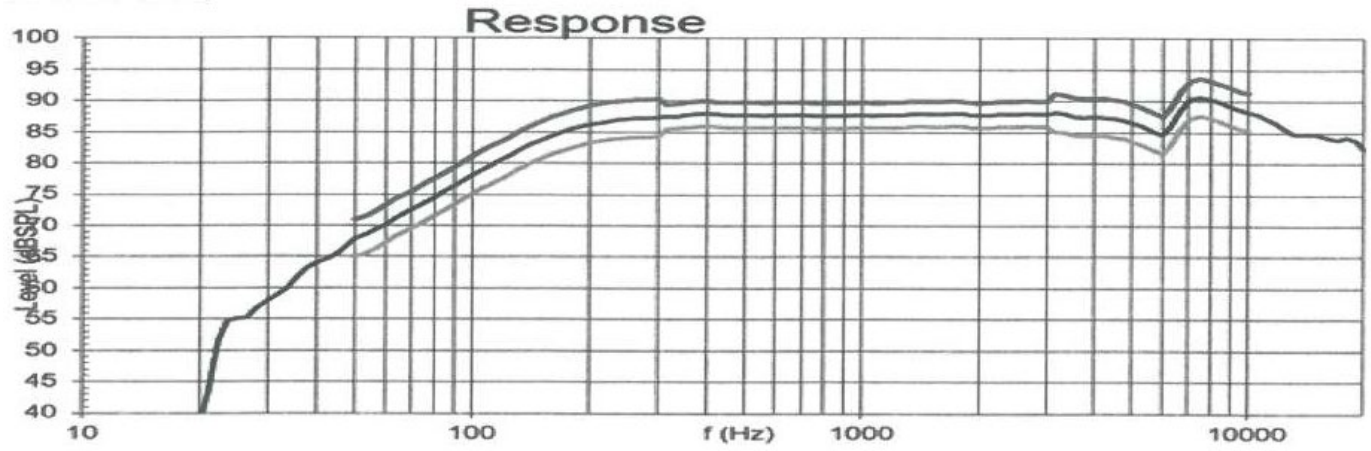
www.topshelfacoustics.com
Please send any inquiries to: sales@tsacoustics.com

1	General	
1.1	Scope	This specification defines all design requirements for the TS121039 receiver.
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	22±3.3Ω (±15%)	At 1kHz / 500mV
2.2	Resonance Frequency	180±36Hz	At 500mV
2.3	Output SPL	87±3dBSPL	1mW (146mV) / 1kHz / Free Air
2.4	Output SPL	129±3dBSPL	1mW (146mV) / 1kHz / IEC 711
2.5	Rated Input Power	10mW	0.46V
2.6	Max Input Power	20mW	0.65V
2.7	Buzz and Rattle	No audible buzz or rattle	Sine Wave Sweep at 0.46V / 100Hz~2kHz
2.8	Distortion	See Distortion Plot	At 1mW (146mV)
2.9	Polarity	When a positive DC current is applied to the voice coil terminal marked +, the diaphragm shall move forward	

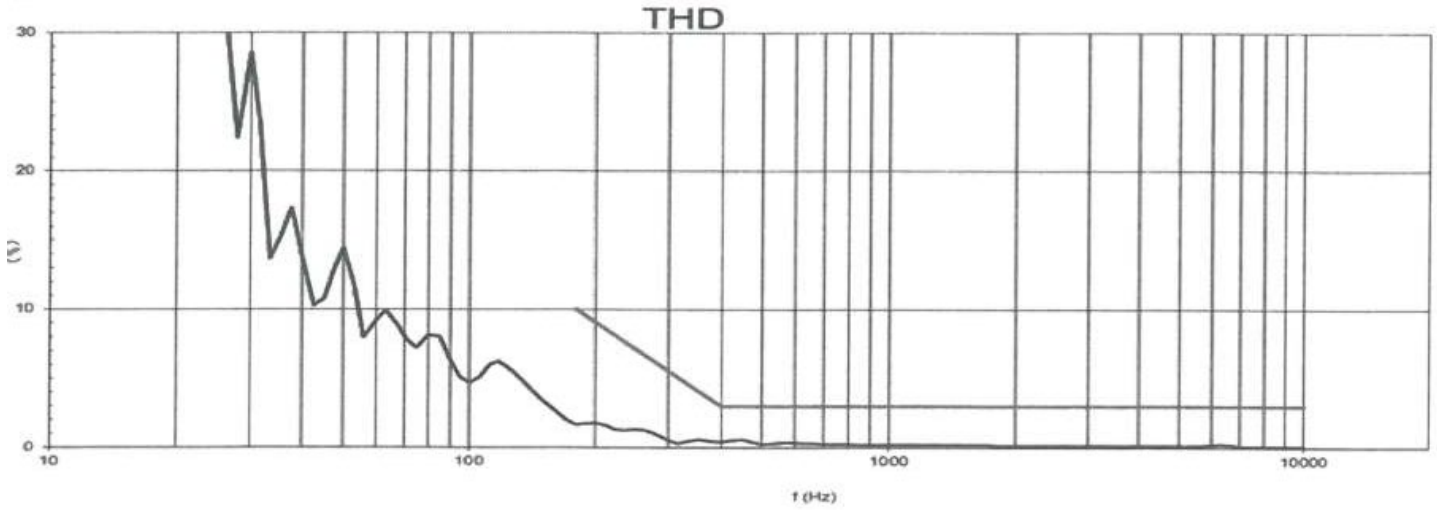
3.1 Free Field Frequency Response

Frequency Response / 1mW (146mV) / 1cm / IEC Baffle



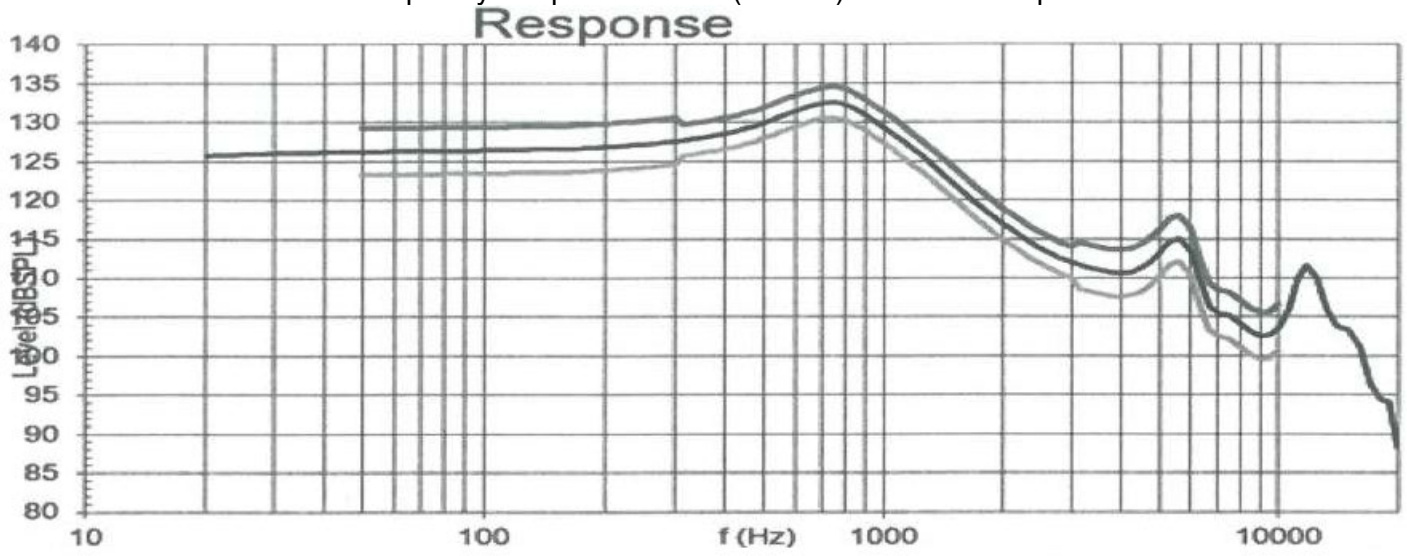
3.2 Free Field THD

THD / 1mW (146mV) / 1cm / IEC Baffle



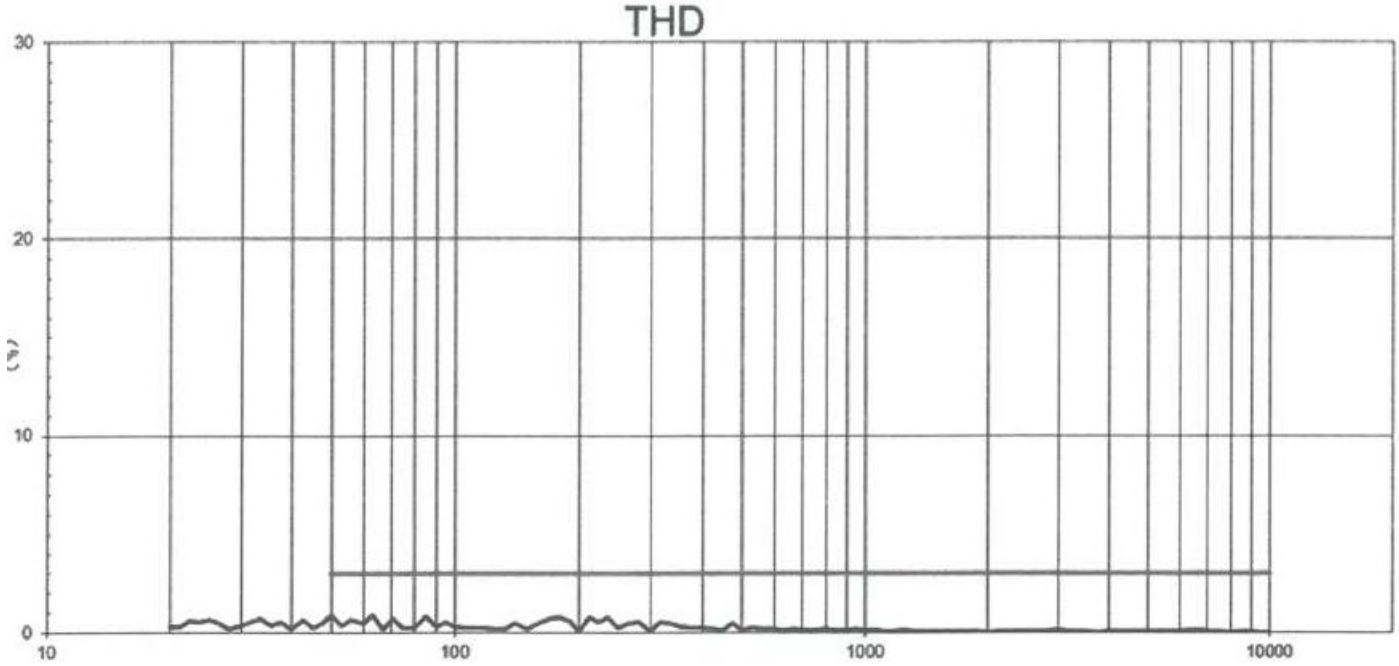
3.3 IEC 711 Frequency Response

Frequency Response / 1mW (146mV) / IEC 711 Coupler



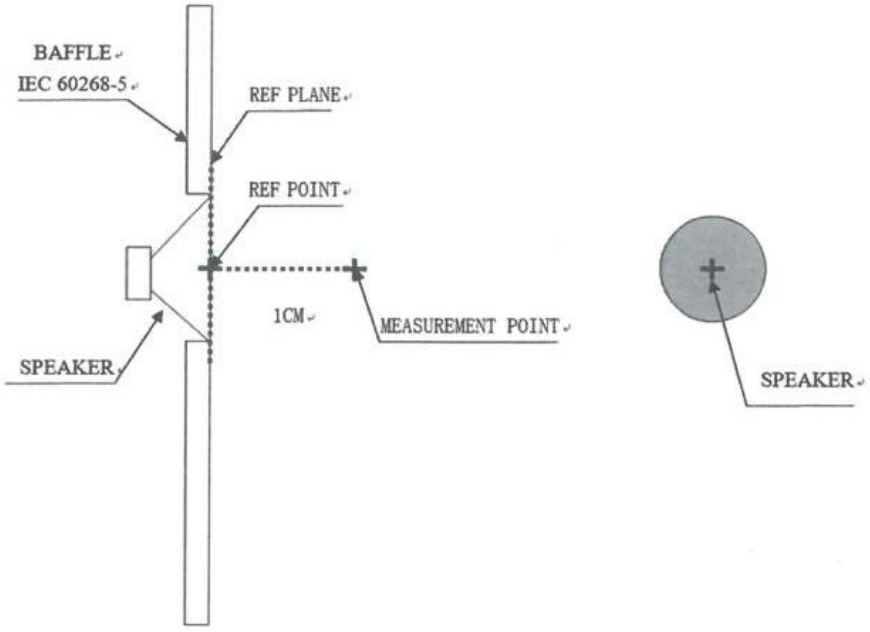
3.4 IEC 711 THD

THD / 1mW (146mV) / IEC 711 Coupler

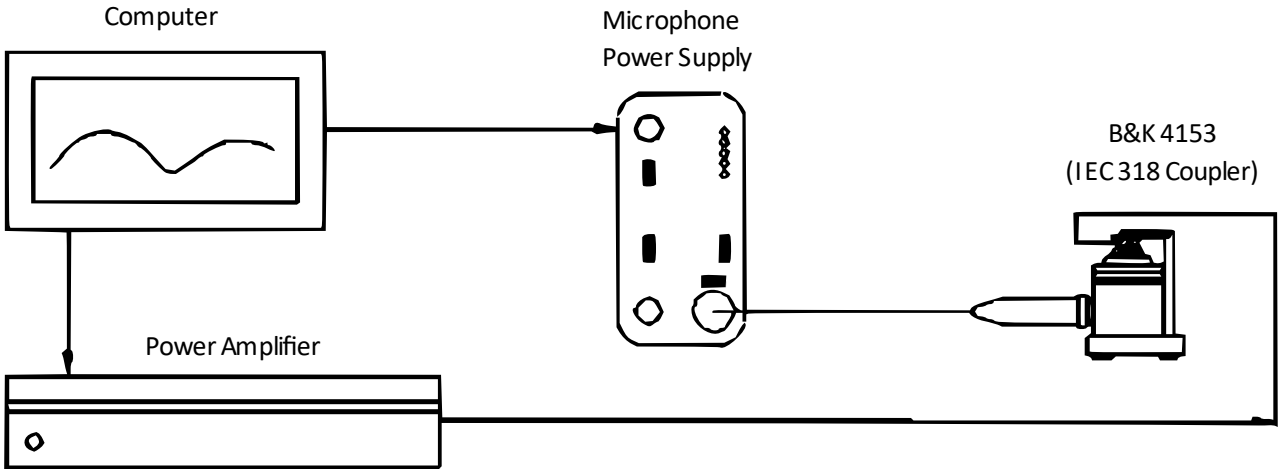


4 Test Setup

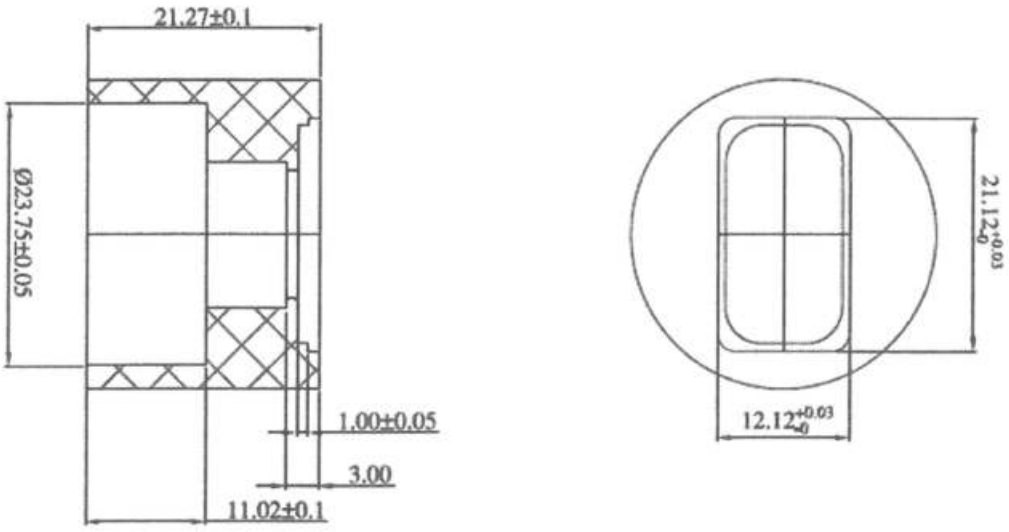
4.1 Measurement Setup Free Field

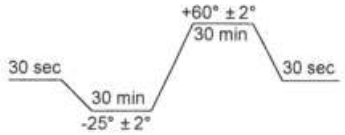
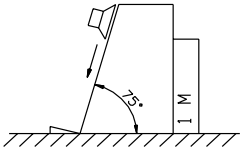


4.2 Measuring Circuit IEC 711 Coupler

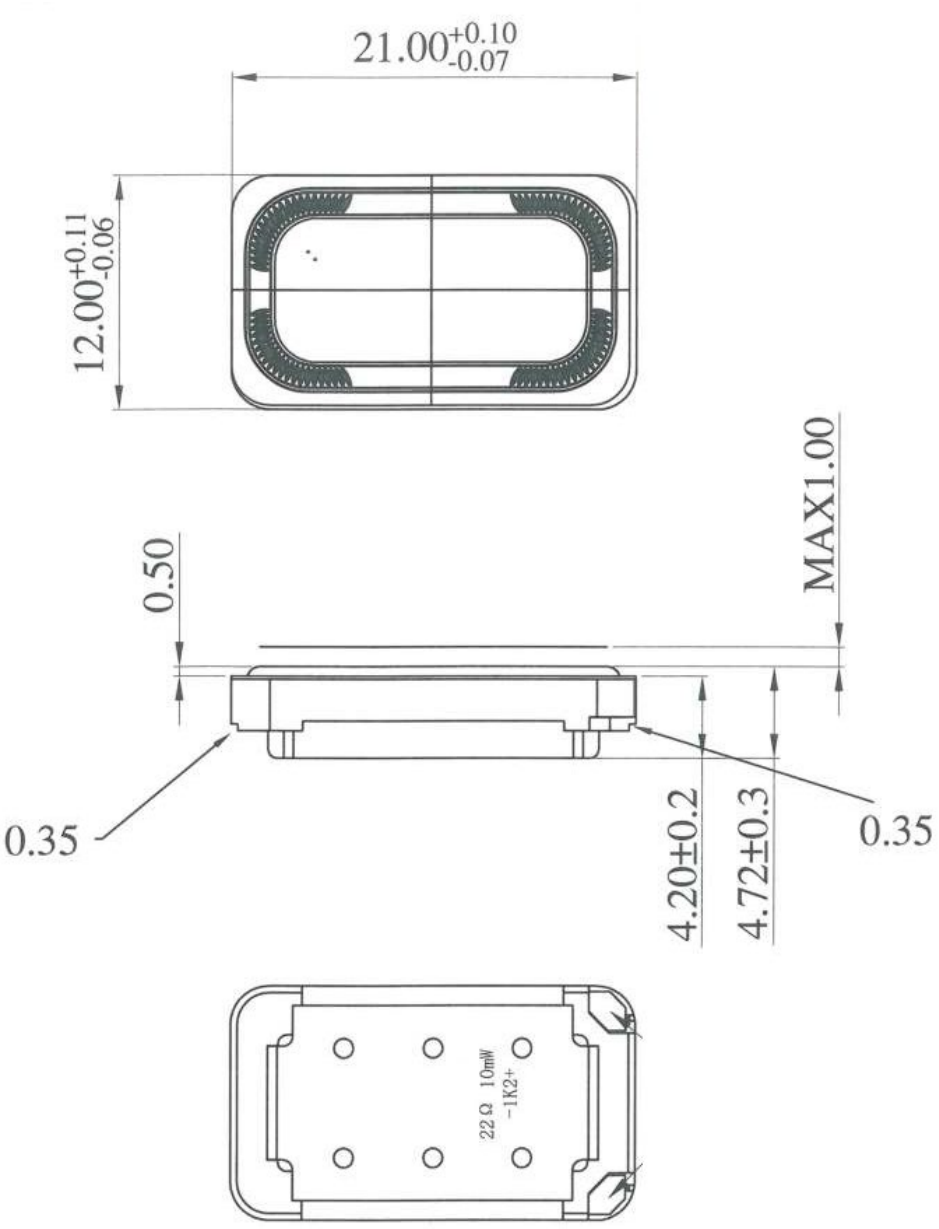


4.3 Test Fixture IEC 711 Coupler



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, 10mW, 96 Hours, 2 hours at room temperature
4.4	High Temperature Test	96 hours in test chamber at +60±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 +60±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	Vibration Durability (Pack)	X, Y, Z axes; 10~55~10Hz / 1 minute; Amplitude 1.5mm; Endurance: 2 hours each direction
4.10	Max Power Test	Input Voltage: 0.645Vrms (20mW) Input Source: Pink noise within rated frequency range Duration: 1 minute on, 2 minutes off, total 20 cycles

5 Mechanical Drawing



Tolerance (unless labeled): ±0.2mm
1.0mm clearance recommended in front of diaphragm