

**MODEL:** CLS0231MA-1 | **DESCRIPTION:** SPEAKER**FEATURES**

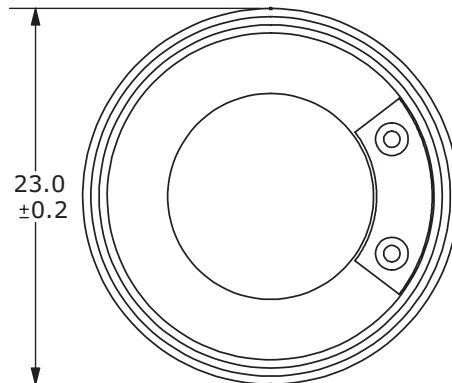
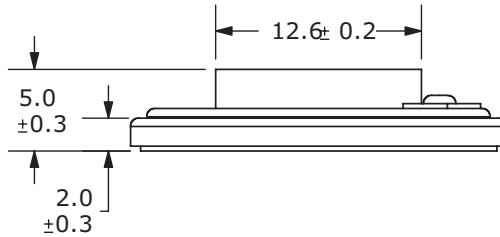
- 23 mm
- round frame
- 0.5 W
- 8  $\Omega$
- neodymium magnet
- mylar cone

**SPECIFICATIONS**

| parameter               | conditions/description                         | min | typ | max    | units        |
|-------------------------|--|-----|-----|--------|--------------|
| input power             |  |     | 0.5 | 1.0    | W            |
| impedance               | at 1.0 kHz, 1.0 V                              | 6.8 | 8   | 9.2    | $\Omega$     |
| resonant frequency (Fo) | at 1.0 V                                       | 504 | 630 | 756    | Hz           |
| frequency response      |  | Fo  |     | 18,000 | Hz           |
| sound pressure level    | at 1.0 W, 50 cm, avg at 0.8, 1.0, 1.2, 1.5 kHz | 85  | 88  | 91     | dB           |
| buzz, rattle, etc.      | must be normal at sine wave                    |     |     | 2.0    | V            |
| dimensions              | $\varnothing$ 23 x 5                           |     |     |        | mm           |
| magnet                  | Nd-Fe-B  |     |     |        |              |
| cone material           | mylar  |     |     |        |              |
| terminal                | solder pads                                    |     |     |        |              |
| operating temperature   |  | -25 |     | 60     | $^{\circ}$ C |
| hand soldering          | for maximum 3 seconds                          | 340 | 350 | 360    | $^{\circ}$ C |
| RoHS                    | yes  |     |     |        |              |

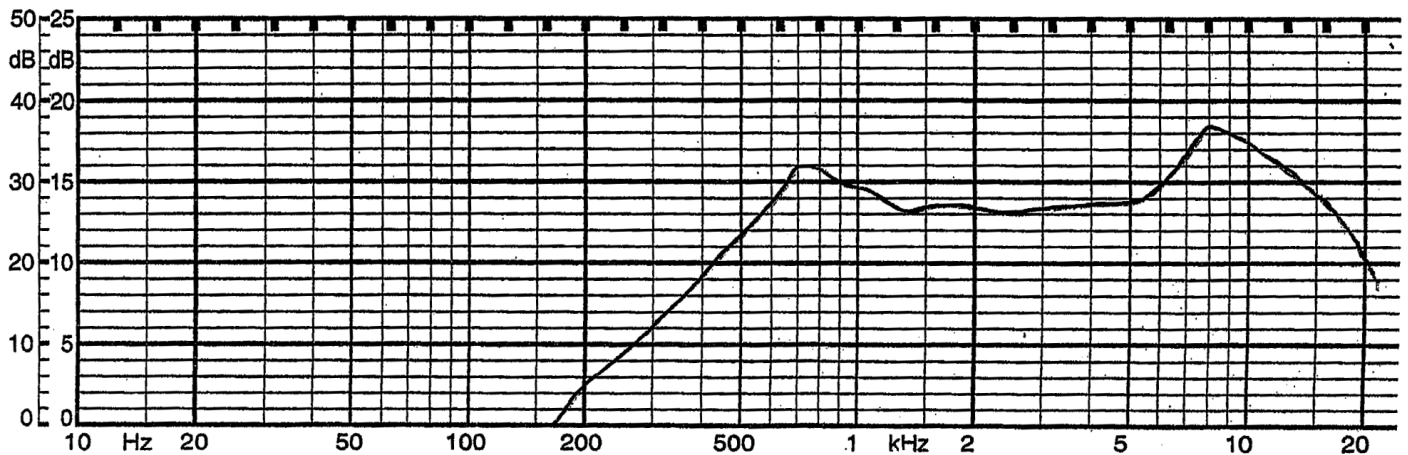
## MECHANICAL DRAWING

units: mm



## FREQUENCY RESPONSE CURVE

| parameter             | conditions/description |
|-----------------------|------------------------|
| potentiometer range   | 50 dB                  |
| rectifier             | RMS                    |
| lower limit frequency | 20 Hz                  |
| wr. speed             | 100 mm/sec             |
| zero level            | 60 dB                  |



## REVISION HISTORY

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| rev. | description       | date       |
|------|-------------------|------------|
| 1.0  | initial release   | 07/03/2007 |
| 1.01 | updated datasheet | 02/01/2010 |
| 1.02 | brand update      | 02/05/2021 |

The revision history provided is for informational purposes only and is believed to be accurate.

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