



PHOTOFABRICATION ENGINEERING INC  
Enabling new technologies

# STRENGTHS & ADVANTAGES



- US based production (Milford, MA)
- 47+ Years in business
- Small business classified





## STRENGTHS & ADVANTAGES

ROBERT ASHMAN

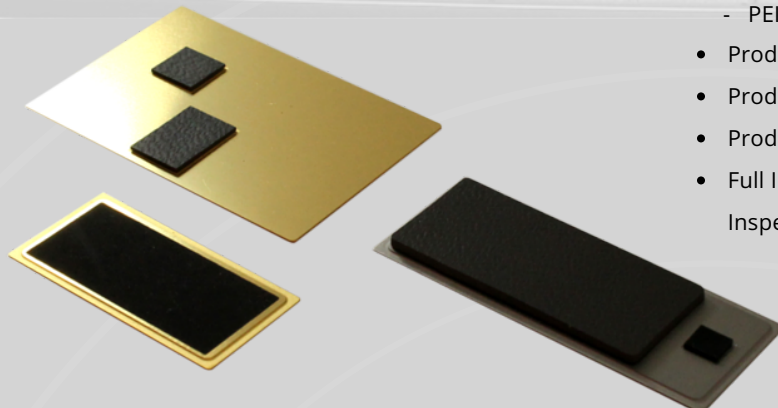
**National Sales  
Manager - Precision  
Products**

**“PEI is proud of its capabilities, its technologies and team. We continually add new resources as we grow. Please don’t hesitate to reach out to see if we can support your specific requirements! The following information outlines our current strengths and advantages...”**

### CAPABILITIES >

## EXPLORING THE CAPTIVE PROCESS

- Chemical Etching of most sheet metals (Aluminum to Zinc)
- Specialize in Kovar, Stainless Steel, Brass, Copper, Aluminum & Titanium
- Burr-free process with “drop-out” etch capabilities for tabless designs as well
- Large scale etching capabilities. Sizes up to...
  - 28” [711.2MM] x 58” [1473.2MM]
  - 18” [457.2MM] X 120” [3048.0MM]
- Metal Thicknesses up to .125” [3.18MM]
- Automatic regeneration of our etch chemistries
  - Eliminates any loss in active potency
  - Ensures consistent etch results from the first to last piece
- Clean room to control FOD at critical image transfer process
- Photo-artwork fabrication
- Screen printing capabilities (part marking)
- Separate Microelectronic Lid cell to ensure highest quality
- Electroless Plating (for Kovar lids only!)
  - Eliminates cross-contaminants from other materials
  - Ensures highest yields at critical lid closure process
- Hydrogen/Moisture Getter and RF Absorber attachment capabilities
  - Partners include Alpha Materials (Cookson), SAES & Vacuum Energy
  - PEI can epoxy attach or screen print where applicable
- Product forming
- Product passivation
- Product assembly services
- Full Inspection capabilities (AS9102 First Article Inspection Reporting when required)



### PRODUCTS >

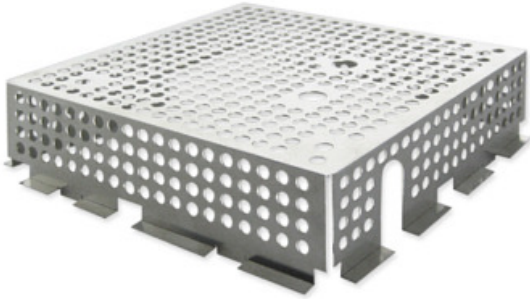
## TYPICALLY SUPPORTED

- Microelectronic Lids
  - Stepped, Flat & Window
  - With Hydrogen/Moisture Getters & RF Absorbers
- Carrier Plates (Heat Spreaders)
- EMI/RF Shielding
- Heating elements
- Shims
- Micro-turbine blades/components
- Lead Frames
- Weld/Ring Frames
- Mesh Screens
- Micro-fluidic plates
- Heat Exchanger plates
- Washers
- Electrical Contacts, Springs, Jumpers
- Solder Masks
- Encoder Disks
- Microwave Stators
- Metal Fixturing jigs and carriers

## ADDITIONAL SERVICES >

### PARTNERED "VALUE ADD" SERVICES

- Plating (All types...Au, Sn, Ni, etc.)
- Anodizing
- Heat Treating
- Coating (Powder, Spray, Epoxy, etc.)
- Forming (Complex geometries)
- Post Machining (Countersinking, Tapping and tighter tolerance requirements)
- Part Marking (Laser, Bar & QR Coding, Serializing, etc.)
- Packaging (Tape & Reel, Waffle, Medical, etc.)
- Soldering & Brazing
- Testing (Salt & Moisture, Solderability, Thermal Shock, etc.)



## CAPACITIES >

### PREPARED TO SERVE

- Currently operating at approximately 75% capacity of our first shift
- Adding new equipment regularly
  - Maintain state of the art
  - Ensure open capacity



## DELIVERIES >

### ATTENTION TO SCHEDULE

- Most deliveries can be achieved in 4 weeks or less
  - Opportunities which require outside services may effect this
- Quick turn prototyping as needed (2 weeks or less!) for a slight premium
- On-time performance metrics of 98% or better
  - You can't achieve this metric without equal quality!

EQUIPMENT >

STATE OF THE ART FACILITY

- (5) Double Chamber 30" Ferric Chloride Etchers
- (1) 4 Chamber Ti Constructed Cupric Chloride Etcher
- (2) Double Chamber Cupric Chloride Etchers
- (2) Ferric Nitrate Etchers for Molybdenum & Silver
- (2) Double Chamber Titanium etchers
- (5) UV Imaging Machines
- Electroless Plating line (Dedicated for microelectronic lids)
- Photo laser plotter for artwork creation

MATERIALS >

DFAR COMPLIANT ONLY!

- Stainless Steel
- Aluminum
- Molybdenum
- Kovar (ASTM F-15 Alloy)
- Phosphor Bronze (510)
- Cold Rolled Steel
- Titanium
- BeCu
- Tungsten
- Copper (& Alloys of)
- Silver (& Alloys of)
- Inconel/Monel
- Brass
- Nickel (& Alloys of)



**"Looking forward to supporting your business!"**

**ROBERT ASHMAN**  
**National Sales Manager**  
**- Precision Products**