TAOGLAS

Datasheet

50 mm Miniature Speaker – 8 Ohm

Part No:
SPKM.50.8.A

Description:

50mm Miniature Speaker - 8 Ohm 500mW RMS

Compact design for integration in a wide range of products

Features:

8 Ohm Impedance

Rated Input Power 500mW RMS

Max Input Power 800mW peak

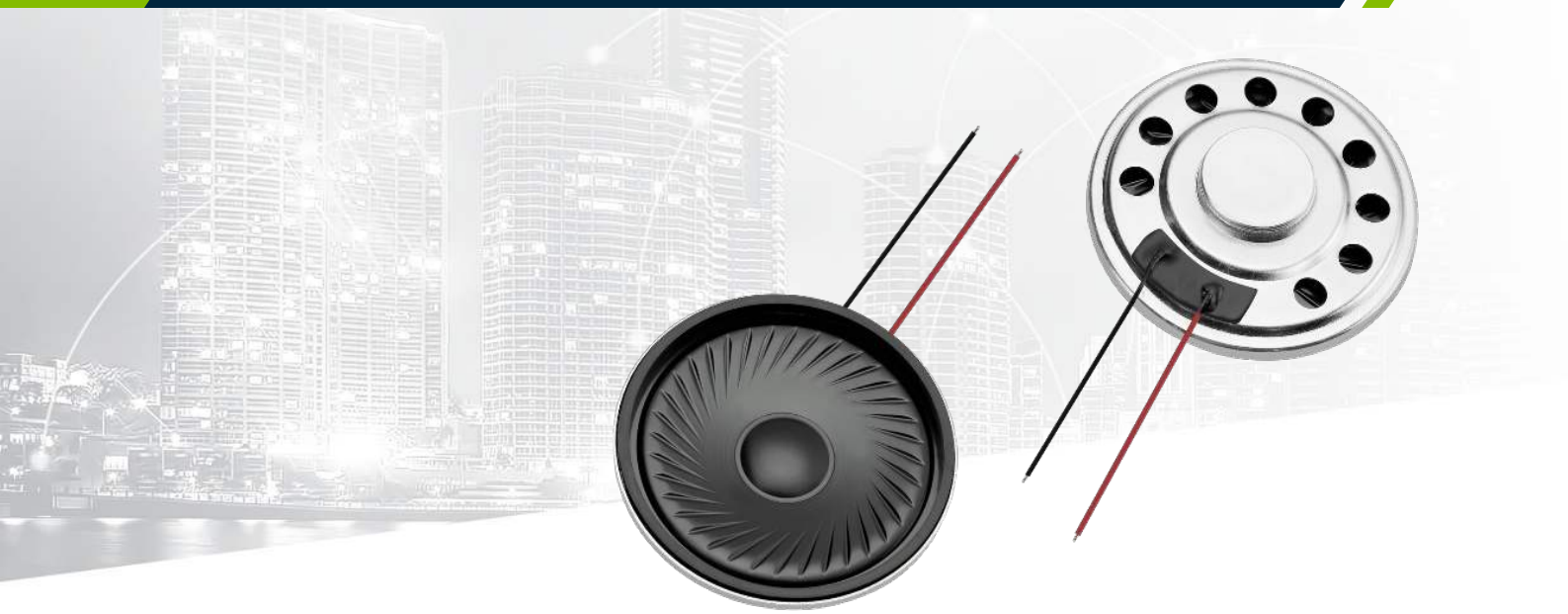
High Sensitivity

Dimensions: Ø50 x 8mm

Connector: Wire Lead

RoHS & Reach Compliant

1. Introduction



Featuring a compact design, enabling ease of integration in a wide range of electronics products, including IoT devices, with high levels of long-term reliability and best in class performance Taoglas products are known for.

Our 50 mm Miniature Speaker offers a frequency response of 100 Hz - 10 kHz and high sensitivity, with 8 Ohm impedance and power handling of 0.5W RMS and 0.8W peak. They provide proven performance in demanding applications such as security alarm systems and IoT devices where the accurate reproduction of voice communications is required. Taoglas added miniature speakers to our product portfolio to provide both reliable connectivity and high-quality audio solutions from one trusted company.

Please contact your regional Taoglas customer support team for more information or installation guidelines.

The table below shows a guide to help select the best speaker for your application based on size requirements:

Part Number	Dimensions
SPKM.10.8.A	Ø10 x 3.5 mm
SPKM.15.8.A	Ø15 x 3.7 mm
SPKM.17.8.A	Ø17 x 4.4 mm
SPKM.20.8.A	Ø20 x 4.3 mm
SPKM.23.8.A	Ø23 x 6 mm
SPKM.28.8.A	Ø28 x 5.1 mm
SPKM.2030.8.A	30 x 20 x 5.1 mm
SPKM.2413.8.A	24 x 13 x 8.7 mm
SPKM.289.8.A	28 x 9 x 3.8 mm
SPKM.50.8.A	Ø50 x 8.3 mm

2. Specifications

Electroacoustic	
Sound Pressure Level	94 dB SPL (±3dB) @ 1000Hz (0 dB SPL = 20 µPa) Measuring Condition: 0.5W (Sine wave) @ 0.1 m with baffle
Impedance	8 Ω (±15%) @ 2 kHz with 1 V input signal and without baffle in place
Frequency Response	100 Hz – 10 kHz
Resonant Frequency	400 Hz (±20 %) Typical frequency @ 1 V
Nominal Input Power	500 milliwatts
Maximum Input Power	800 milliwatts
Distortion	Less than 10% @ 1KHz, with input levels up to 2 V RMS
Mechanical	
Height	8 mm
Diameter	50 mm
Weight	0.022 Kg
Connector	Wire leads - AWG#32 (UL1571)
Material	PEI diaphragm with Neodymium Magnet, (without enclosure)
Environmental	
Temperature Range	-40°C to 80°C
Humidity	Non-condensing up to 95% Relative Humidity @ up to 65°C

Reliability Testing		
High Temperature Test	High Temp	+80°C (±2°C)
	Duration	96 Hours
Low Temperature Test	Low Temp	-40°C (±2°C)
	Duration	96 Hours
Heat Shock Test	High Temp	+75°C (±2°C)
	Low Temp	-40°C (±2°C)
	Changeover time	<30 Seconds
	Duration	1 Hour
	Cycle	100 cycles
Humidity Test	Temp	+40°C (±2°C)
	Relative humidity	90 - 95 %
	Duration	96 Hours
Temperature Cycle Test	Temp	-40°C to +75°C
	Duration	45 minutes
	Temperature gradient	1°C to 3°C / minute
	Cycle	25 cycles
Drop Test	Mounted with dummy set mass	10 g
	Height	1 m
	Cycle	6 cycles
Load Test	White noise (EIA filter) for 96 hours @ 0.5 W (2 V) input power	
	White noise (EIA filter) for 1 minute @ 0.8 W (2.5 V) input power	

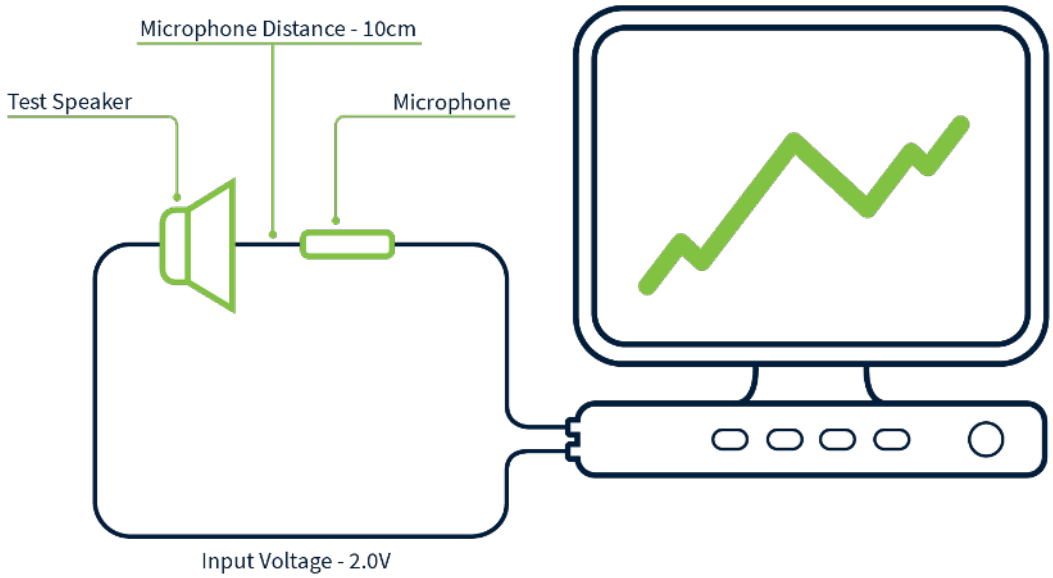
* SPL (Sound Pressure Level) as specified did not deviate more than ±3 dB from initial value, with no significant damage after testing.

3. Speaker Mesurement Conditions

3.1 Conditions

Standard Test Fixture Conditions	
Input Power	0.5 Watts (2 V)
Mode	TSR
Potentiometer Range	50 dB
Sweep Time	0.5 seconds

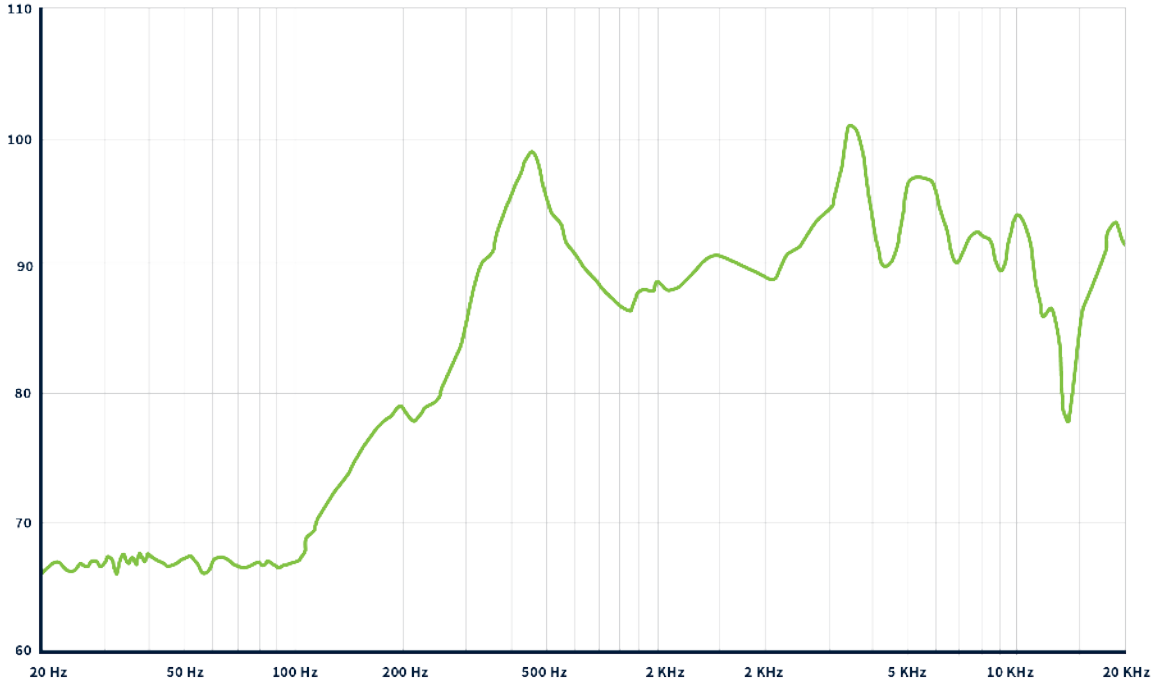
3.2 Measurement Fixture Diagram



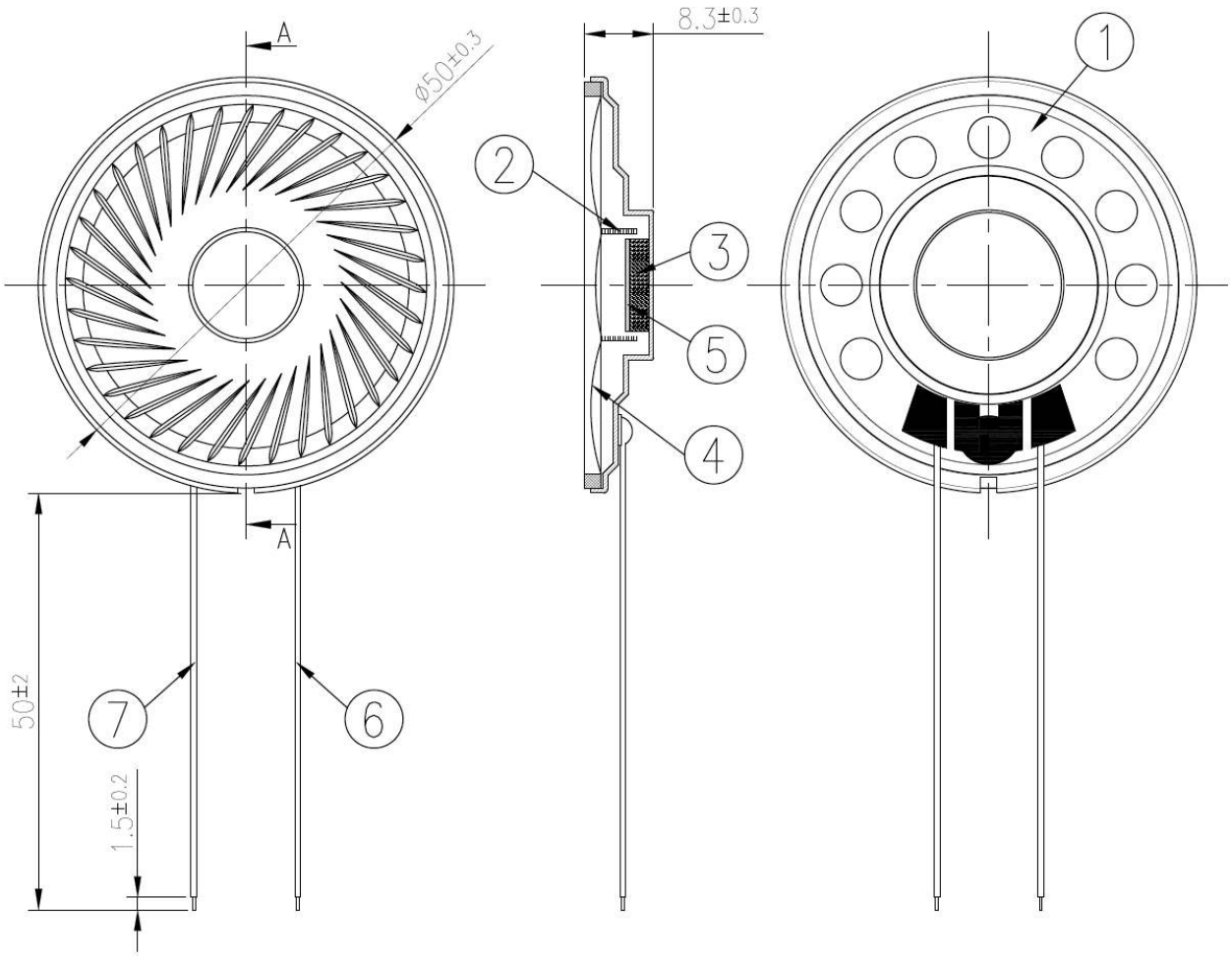
4. Speaker Characteristics

4.1 SPL

dBSPL vs. Frequency



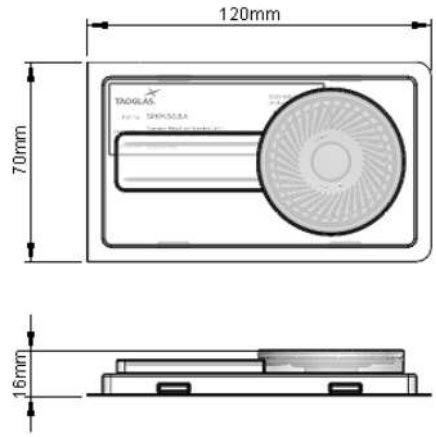
5. Mechanical Drawing (Units: mm)



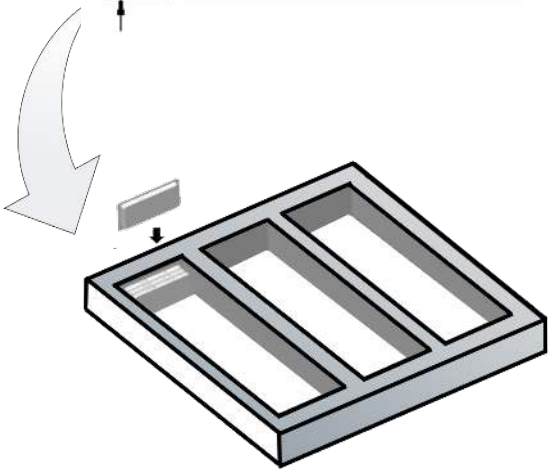
	Name	Material	Finish	QTY
1	ø50mm Frame	Fe	Zinc Plated–Blue White	1
2	8Ω Voice coil	Cu	Natural	1
3	ø12.5x1.0mm Magnet	Nd–Fe–B	Zinc Plated	1
4	48.4x75μ Diaphragm	PET	Natural	1
5	Gasket	T=1mm(Fe)	Zinc Plated–Blue White	1
6	UL1571 30AWG Lead wire	PVC	Black	1
7	UL1571 30AWG Lead wire	PVC	Red	1

6. Packaging

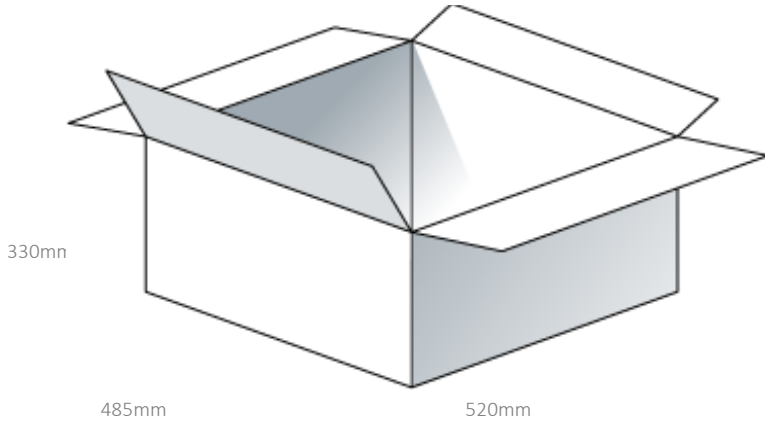
1 pcs SPKM.50.8.A per Blister
Dimensions – 120 x 70 x 16mm



135 pcs SPKM.50.8.A per EPE Tray
4 Trays SPKM.50.8.A per Carton
5 pcs SPKM.50.8.A per Layer Board



540 pcs SPKM.50.8.A per Carton
Dimensions – 520 x 485 x 330mm



Changelog for the datasheet

SPE-22-8-001 – SPKM.50.8.A

Revision: D	
Date:	18-11-2022
Changes:	Mechanical Drawings Updated to Rev D02
Changes Made by:	Carlos Gomes

Previous Revisions

Revision: A	
Date:	28-02-2022
Changes:	Initial release.
Changes Made by:	Jack Conroy

Revision: B	
Date:	17-05-2022
Changes:	Sound Pressure Level Updated
Changes Made by:	Paul Doyle

Revision: C	
Date:	12-08-2022
Changes:	Cover updated Introduction updated Specifications updated Reliability test updated Speaker measurement conditions updated
Changes Made by:	Carlos Gomes

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