



# TAOGLAS®



# Datasheet

## 15 mm Miniature Speaker - 8 Ohm

**Part No:**  
**SPKM.15.8.A**

### Description:

15mm 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 700mW peak

High Sensitivity

Dimensions: Ø15 x 3.5 mm

Connector: Wire Lead

RoHS & Reach Compliant

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# 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 15 mm Miniature Speaker offers a frequency response of 100 Hz - 11 kHz and high sensitivity, with 8 Ohm impedance and power handling of 0.5W RMS and 0.7W peak. Proven performance in demanding applications 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 | 85 dB SPL ( $\pm 3$ dB) @ 1000 Hz (0 dB SPL = 20 $\mu$ Pa)<br>Measuring Condition: 0.1 W (Sine wave) @ 0.05 m with baffle |
| Impedance            | 8 $\Omega$ ( $\pm 15\%$ ) @ 2 kHz with 1 V input signal and without baffle in place                                       |
| Frequency Response   | 100 Hz - 11 kHz                                                                                                           |
| Resonant Frequency   | 950 Hz ( $\pm 20\%$ ) Typical frequency @ 1 V                                                                             |
| Nominal Input Power  | 500 milliwatts                                                                                                            |
| Maximum Input Power  | 700 milliwatts                                                                                                            |
| Distortion           | Less than 10% @ 1 kHz, with input levels up to 2 V RMS                                                                    |
| Mechanical           |                                                                                                                           |
| Height               | 3.7 mm                                                                                                                    |
| Diameter             | 15 mm                                                                                                                     |
| Weight               | 0.005 Kg                                                                                                                  |
| Connector            | Wire leads – 32 AWG (UL1571)                                                                                              |
| Material             | PEI diaphragm with Neodymium Magnet, (without enclosure)                                                                  |
| Environmental        |                                                                                                                           |
| Temperature Range    | -20°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 (±5°C)        |
|                        | Duration                                                           | 96 Hours            |
| Low Temperature Test   | Temp                                                               | -40°C (±5°C)        |
|                        | Duration                                                           | 96 Hours            |
| Heat Shock Test        | High Temp                                                          | +80°C (±5°C)        |
|                        | Low Temp                                                           | -40°C (±5°C)        |
|                        | Changeover time                                                    | <30 Seconds         |
|                        | Duration                                                           | 1 hour              |
|                        | Cycle                                                              | 5 cycles            |
| Humidity Test          | Temp                                                               | +40°C (±5°C)        |
|                        | Relative humidity                                                  | 90 - 95%            |
|                        | Duration                                                           | 96 Hours            |
| Temperature Cycle Test | Temp                                                               | -40°C to +85°C      |
|                        | Duration                                                           | 45 minutes          |
|                        | Temperature gradient                                               | 1°C to 3°C / minute |
|                        | Cycle                                                              | 5 cycles            |
| Drop Test              | Height                                                             | 1 m                 |
|                        | Cycle                                                              | 6 cycles            |
| Load Test              | White noise (EIA filter) for 96 hours @ 0.5 W (1.25 V) input power |                     |
| Vibration              | Frequency 10 - 55 Hz                                               |                     |
|                        | Amplitude 1.5 mm                                                   |                     |
|                        | Frequency 10 - 55Hz Amplitude 1.5 mm - Time 30 seconds             |                     |

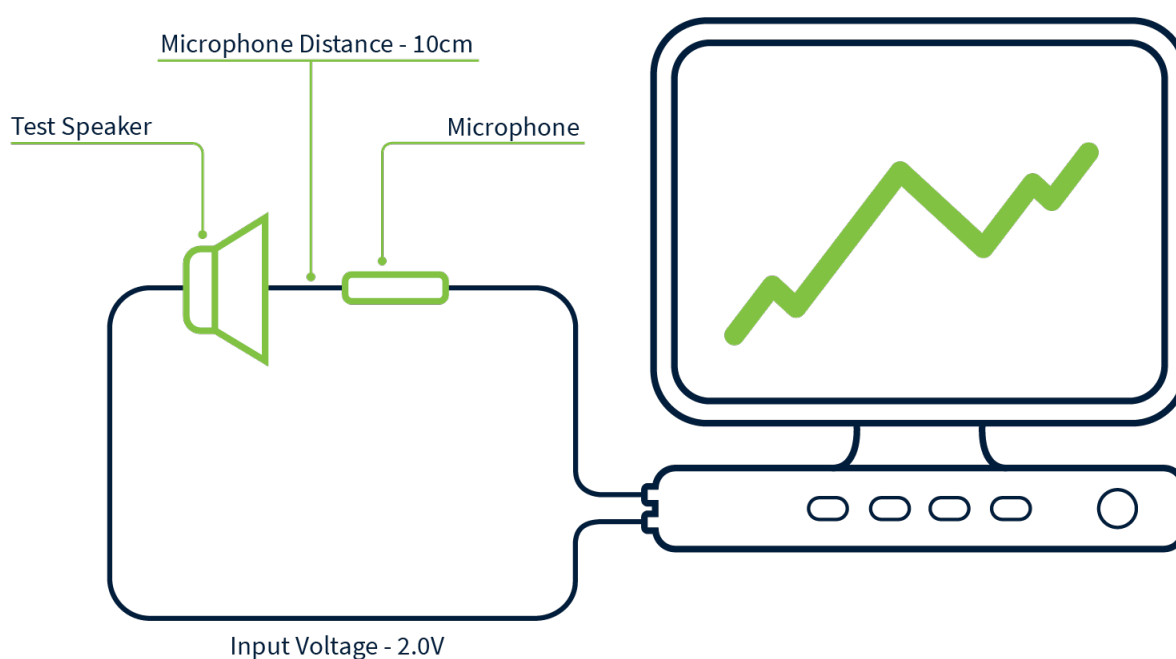
\* SPL (Sound Pressure Level) as specified did not deviate more than ±3 dB from initial value, with no significant damage after testing.

## 3. Speaker Measurement 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     |

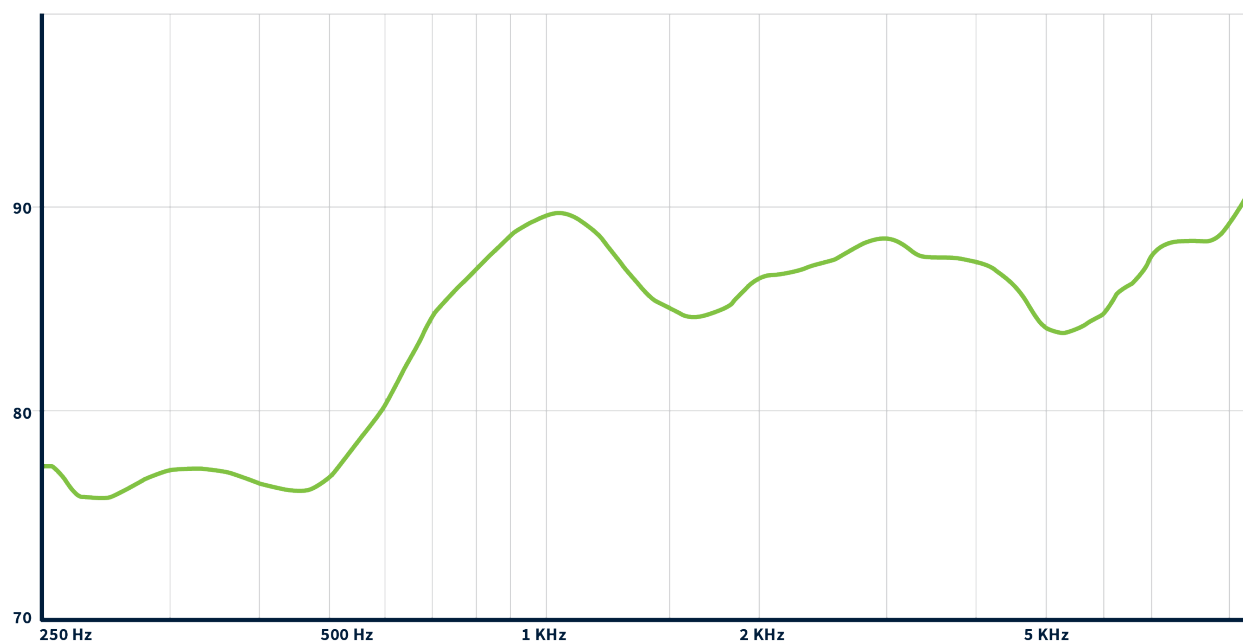
### 3.2 Measurement Fixture Diagram



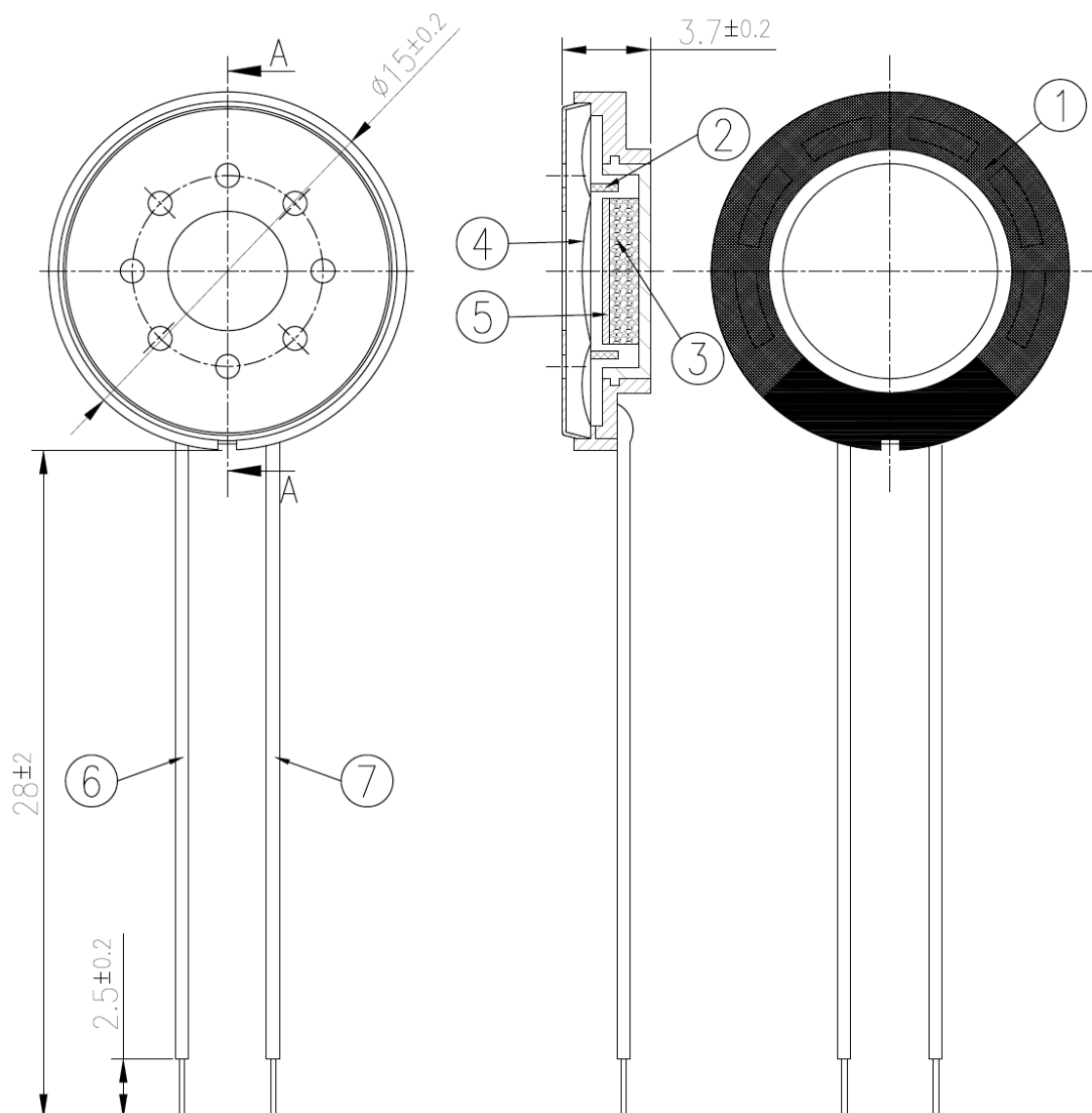
## 4. Speaker Characteristics

### 4.1 SPL

dB SPL vs. Frequency



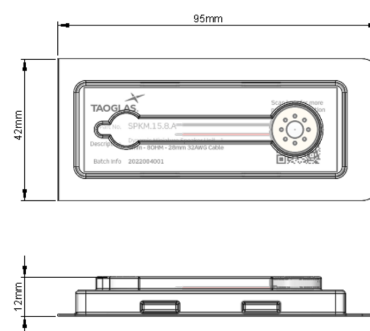
## 5. Mechanical Drawing (Units: mm)



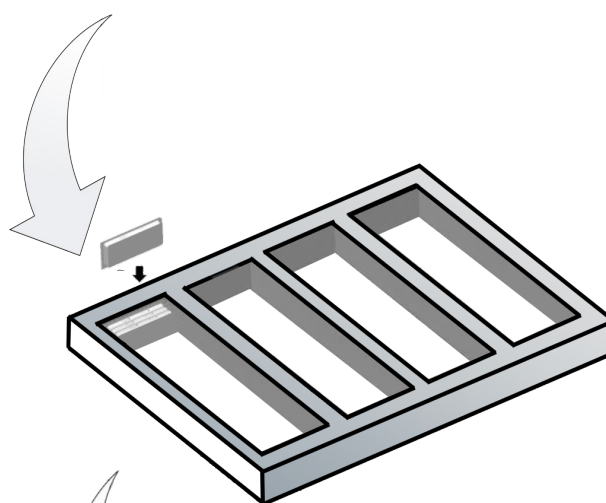
|   | Name                            | Material  | Finish                       | QTY |
|---|---------------------------------|-----------|------------------------------|-----|
| 1 | $\phi 15$ mm Frame              | PBT+Fe    | Black+Zinc Plated-Blue White | 1   |
| 2 | 8 $\Omega$ Voice coil           | Cu        | Natural                      | 1   |
| 3 | $\phi 7.9 \times 0.9$ mm Magnet | Nd-Fe-B   | Zinc Plated                  | 1   |
| 4 | 30 $\mu$ Diaphragm              | PEN       | Natural                      | 1   |
| 5 | Gasket                          | T=1mm(Fe) | Zinc Plated-Blue White       | 1   |
| 6 | UL1571 32AWG Lead wire          | PVC       | Black                        | 1   |
| 7 | UL1571 32AWG Lead wire          | PVC       | Red                          | 1   |

## 6. Packaging

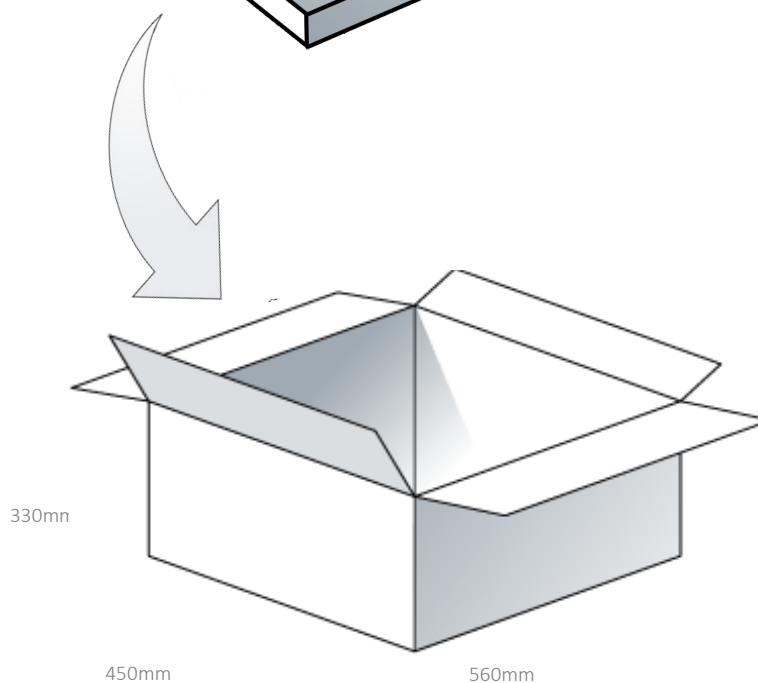
1 pcs SPKM.15.8.A per Blister  
Dimensions – 95 x 42 x 12mm



200 pcs SPKM.15.8.A per EPE Tray  
6 Trays SPKM.15.8.A per Carton  
7 pcs SPKM.15.8.A per Layer Board



1200 pcs SPKM.15.8.A per Carton  
Dimensions – 560 x 450 x 330mm



## Changelog for the datasheet

### SPE-22-8-009 – SPKM.15.8.A

#### Revision: D

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

#### Previous Revisions

#### Revision: A

|                  |                 |
|------------------|-----------------|
| Date:            | 18-02-2022      |
| Changes:         | Initial Release |
| Changes Made by: | Jack Conroy     |

#### Revision: B

|                  |                                             |
|------------------|---------------------------------------------|
| Date:            | 17-05-2022                                  |
| Changes:         | Sound Pressure Level Specifications Updated |
| Changes Made by: | Paul Doyle                                  |

#### Revision: C

|                  |                                                                                                                                                  |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Date:            | 12-08-2022                                                                                                                                       |
| Changes:         | Cover updated<br>Introduction updated<br>Specifications updated<br>Reliability test updated<br><del>Speaker measurement conditions updated</del> |
| Changes Made by: | Carlos Gomes                                                                                                                                     |



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