Case Study: GORE® MEMS Protective Vents Style 200 in New Dimensions

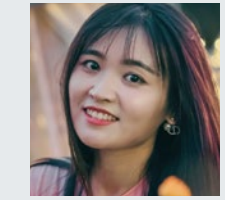
Tiny Vent with Great Impact: Optimum Solution for TWS Earbuds



CHALLENGE

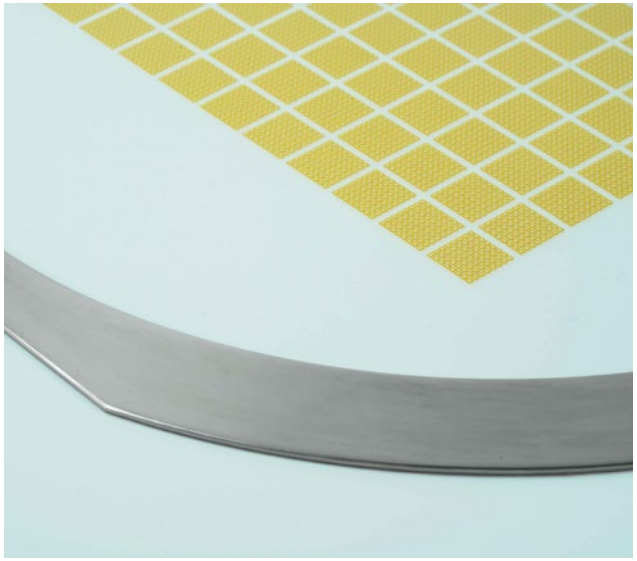
When China's largest OEM launched its True Wireless Stereo (TWS) earbuds in 2020, it entered the market successfully. Unfortunately, they received an **increasing number of returns** in the following months. To prevent a **reputation loss**, the OEM took a closer look at the returned products and was able to detect the root of the problem.

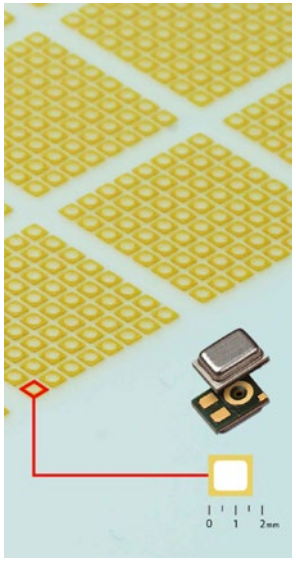
Luckily, the OEM has already worked with Gore on previous projects and knew we were able to develop a solution that would fit their needs.



"They examined the devices and the MEMS microphones and found out that the MEMS microphones were contaminated with particles from the environment. The OEM then knew they needed a particle barrier or a similar vent to protect the microphones and keep them contamination-free."

Sophia Y Zhang, Product Specialist





GORE® MEMS Protective Vents Style 200

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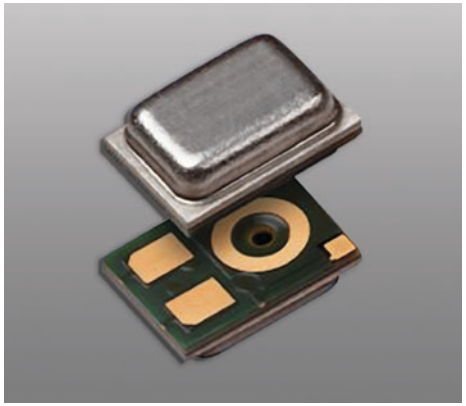
SOLUTION

As Gore has not worked with TWS earbuds before, we first examined the product further and quickly realized that it held special challenges.

Since the device in question is mostly used to listen to music, the set standards for **sound quality** are higher than for other devices like smartphones. Also the built-in microphone is farther away from the mouth, so the solution we were looking for needed both: **A high filtration efficiency and a high acoustic transparency**.

These requirements are already difficult to meet. To complicate it even further, the matching solution needed to be developed in a **new dimension of construction size**. Since the MEMS microphones are integrated into an already small device, the protective vent needs to be even smaller but still suitable for an automatic packaging process.

With these specifications in mind, Gore customized a product that stood out with its industry-leading protection against particles, acoustic performance, and easy application before: **GORE® MEMS Protective Vents Style 200.**



THE TECHNOLOGY BEHIND THE SOLUTION: GORE® MEMS PROTECTIVE VENTS STYLE 200

The solution used to help the smartphone OEM in need was GORE® MEMS Protective Vents Style 200 for microphone manufacturers. For specifications and more detailed installation information, please visit this link:
GORE® MEMS Protective Vents Style 200

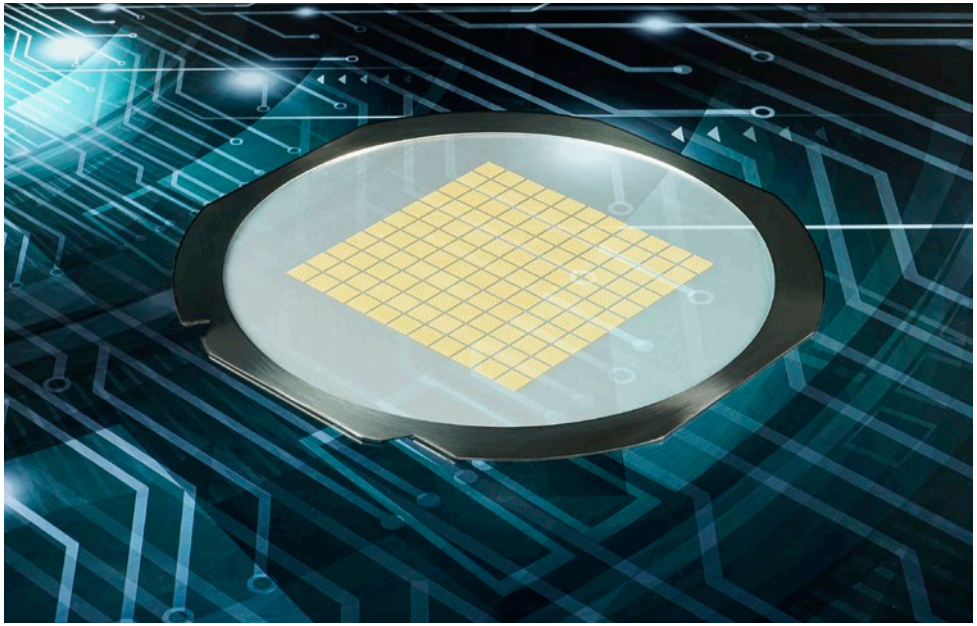
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RESULTS

With their expertise from previous projects, the Gore team developed a solution that exceeded the OEM's expectations. Because of its high and consistent performance, they continued to rely on Gore's MEMS Protective Vents Style 200 after this project and integrated it not only in the following generations of TWS earbuds but also in their smartphone portfolio. Here is what convinced them:

- A potential reputation loss was averted
- The reclamation rate dropped from 1000's ppm to a two-digit number, saving costs throughout the entire value chain
- The acoustic insertion loss was kept below 0.5dB, which secured a high sound quality
- The microphone vendors improved their yield and thus increased the cost efficiency of their production



WANT TO KNOW MORE?

To learn more, visit our website: **gore.com/mems**

Or check out more of our case studies: **gore.com/mestories**

Why Choose GORE® Protective Vents for Your Electronic Devices?

Leading OEMs have specified over 5 billion GORE® Portable Electronic Vents because they know our products and services can help accelerate their development of innovative and differentiated devices in fast-paced, highly competitive markets.

PRODUCT AND APPLICATION LEADERSHIP

Grounded in a deep understanding of material science and acoustics, Gore can provide the optimum venting solution. We balance trade-offs between diverse problems such as adverse operating environments, immersion events and acoustic performance.

RELIABLE PERFORMANCE

To ensure products are "fit for use", every Gore product must adhere to the highest standards of quality, performance and reliability. Through a comprehensive understanding of end-use applications and requirements, our products do what they say they will do.

FAST DEVELOPMENT

The mobile electronics industry develops and releases new products quickly. Our fast response to customer requests during the development process sets us apart. Gore supports this need for quickness with designs and prototypes to ensure engineering teams can meet their project timelines and their application requirements.

SUPPLY SECURITY

Leading OEMs specify Gore because we have consistently proven our ability to quickly ramp up to supply vents for projects of over 10 million devices per year and to continue to supply high quality products on-time without disruption.

MATERIAL SCIENCE

Gore is a global materials science company dedicated to transforming industries and improving lives. Gore develops materials with microporous structures that provide desirable attributes and performance characteristics to engineer vents and other products used in a variety of markets and industries.

GLOBAL SUPPORT

Our global teams of sales associates, application engineers, manufacturing engineers, and research personnel enable us to provide agile and robust support to customers around the world.

Interested in Testing Our Products or Talking to Our Experts?

For additional assistance, please contact a Gore representative.

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PEV-174-STD-EN-FEB23