Hybrid Electronic Packages

Aegis Electronics has been equipped with industry-leading expertise in the design, development and manufacturing of various hermetic-seal based electronics components and packages, which meet and oftentimes exceed the customers' demanding requirements in performance, quality, and time delivery, by using a variety of innovative and cost-effective technical solutions.

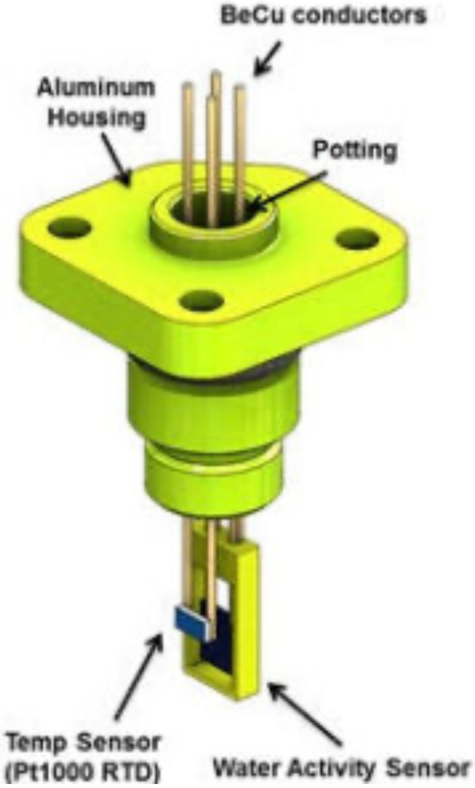
Over years, Aegis Electronics has manufactured a number of
(1) Microwave/RF device/components that include electrical feedthroughs, photodetectors, modulators, and opto-electronic window assemblies, and
(2) Biomedical devices including environmental sensors/detectors, by utilizing our industry-leading expertise in ceramic to metal joining, glass to metal seal and other hybrid packaging technology.

The company has successfully conducted numerous challenging projects for customers' new product development for various applications including medical, aerospace, defense, oil and gas, and telecommunication. Some projects were at the very early stages of new product development starting from a concept design, development work (material/processing selection, evaluation and testing), prototyping and finally to a volume manufacturing. Some are in their pre-production stages, in which we provided the service of design/material/processing evaluation, modeling/analysis, and optimizations for final production.

Aegis Electronics has well established its capability for hermetic-seal based products (components and devices) and the associated manufacturing services, which may work under high temperature, low temperature (cryogenic), high vacuum, high pressure or corrosive environment. The services provided include: (1) Technical consultations and engineering support in the initial development stage of products with material selections, processing development, and design evaluations (e.g. modeling and simulations), and (2) Follow-up pilot-scale production or small-scale manufacturing to establish a final cost-effective, reliable and repeatable manufacturing.

Aegis Electronics has established a solid, long-term collaboration with a number of universities, national laboratories, and commercial company that meet military, aerospace and FDA standards, and ISO9001-2008 standards.

Aegis Electronics is teamed with Aegis Technology (dba: complete Hermetics) and offers a wide spectrum of custom-made hermetic products, primarily hermetic packages and seal enclosures that are used in applications such as oil/energy (e. g. offshore drilling), aerospace, communication systems, and medical devices where components need protection from electrical, pressure, or vacuum impacts.



Over years **Aegis Electronics** designs and manufactures high-quality hermetic electronic packages for amplifiers, lasers, modulators and other components in fiber optics, microwave and telecom packages. **We have** also offered customized hermetic seals and packages for biomedical device applications, providing the very highest quality in manufacturing to give customers the correct hermetic packages that are compliant with all the demanding standards for their applications.

All these customized hermetic packages and seals including feedthroughs are utilizes our industrial leading ceramic-to-metal seals and/or glass-to-metal seals technology, with the hermeticity (up to 1×10-9 atm cc/sec He), and insulation resistance (typically > 1 GΩ @ 100 VDC). In general, as compared to glass-to-metal seals, ceramic-to-metal seals provide more advantages in harsh environments such as high-temperature operations, which however are less labor or cost effective. Aegis Electronics would strictly follow the customers' requirements and manufacture custom made ceramic-to-metal or glass-to-metal seal-based hybrid packages and components. We would also provide our leading expertise in helping our customers to select best material and processing for their products.