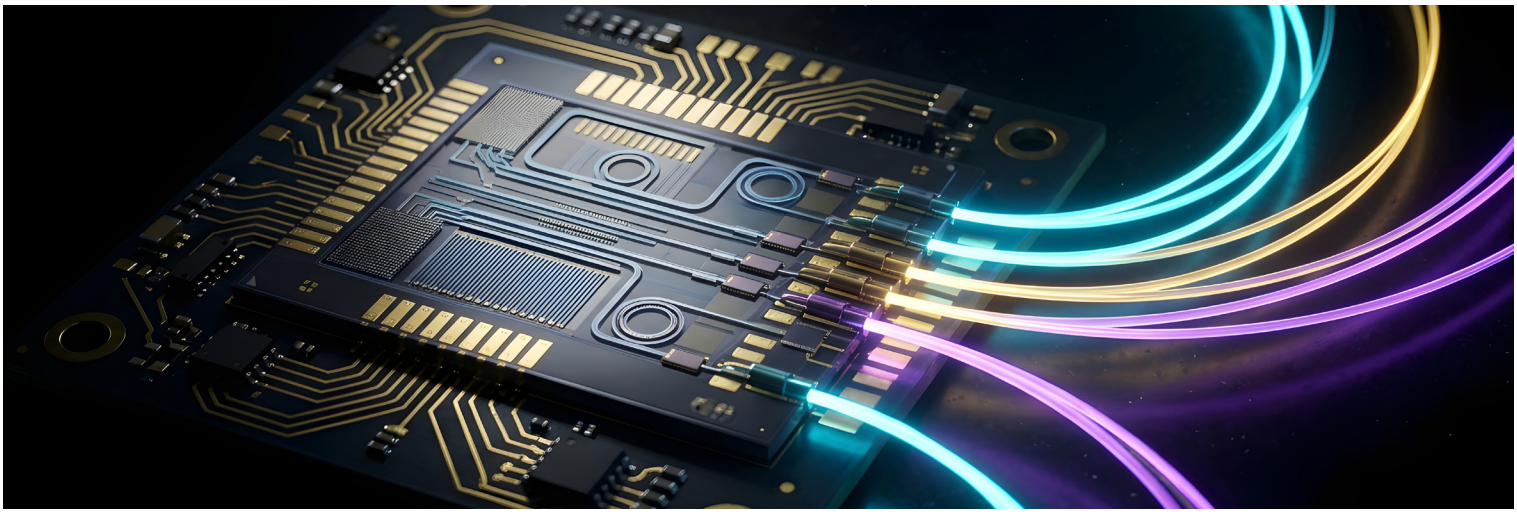
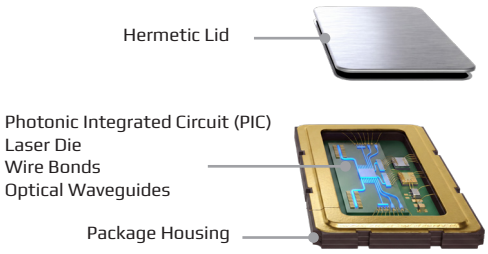
Hilpert electronics

Avio



PRECISION THAT PROTECTS - HERMETIC PACKAGING FOR SILICON PHOTONICS MODULES

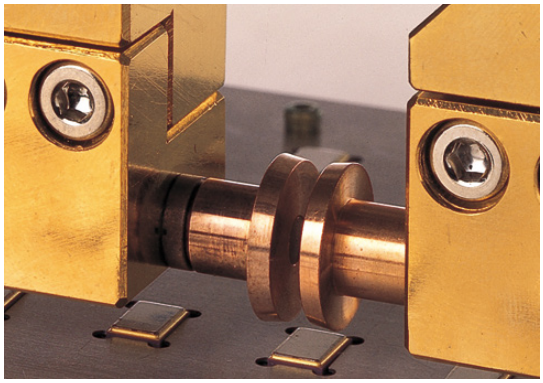


Why is Hermetic Packaging Essential for Silicon Photonics?

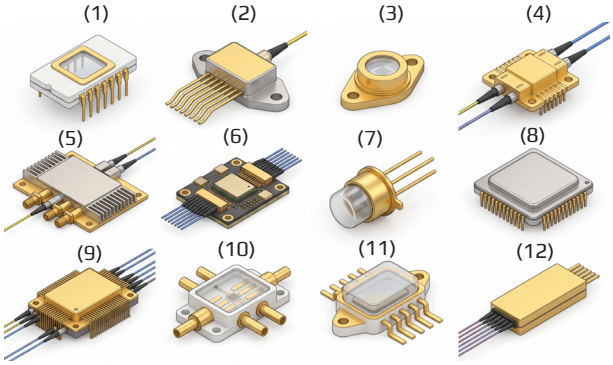
- Protection of sensitive lasers and photonic devices from environmental influences.
- Long-term preservation of optical alignment and signal integrity.
- Maximum hermeticity for data center, telecommunications and AI infrastructure applications.

WHAT IS PARALLEL SEAM SEALING?

- Parallel Seam Sealing is a process used to create a hermetic seal between a package lid and housing containing sensitive silicon photonics components such as lasers, photonic integrated circuits (PICs) and optical interfaces.
- The process is based on resistance welding technology: a metallic sealing ring is locally heated by electrical current, creating a continuous, airtight weld seam around the package perimeter.

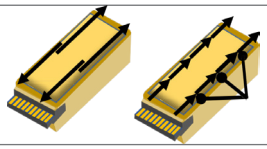


Various Package Types	
(1) Windowed Hermetic Ceramic Package	(7) TO-Can Laser Package
(2) Butterfly Laser Package	(8) Hermetic Ceramic LCC Package
(3) TO-Can Flanged Package	(9) High-Pin-Count Butterfly Package
(4) Optical Transceiver Package	(10) RF Photonics Package
(5) Cooled Optical Engine Package	(11) Windowed Ceramic Optical Package
(6) Photonic Integrated Circuit (PIC) Package	(12) Optical Transmitter / Receiver Package



AUTOMATED PARALLEL SEAM SEALING FOR HERMETIC SILICON PHOTONICS PACKAGING | AVIO NAW-6000 CE

TECHNICAL SPECIFICATIONS

Key Features	
Lid Size	2.0mm up to 150mm
Supported Lid Shapes	Flat LID, Cap LID, LID with optical Window
Supported Lid Thickness	Up to 0.3mm
Lid Placement Accuracy	+/- 0.035mm (25x25mm PKG)
Package Shape	Circular, Square, Polygonal
Process Speed	Process Speed: 5.5 s per package (5×5 mm package, two-sided sealing)
Various Lid Feeding Options	Lid Trays, Lid Cassettes, Parts Feeder, manual Lid Placement
Various Sealing Modes (e.g. Split Seam Sealing)	
Reduced Cycle Time (Improved Production Efficiency)	• Automatic Lid Placement Fully automated process from lid placement to hermetic sealing • High-Speed Seam Sealing Sealing speed up to 10 mm/s

YOUR SILICON PHOTONICS SOLUTION PARTNER

Combining leading technologies for the complete Silicon Photonics manufacturing process.

Avio	set	NAMICS	MPI CORPORATION
Hermetic Seam Sealing, Resistance Welding, Packaging Automation	Die Bonding, Flip Chip, Photonic Assembly	Underfill Materials, Conductive Adhesives, Encapsulation Materials	Wafer Probing, Silicon Photonics Testing, Automated Probe Systems

About Nippon Avionics Co., Ltd.

Since 1963, Nippon Avionics (Avio) has been developing resistance welding solutions, originally based on technology licensed from Hughes Aircraft (USA).
Since 1975, Avio has developed its own proprietary products and has played a significant role in advancing joining technologies for nearly 50 years. Today, Avio offers one of the industry's most comprehensive product portfolios, covering Resistance Welding, Pulse Heat, Ultrasonic Welding, Laser Welding, and High-Frequency Induction technologies.
Avio solutions are widely used in electronics manufacturing, automotive, battery production, smartphones, electric motors, semiconductor packaging, and many other advanced industrial applications worldwide.

About Hilpert electronics AG:
For more than 30 years, Hilpert electronics AG has been the trusted AVIO partner in the DACH region. With dedicated local service engineers, extensive application expertise, and comprehensive process know-how, Hilpert supports customers throughout the entire project lifecycle, from feasibility studies and process development to installation, training, maintenance, and technical support.

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