



## MEMS to Market, Faster™

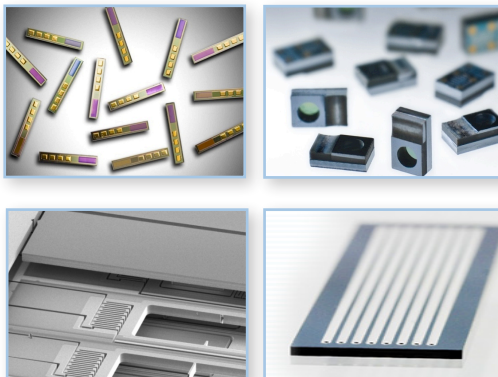
As the world's largest pure-play MEMS foundry, Silex Microsystems partners with the world's most innovative companies to commercialize their MEMS designs, driving the sensory system revolution that is changing the world.



## A Well Established Pure-Play MEMS Foundry Strategy

Since our founding in 2000, Silex has been faithful to the pure-play foundry business model. While other foundries have drifted into offering their own MEMS product platforms and competing with their fabless customers, our sole focus continues to be able to provide the most robust, flexible manufacturing services for the world's most innovative companies. Our success at applying this dedicated approach has made Silex one of the world's most well-known and respected MEMS foundry companies.

Accelerometers  
Gyros  
Pressure Sensors  
Cantilevers  
Touch Membranes  
Flow Sensors  
Humidity Sensors  
Filter Structures  
CMOS Interposers  
Needles  
uBatteries  
RF Switches



IR Sensors  
Microfluidics  
Micro Sieves  
Microphones  
Lab-on-Chips  
Print Heads  
Drug Delivery Devices  
Mirrors  
Optical Benches  
Optical Accels  
Resonators  
Oscillators

## A Highly Experienced MEMS Engineering Team

At Silex, we've commercialized hundreds of MEMS products for a wide variety of markets and customers around the globe. To complement our continued focus on MEMS foundry business, we now also offer related services such as Wafer Level Packaging (WLP) and Interposer manufacturing. Working with Silex you gain access to the core competence of putting together robust MEMS process flows, backed by the confidence stemming from long term success.

## Proven, High-Volume 6" and 8" Fabs

Silex operates two independent fab facilities on 6 inch and 8 inch wafers, respectively. These ISO certified fabs provide customers with not only access to rapid prototyping but also a well proven strategic plan to volume manufacturing. Our 6" fab has been operating in volume since 2004 with a current capacity of 400,000 litho moves per year and the 8" fab, established in 2009, adds another 500,000 litho moves to our overall capability.

## Suite of Innovative MEMS Technologies

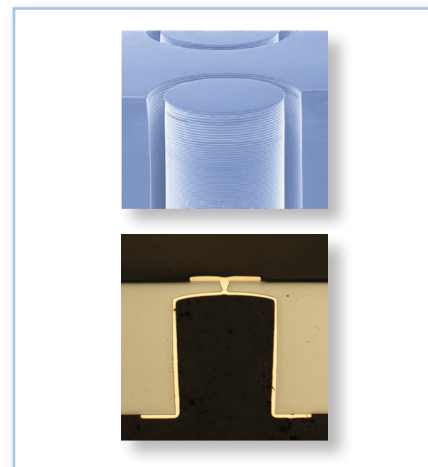
Silex's pure-play foundry focus on MEMS keeps us at the cutting edge of technology development for advanced and robust processing capabilities, including Sil-Via® all-silicon TSV, and Met-Via® metal TSV. We have processed well over 50,000 wafers with integrated TSV solutions to give our customers a competitive advantage in the market. Our Sil-Via is recognized as the world's most established via solution in high volume production since 2004. With our more recently developed Met-Via solution and other via modules in use by our customers, we now offer robust solutions for RF and other high performance applications.

In addition, technologies such as our Met-Cap® and Sil-Cap® solutions allow for hermetic capping with TSV and controlled atmosphere with high vacuum options. Our TSI™ Vertical SOI Substrate Isolation technology has been in continuous production since 2007 and is also integrated into numerous customer designs.

All of Silex's technologies leverage our SmartBlock™ approach, which is the Silex "Modular Standardization" methodology which we use to enable the fastest possible way to stable production processes without compromising on our ability to offer continuous innovations in new MEMS manufacturing capabilities.

### Services offered by Silex include:

- Process Template based set-up of customer designs
- SmartBlock based set-up of customer processes with increased innovation flexibility
- Set-up of fully customized process flows
- Wafer Level Packaging (WLP) services
- MEMS post processing of CMOS wafers
- Manufacturing of 2.5D Interposers with or without integrated passives

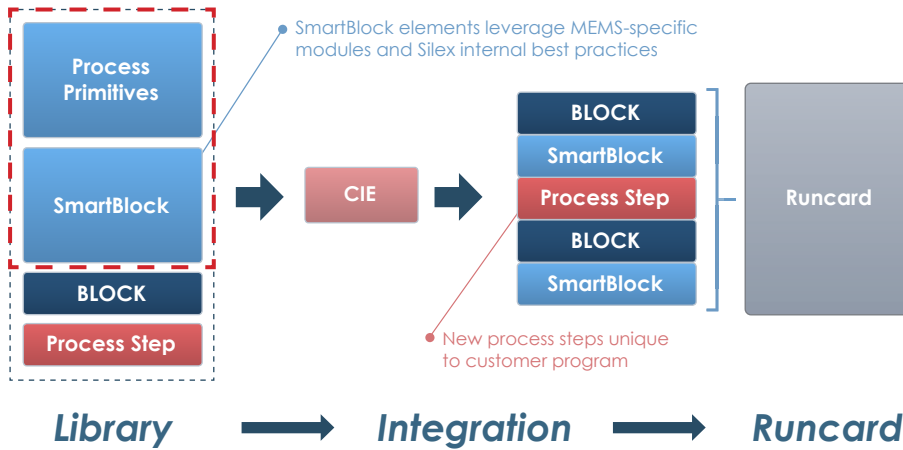


Sil-Via and Met-Via TSVs

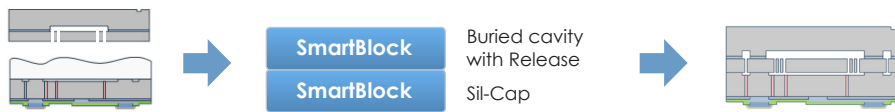
## The SmartBlock™ Approach to Process Integration

Providing world-class MEMS process integration and volume manufacturing across many products simultaneously requires a unique approach to standardization and best practices. At Silex this methodology is embodied in our SmartBlock approach, which uses proven process blocks, i.e. SmartBlock elements, to build robustness into the various MEMS processes being manufactured in the same production environment.

By enabling "Modular Standardization" of MEMS process integration based on our long history of successful MEMS prototyping and production, the SmartBlock approach allows for fast prototyping, customization and rapid ramp up without sacrificing process consistency.



The result is a robust MEMS process adapted to customer design and requirements while leveraging the production-proven experiences of Silex.

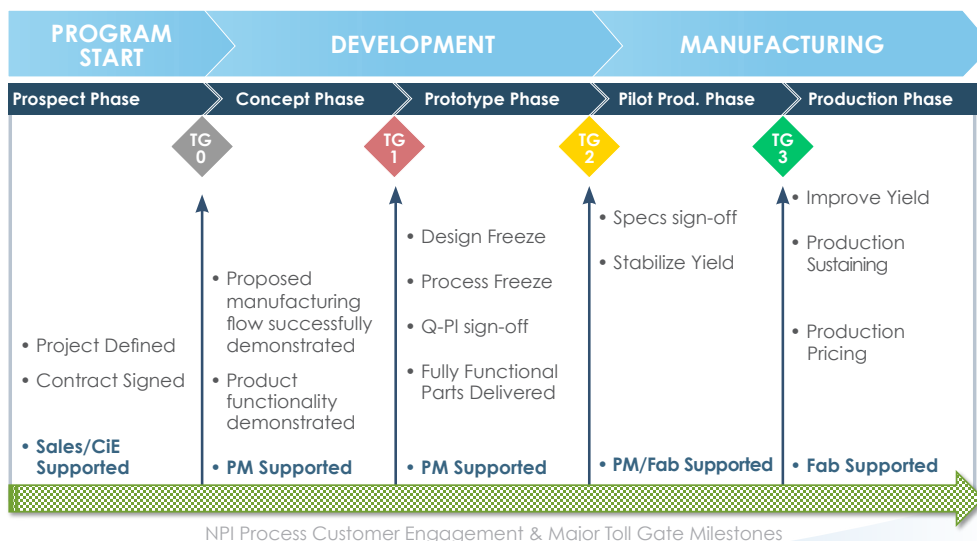


## Silex's New Product Introduction Process: Taking MEMS to Market, Faster™

To help the world's most innovative companies take their MEMS to market faster Silex has devised a New Product Integration (NPI) Process that provides a predictable, reliable and data driven path to high yielding volume production. The process combines know-how developed internally at Silex with employee's extensive experiences from CMOS as well as MEMS manufacturing at world leading vertically integrated companies.

### Benefits of Working with Silex's NPI Process

- Alignment of expectations and risks in process integration and product development phases
- An engineering-driven approach to the complexities of MEMS manufacturing
- Data-driven development leads to lower overall costs in the long run
- Meets customer needs for prototypes and sampling and Silex's needs for controlled production
- Ensures agreed upon acceptance criteria adapted for volume manufacturing
- Allows for improved product planning
- Recognizes the "progressive risk management" of MEMS development and the market needs of our customers



**We enable our customers to commercialize products and ramp them to high volume quickly, reliably and cost effectively. We are Silex:**

- ✓ **The World's largest pure-play MEMS foundry**
- ✓ **Providing processing solutions for Innovative MEMS designs**
  - Experience drawn from hundreds of MEMS programs
  - Custom and standardized processes
- ✓ **Delivering proven high volume capabilities**
  - Volume production 6" and 8" lines
  - Demonstrated ability to ramp and deliver
- ✓ **Utilizing well defined roadmap from prototype to volume production**
  - Silex NPI Process for robust process development and qualification
- ✓ **Enabling fast prototyping for quick process & design validation**
  - SmartBlock™ based "Modular Standardization"
  - Highly flexible manufacturing strategy
- ✓ **Offering a suite of proven technologies for MEMS innovators**
  - Sil-Via®: the world's first through-wafer-via in high volume production
  - Met-Via® metal vias for RF and TMV applications
  - Other via modules available
- ✓ **Providing volume commercial support for the latest MEMS materials**
  - PZT and other innovative materials available



## Contact Us

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