



MATERION



ADVANCED MATERIALS

Etch Lids™ –
Seam Sealed
Hermetic Packaging

Etch Lids™ – Seam Sealed Hermetic Packaging

The Challenge

It is critical that hermetic semiconductor packages have a reliable cover to protect their contents from the surrounding environment. In addition, some chips will not tolerate high temperatures during soldering. Low temperature lid sealing is required for certain applications. In those circumstances, a low temperature seam sealing process is necessary. Customers may also prefer a hermetic lid with minimal precious metal content in order to minimize cost.

The Solution

Materion is the industry's microelectronic packaging cover lid innovator. We now manufacture Etch Lid™ whose lids are composed of Kovar molybdenum, steel and other metals. They are used in the seam welding process to melt and fuse the thinner edges of the lids to the ceramic or metal package's seal ring. Etch Lids™ are for hermetic applications where the chips are unable to withstand solder reflow temperatures in a furnace. Instead, seam sealing concentrates the heat at the perimeter of the lid. The lid material (typically Kovar or steel) can be welded to the seal ring beneath it, or we can place a solder preform at the perimeter of the lid to enable localized melting of the solder onto the seal ring. Etch Lids™ can be comprised of the lid only, or a lid plus a solder frame.

Materion offers combined solutions of designing and attaching solder frames of various compositions onto the thinner edges of the etch lids to enhance the seam seal strength. We also provide design services for both Etch lid and Solder Frame if the metal and ceramic seal ring dimensions or drawing are furnished.

PREFORMS

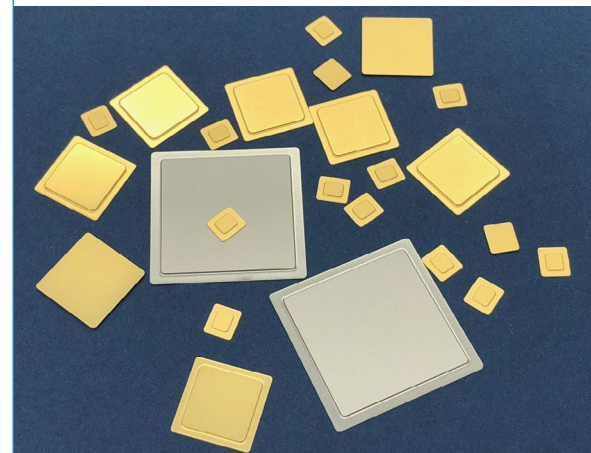
Available in a variety of shapes, sizes, materials and configurations.

- Disks & Rectangles
- Squares & Frames
- Rounds & Rings
- Irregular & Complex
- Custom Shapes

LIDS FOR EVERY APPLICATION

Our product line encompasses a broad range of lids:

- Combo-Lid™ for high reliability applications
- Ceramic Combo-Lid™ for hermetic sealing of ceramic packages
- Micro-Lid™ for packages smaller than < .300 in²
- Seam Seal-Lid™ for sealing heat sensitive electronics
- Visi-Lid™ and Visi-Cap for sensor applications
- Non-Magnetic and Ceramic Epo-Lid™ for specialty applications



Materion ... Materials to Advance the World's Technologies

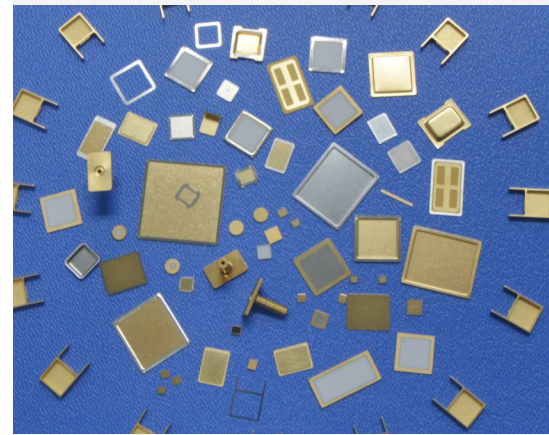


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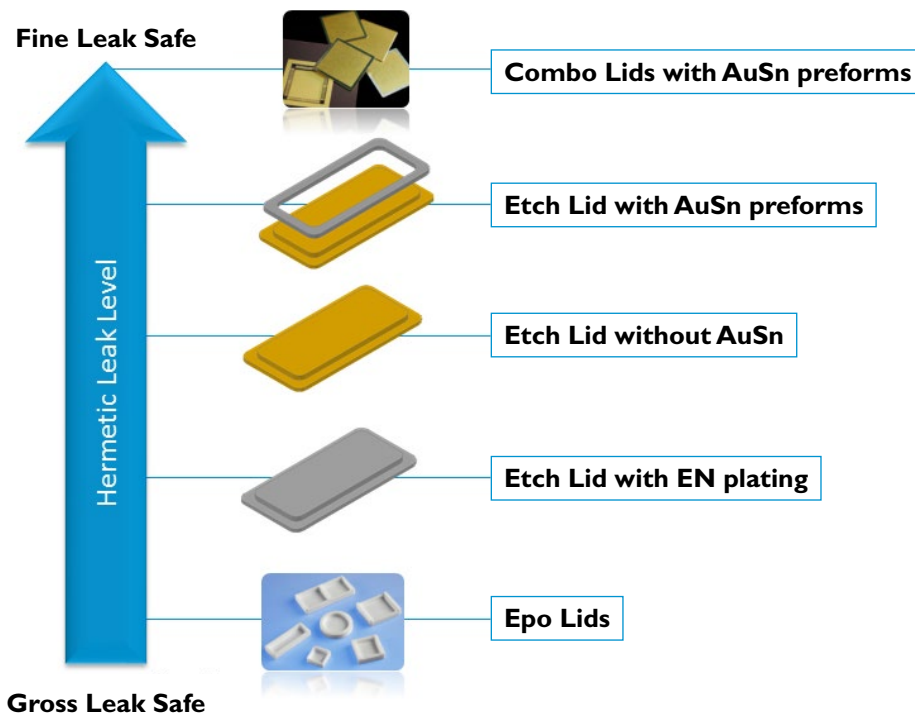
ETCH LIDS OPTIONS

Various options are available to achieve an optimal packaging solution for your application:

- Etch lid with either electroless or electrolytic Nickel plating
- Etch lid with Nickel & Gold plating
- Etch lid with Nickel & Palladium plating
- Etch lid with Nickel/Gold/Nickel/Gold plating
- Etch lid with Nickel/Gold with AuSn solder attached
- Etch lid with Ni-Au-Ni-Au plating and AuSn solder frame attached
- Etch lid with Nickel & Palladium with thin AuSn solder attached
- Etch lid with an opening for AR coated glass window attachment
- Etch lid with selected getters tack welded to the ceiling of the lid



LEVEL OF COVER PRODUCT HERMETICITY



BENEFITS

Materion can customize & manufacture a wide variety of lid designs to meet your hermetic sealing requirements.

- Tooled for over 8,000 preform shapes
- Highly effective seal ring that allows excellent soldering
- Gold-tin alloys create superior hermetic seal without flux
- Non-precious and lead-free solders available
- Edge metallization on ceramic lids for uniform fillet formation
- Preform tack welding for both metal and ceramic products
- Faster service via our exclusive COVERexpress™ Service
- Applications engineers available for trouble-shooting or to accelerate product development



ADVANCED MATERIALS

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MATERION ADVANCED MATERIALS is an industry leader in providing durable and best-cost solutions for metal and ceramic packages and hermetic covers/lids for the microelectronics industry. We offer a comprehensive portfolio of packaging materials in precious or non-precious material and can customize innovative electronic package materials to satisfy your unique needs. Our high-reliability packaging also supports most configurations, applications and volume requirements. Because of our industry expertise, extensive global manufacturing capabilities and R&D proficiency, we are able to meet customers' packaging requirements today and partner with them to meet future challenges.