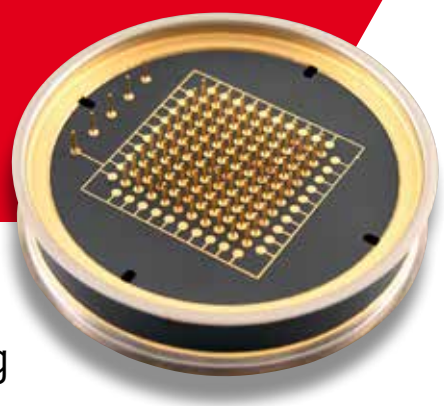
AEGIS™ / GSP GLASSEAL PRODUCTS™ / AMETEK® ENGINEERED INTERCONNECT AND PACKAGING







HERMETIC ELECTRONIC PACKAGING



AMETEK Aegis and Glasseal Products are world leaders in the design and manufacturing of Hermetic Electronic Packaging.

Our capabilities enable our products to be used in the most critical applications for defense and aerospace.

Key products include:

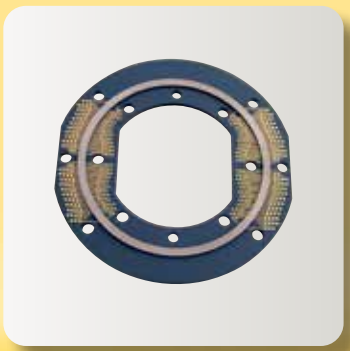
- Machined housings
- Headers and terminals
- Ceramic solutions

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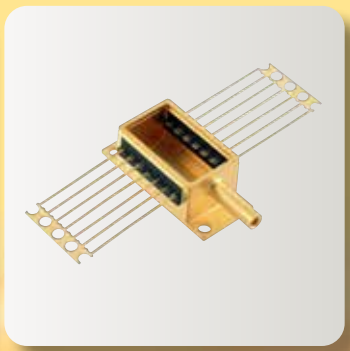
DESIGN AND MANUFACTURE EXPERTISE

AMETEK Engineered Interconnect & Packaging (EIP) has been in the Hermetic Electronic Packaging industry with its brands Aegis and Glasseal Products for nearly sixty years. Its highly trained staff is dedicated to meet customers' needs.

Experienced engineering teams use the latest CAD and CAM software to design all aspects of manufacturing, fixturing, process control and quality engineering. These cross-functional teams are highly motivated and focused on quality and on-time manufacturing. AMETEK EIP works closely with its customers' engineering teams to design the most producible and cost-effective solution.







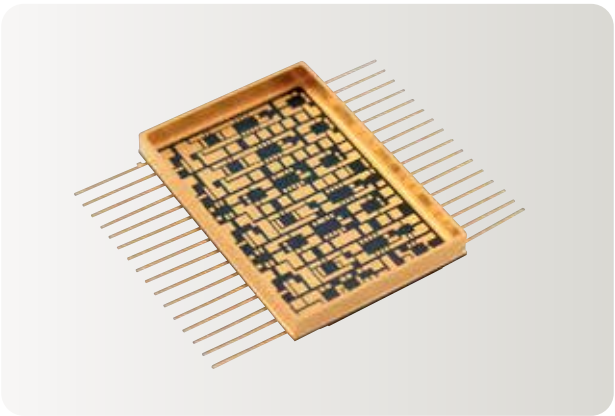


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Vertically Integrated Supply Solution

AMETEK EIP is vertically integrated in its design and manufacturing capabilities. With an extensive inventory, new tooling can easily be created in-house to assist its customers in reducing time-to-market and product cost. All shipping trays are custom designed to protect products in transit. With over 100,000 sq. ft. of combined manufacturing space in the U.S. and Malaysia, AMETEK EIP can be a single source for all Hermetic Electronic Packaging needs.

With its two expert Hermetic Electronic Packaging brands Aegis and Glasseal Products, AMETEK EIP offers wide working knowledge and experience in using various metal, glass materials, and ceramic configurations to suit customer designs.



Glass-to-Metal Sealing (GTMS)

AMETEK EIP has been sealing the most demanding configurations of microelectronic packages since the 1980's. Both Aegis and Glasseal Products facilities manufacture a full range of industry standard and complex custom packages in both glass and ceramic configurations, to exact drawings and technical requirements.

Product Features:

- Hermeticity
- High electrical insulation
- Wide temperature range
- Mechanical stability
- Resistance to harsh environment
- High conductivity thermal
- Prototyping ability
- In-house graphite fixture design and fabrication





Ceramic

With more than 35 years of experience in high-temperature cofired ceramic technology, AMETEK EIP is an internationally recognized supplier to many industries that utilize ceramic technology for their products. AMETEK EIP's commitment to quality products coupled with its custom design and manufacturing experience has made it a leader in the markets it serves. Understanding the intricacy and detail that is involved in designing a ceramic package, feedthrough or substrate AMETEK EIP takes pride in helping customers design some of the most advanced solutions in the world.

Product Features:

- Custom ceramic design support
- Multilayer high-temperature cofired ceramic (HTCC) technology
- Utilize 90%-94% Al_2O_3 (black or white)
- Tungsten and moly-manganese base metallization
- Lens and lid attach with hermetic soldering
- Heatsink, lead and connector attach
- Meet Mil-Std-883 reliability standard

Metal Working

AMETEK EIP's commitment to quality and delivery requires it to produce its own components. Its tool makers understand the need for the highest quality and demanding tolerances required in the manufacture of microelectronic packages.

Manufacturing Capabilities:

- Machining: palletized CNC vertical milling centers and turning equipment
- Stamping
- Deep drawing, flywheel and hydraulic press
- Punching
- Drilling and reaming, jig boring
- EDM: wire and plunge
- Grinding: feed through and surface
- Lapping and sanding
- Deburring: tumbling and hand deburring
- Heat treating
- Lead forming dies

Plating

Plating capabilities are an extremely critical manufacturing component in the Hermetic Electronic Packaging industry. Utilizing rack, barrel, and vibratory techniques, AMETEK EIP is able to apply a wide range of plating on various types of metal. With an in-house plating area it can handle any production volume and delivery rate customers may need.

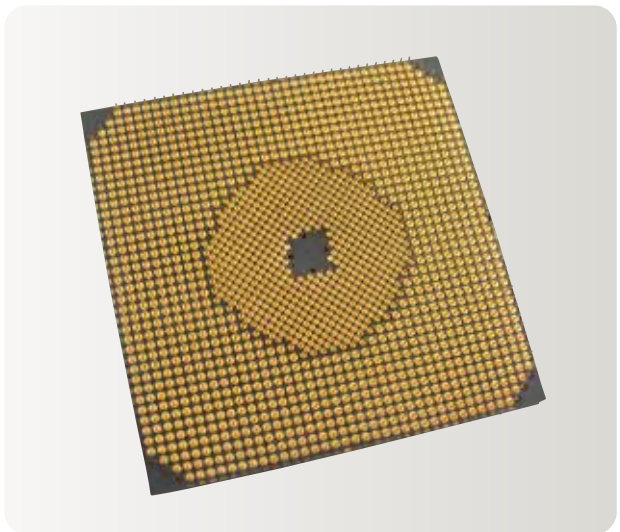
AMETEK EIP is also proud to be at the forefront of implementing available "green technologies" before the mandated deadlines defined by local, state, and federal agencies. With both leading brands Aegis and Glasseal Products, the business is able to meet all product and process regulations worldwide.



Inspection and Testing Capabilities

AMETEK EIP has all of the appropriate equipment and know-how to validate compliance to most demanding requirements such as:

- Coordinated measuring machines
- Optical measuring machines
- Optical comparators
- Liquid to liquid thermal cycle/shock
- Pressure test to 45,000 psi (at ambient temperature)
- Metallurgical lab for failure analysis
- Steam age/solderability testing
- Humidity testing
- High voltage to 6000 VAC/VDC
- Temperature cycling
- Lead fatigue
- Hermeticity validation to 1 x 10^{-11} cc/sec of helium at 1 atmosphere differential pressure
- Insulation resistance to 10 gigaohms at 500 VDC
- Salt spray
- Compliance to JEDEC Std. 9





Prototyping

AMETEK EIP offers prototyping and understands the importance of getting prototypes out and into the market. Its dedicated engineering and production teams work closely with its customers to design for manufacturability and to streamline the manufacturing process. This ensures that the prototype parts are of the highest quality and delivered in a timely manner.



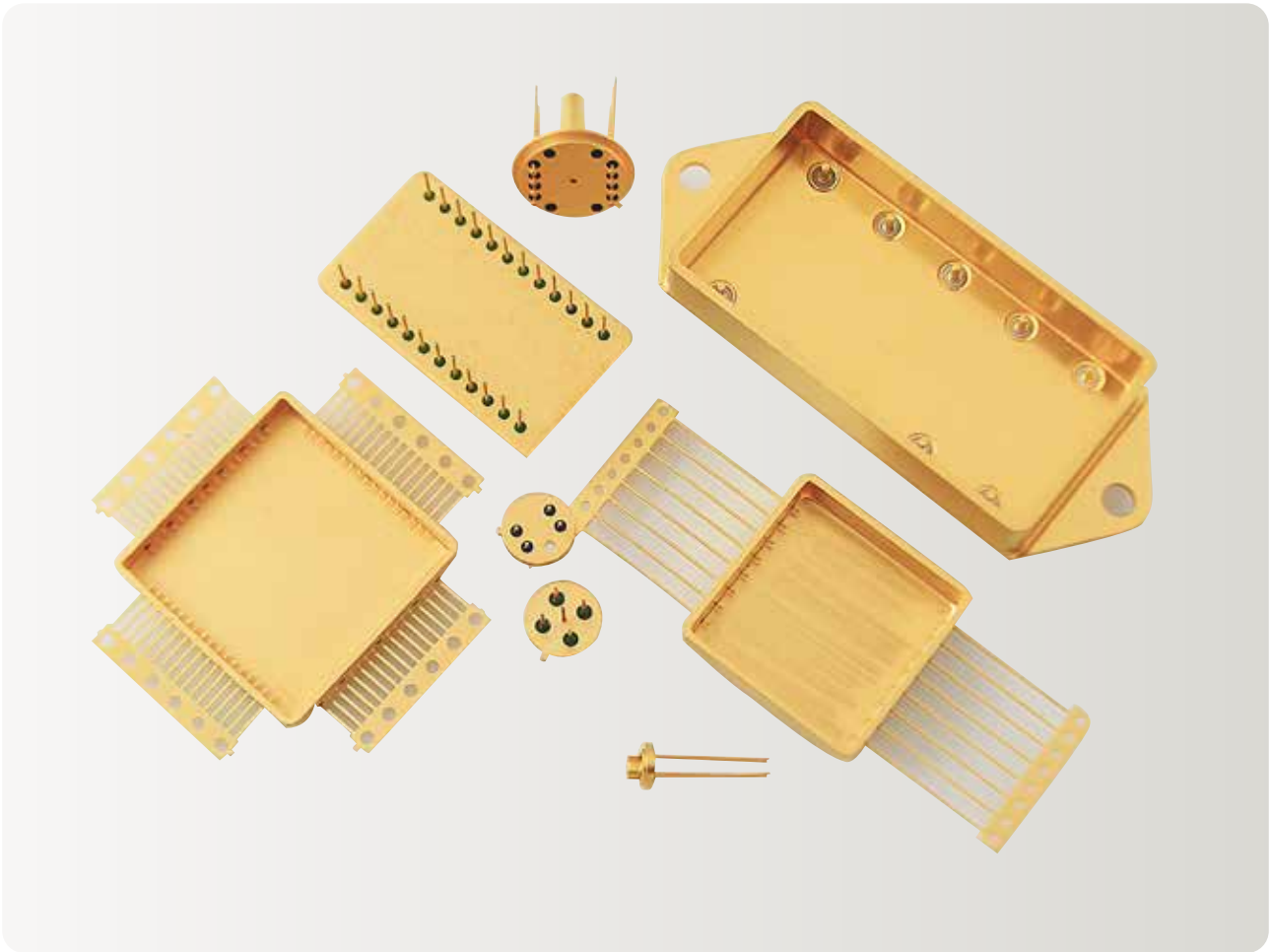
Manufacturing site in Malaysia

AMETEK EIP has expanded overseas with its brand Glasseal Products and its manufacturing facility in Penang, Malaysia. This factory represents the continued effort to service customers in and around Malaysia and respond to the growing demand in that region. AMETEK EIP is proud to be offering the same reliable service and high quality product with its brand Glasseal Products from Malaysia in which the electronic components industry has grown accustom from AMETEK EIP US facilities.





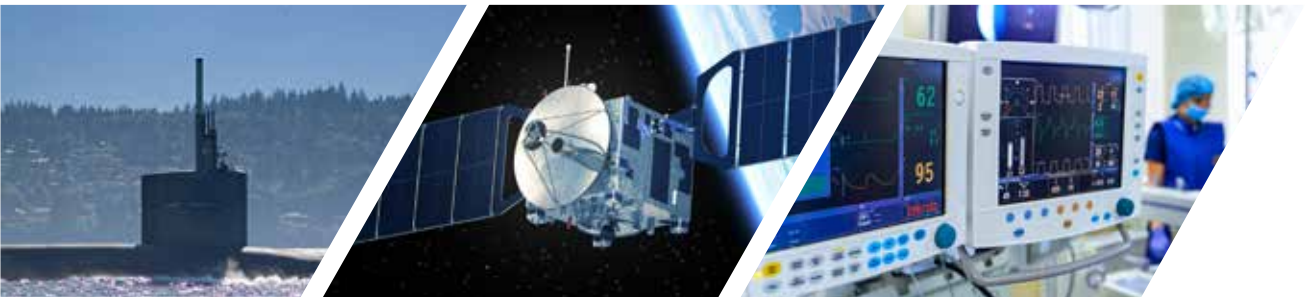
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AMETEK EIP overview

AMETEK Engineered Interconnects and Packaging (EIP) and its brands Aegis and Glasseal Products utilize custom metal working capabilities as well an expertise in Glass-to-Metal Sealing (GTMS), Ceramic-to-Metal Sealing (CTMS), and High-Temperature Cofired Ceramic (HTCC).

- Leading provider of Hermetic Electronic Packaging, connectors, and substrates since 1955
- 100,000 sq. ft. of combined manufacturing space in the U.S. and Malaysia
- Multiple factory locations allowing for flexibility in manufacturing and security of supply
- Front end design engineering support
- Full tool room and machine shop
- High and low temperature brazing
- Precious metal plating operation
- High-Temperature Cofired Ceramic expertise
- GTMS and CTMS technology
- Testing to MIL-STD 883
- ISO 9001 registered
- AS9100 registered
- RoHS compliant



ABOUT US

AMETEK Engineered Interconnect and Packaging (EIP) is the world leading producer of end-to-end electronic packaging solutions for harsh environments and reliability sensitive applications. Consisting of five leading brands Hermetic Seal, Sealtron, AMETEK SCP, Aegis and Glasseal Products, experts for hermetic electronic connectors and packaging, AMETEK EIP can offer a wide range of material technologies, including metals, glass, ceramics, and plastics and has the unique expertise required to design, custom manufacture, and scale tailored solutions using any material or combination of materials required.

AMETEK Aegis manufactures high reliability hermetic glass to metal seal hermetic packages for the microelectronics industry that meet and exceed the quality standards adopted by US and European Militaries, as well as the various commercial communities and industries.

AMETEK Glasseal Products has been sealing glass to metal for more than 60 years, and is one of the most versatile manufacturers of hermetically sealed interconnection and microelectronic packaging components. Glasseal Products has a broad portfolio of connectors, header, feed thru's, end seals and packages in both glass and ceramic configurations, manufactured to both standard MIL Spec and customized designs.

AMETEK Engineered Interconnect and Packaging (EIP) is a business unit of AMETEK, Inc., a leading global manufacturer of electronic instruments and electromechanical devices with annualized sales of approximately $6 billion.

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