molex®

PRELIMINARY Balanced Armature Audio Receiver

Balanced-Armature receivers from Molex provide space savings, higher-clarity mid-range sound and superior acoustic performance compared to competitive versions and traditional dynamic-style receivers.

There are several different audio receiver technologies used to translate electrical signals into acoustic signals. Among these are the traditional disc-shaped dynamic driver types, and the newer and smaller balanced armature receiver (or also called a driver) types.

Balanced armature receivers are the preferred technology in applications where efficiency (battery life) and size are critical parameters. Application examples include hearing aids, in-ear earphones and various security headsets.

The growth of the premium in-ear earphone market over the past several years has stimulated OEM audio manufacturers to conceive increasingly higher-performing, smaller and more attractively-designed earphones for this market. Balanced armature receivers are an increasingly popular choice for these OEMs because of their space saving and high-fidelity features.

Balanced armature technology offers substantially more sound output per unit size compared to dynamic types. This is an advantage in miniaturized applications such as hearing aids, or in applications where several receivers are used to produce different functions such as tweeter, mid and bass tones. The technology also produces a cleaner mid-to-high range sound than dynamic receivers, although dynamic types produce a better bass sound.

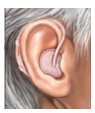
Features and Benefits

Sound output	Offers superior sound output and cleaner mid-range sound compared to similar-size dynamic-style receivers
Space savings	Provides up to 20% space savings versus similar competitive types and up to 75% versus dynamic receivers
Lower power consumption	Efficiently transforms energy into sound to save or extend battery life
Higher frequency range	Higher bandwidth in higher frequency range
Customizable	Impedance or other specifications can by customized to meet specific requirements
In-house precision manufacturing capabilities	Better overall quality control and cost-effective design

Markets and Applications

- Hearing Aids
- Speakerphone and accessory box
- Pacemaker
- In-ear earphone (Single Driver)
- In-ear earphone (Multiple Driver)

Pacemaker



Hearing Aid

In-ear earphone (single driver)

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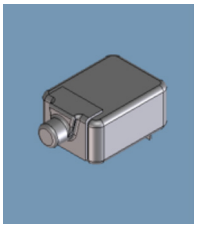
Specifications

Molex 504410 Series

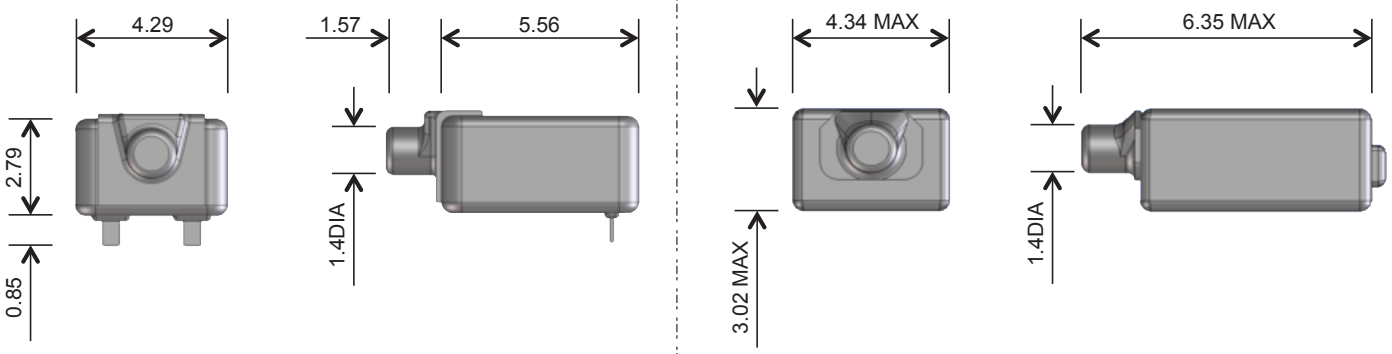


Spout	Yes
Sensitivity	104 +/- 4dB (0dB = 20uPa, at 1kHz)
Total Harmonic Distortion	10% Max.
Impedance	400 +/-80 Ohms
External Size	4.3mm W x 5.6mm L x 2.8mm H
Weight	< =0.27g

Dual Type

Molex also offers a dual-type balanced Armature version for split-frequency requirements. Contact Regional Product Manager for details.

Size Comparison Versus Competition



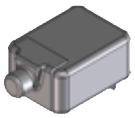
Molex 504410 Series | **Competitive Version**

Molex 504410 series offers up to 18% space savings (not Including PCB placement peg) versus many competitive types

Audio Receiver Comparison:

Dynamic Type Versus Balanced Armature Type

Dynamic Receiver



Balanced Armature Receiver

Volume:	340mm^3
Sensitivity:	106dB m/W

Volume:	80mm^3
Sensitivity:	106dB m/W

Balanced Armature technology can save up to 75% of space compared to traditional Dynamic style receivers while producing similar sound output and quality (measured as decibel sensitivity)

www.molex.com

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