

CPS Technologies Corporation Product Gallery

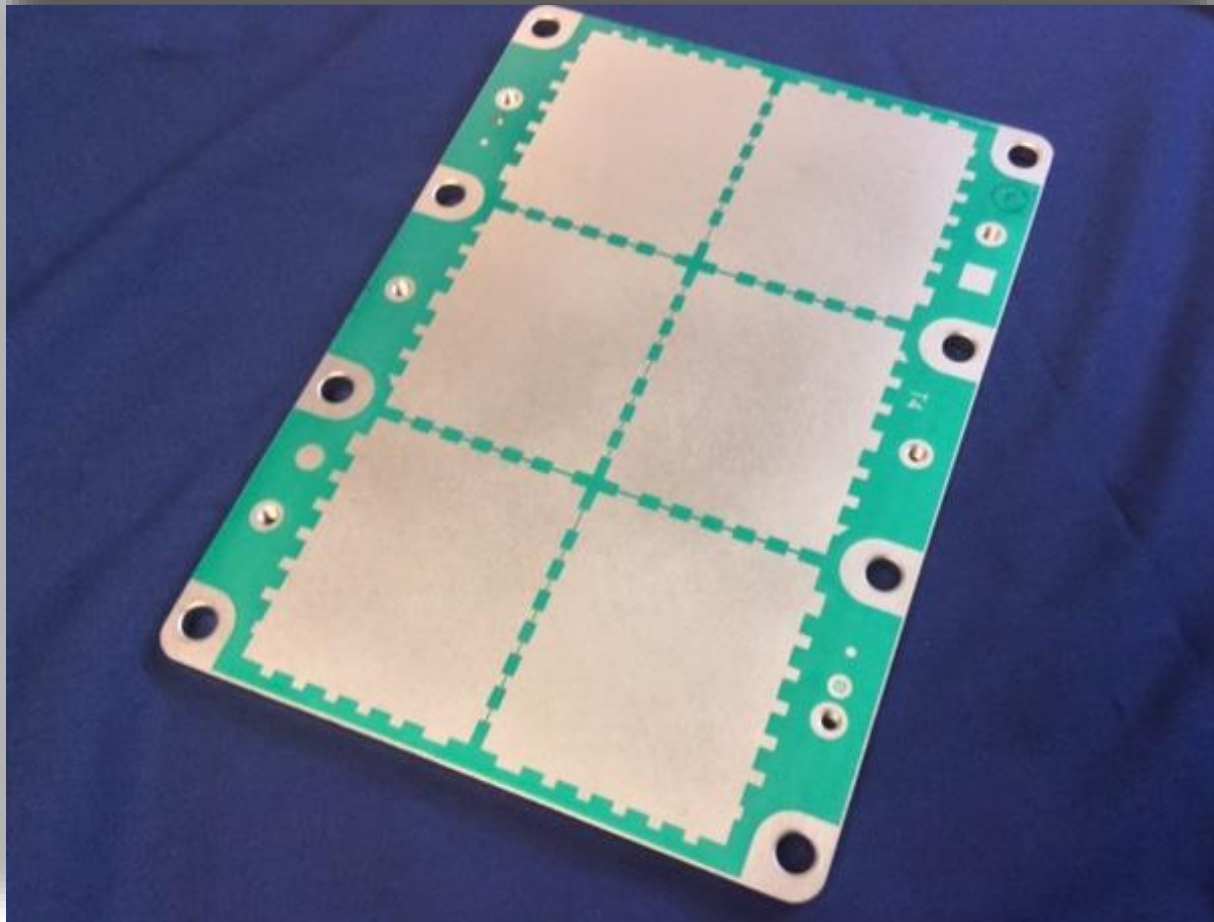


CPS Technologies
Norton Massachusetts
www.alsic.com

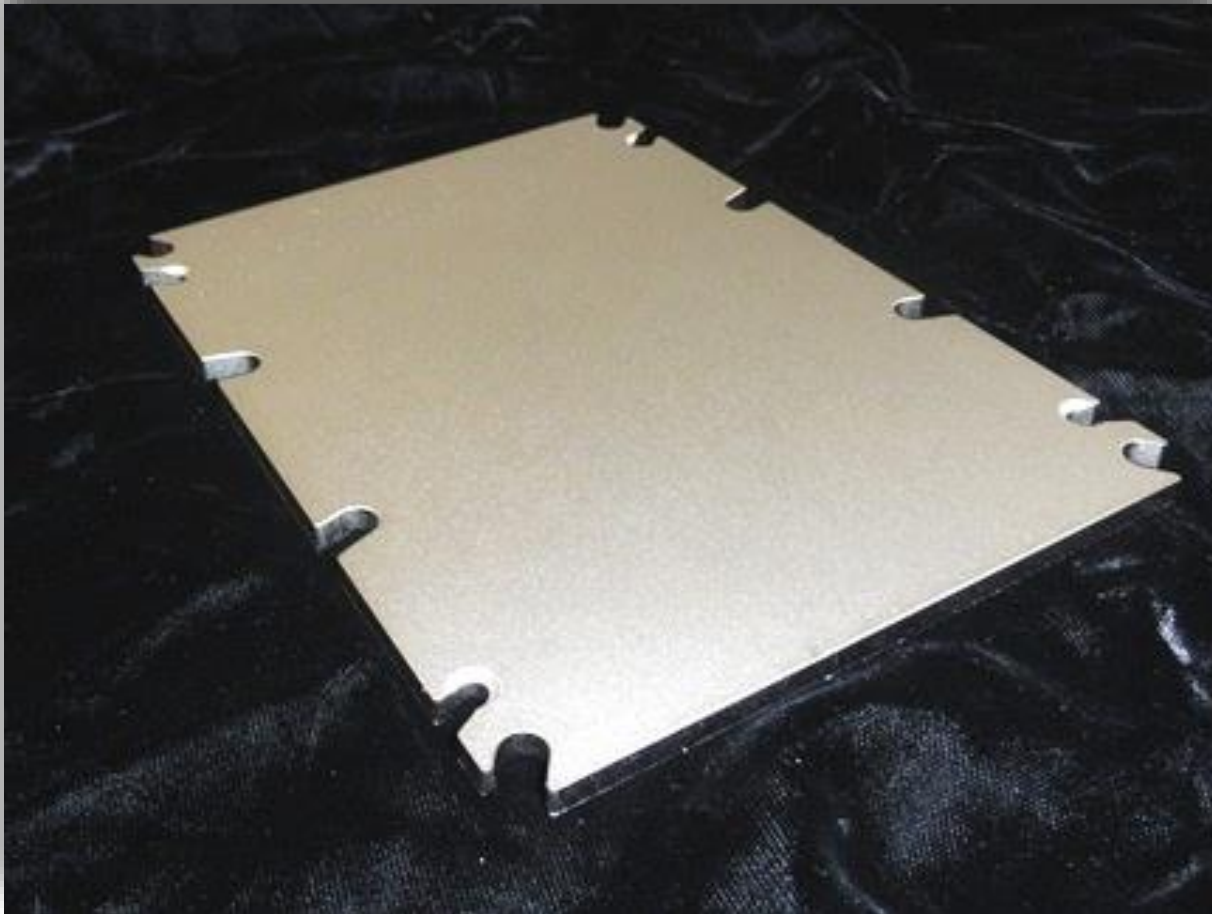
Presentation by
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Baseplate



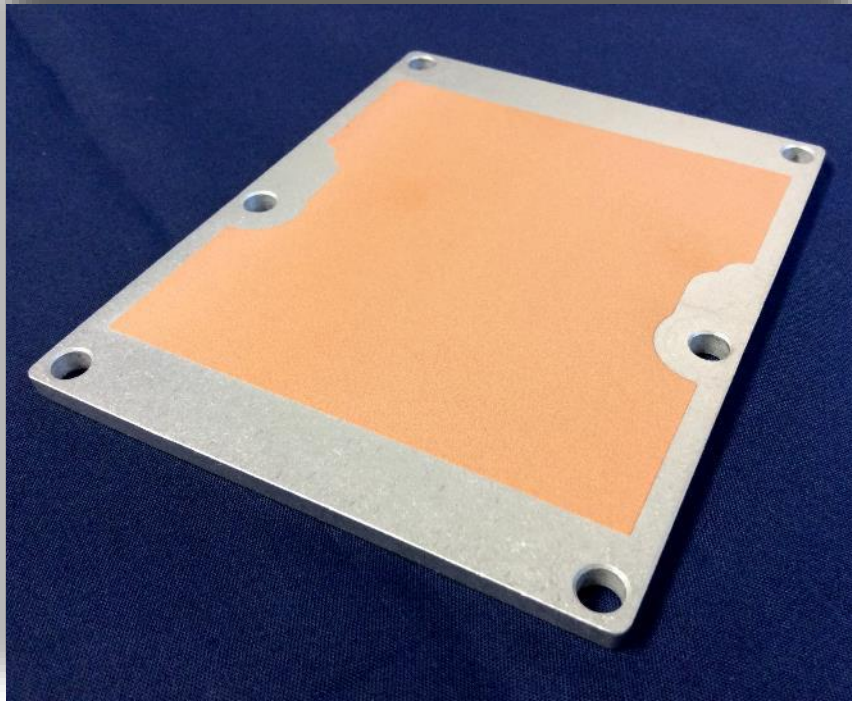
Slotted Baseplate



Slotted no machining operations for a lower cost solution

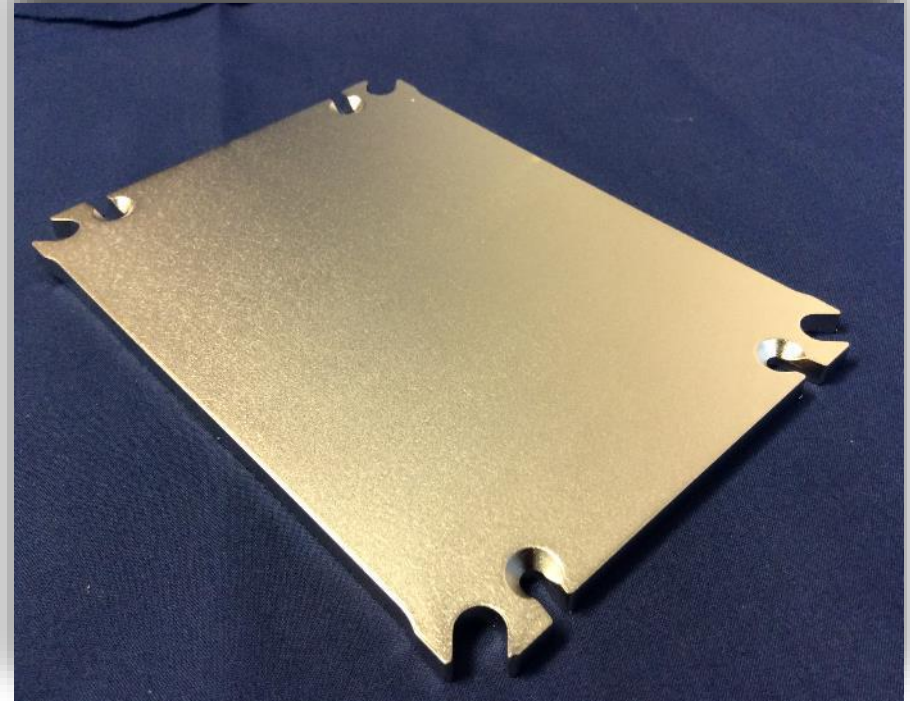
Solderable Surface Treatments

Copper Cold Gas Spray



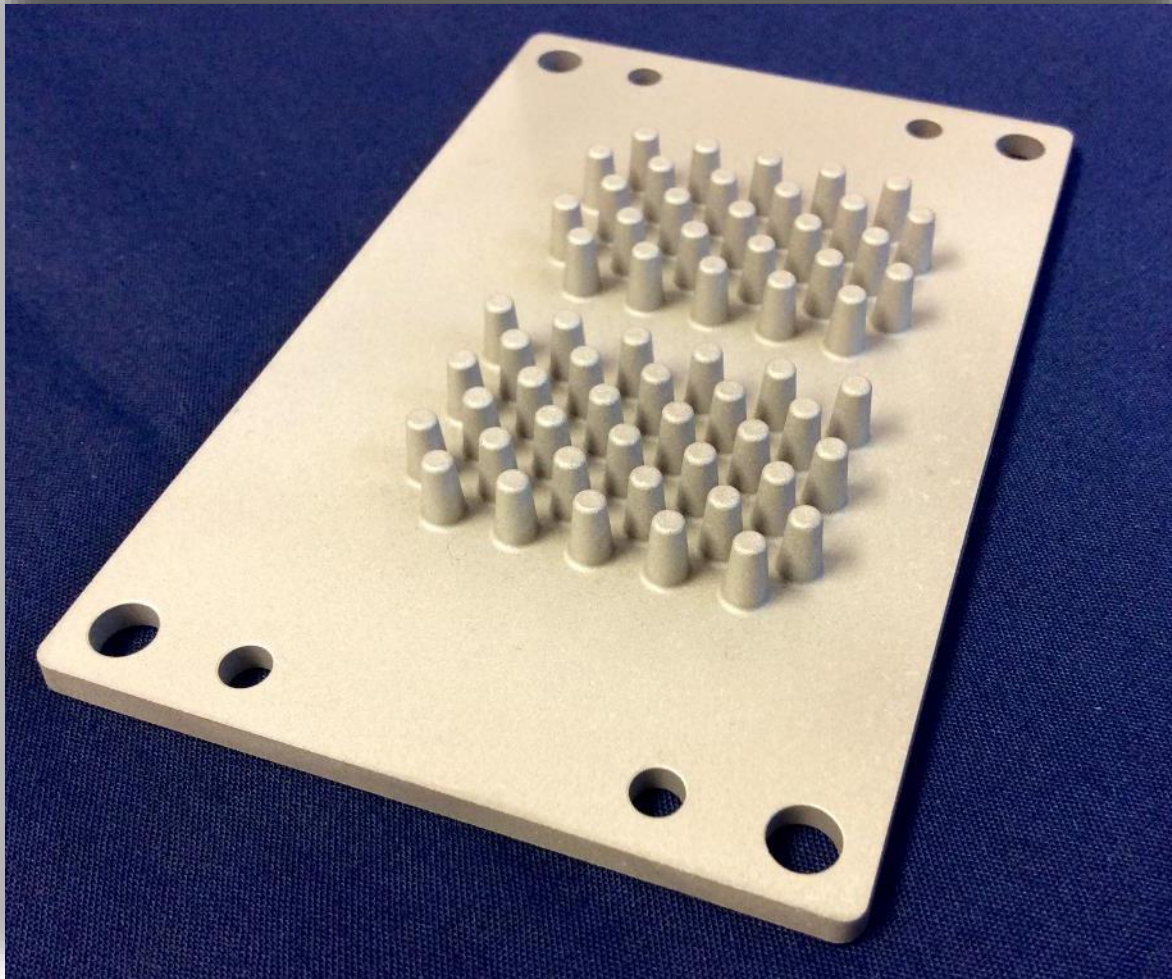
Standard Drilled

Ni Plated



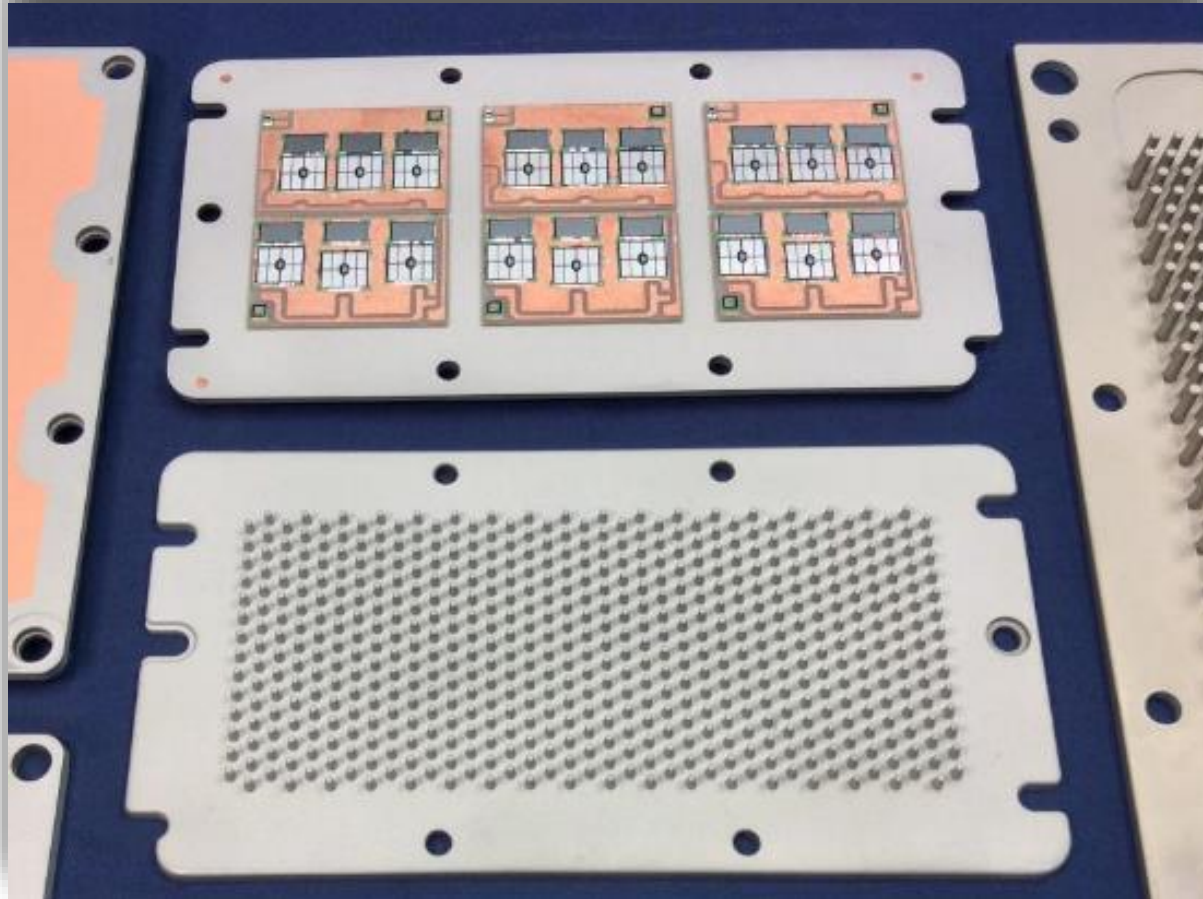
Lower Cost Slotted
w/counter sinks

HEV and EV Coolers



AlSiC pins are cast on the surface of an AlSiC baseplate to extend cooling surfaces into a cooling medium for power modules used in electric and hybrid electric vehicles

Coolers for HEV and EV Applications



Power electronics are soldered to the flat surface of the pin fin cooler. The thickness of the base can be as thin as 3 mm. Pin length of 4 – 6 mm are typical for these cooling applications. Copper Cold Gas Spray is suggested for automotive cooler modules for a solderable surface.

Copper Cold Gas Spray Solderable Surfaces



Copper Cold Gas Spray

Robust solderable surface

Less sensitive to oxidation as compared to Ni-plating

Applied only in the area of need

Provides a "solder stop" since the solder wets only the copper sprayed area

***CPS has produced over 700 k Automotive Coolers with
Copper Cold Gas Spray since 2012***



100 μ m Copper Cold Gas Spray

100 μ m Aluminum Skin

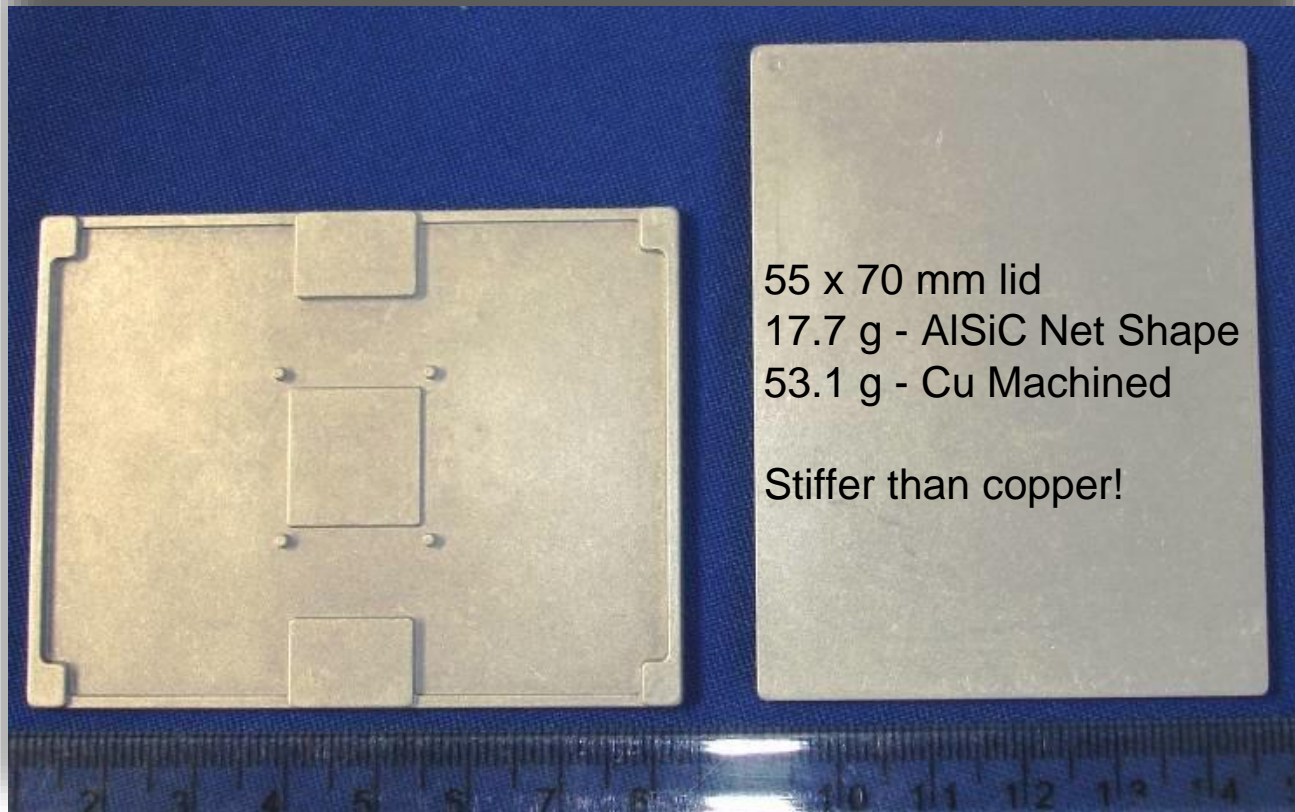
AISIC Composite

AlSiC Flip Chip Lids



Complex design can be incorporated to assist in alignment

AlSiC Flip Chip Lids



It is possible to design AlSiC Flip Chip lids with large area that are lightweight and have high stiffness, that minimize bond line thickness, with device compatible thermal expansion values.

AlSiC Microprocessor Lids

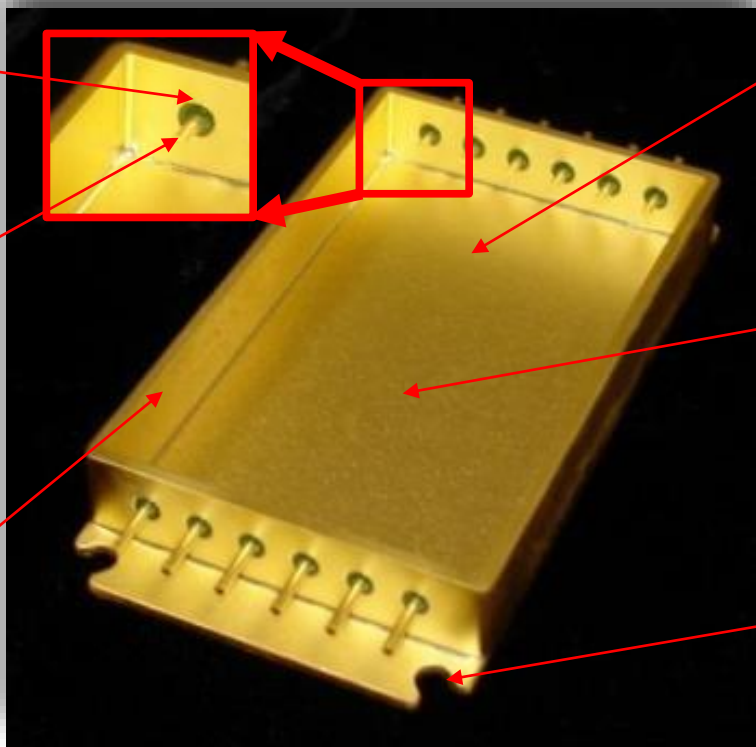


AlSiC For Optical Applications





AlSiC Hermetic Packages



Matched Glass
Sealed
Feedthru

Kovar ASTM F-
15 Leads for
Matched Glass
Seal

Low CTE Alloy
48 seal ring
Electrolytic Ni
followed with Au

Lightweight
Low CTE
AlSiC Base

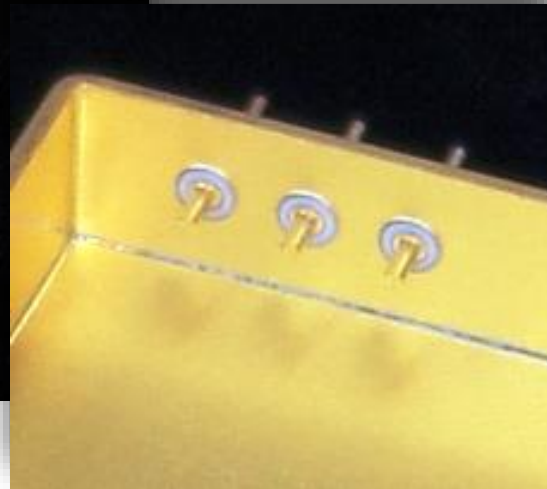
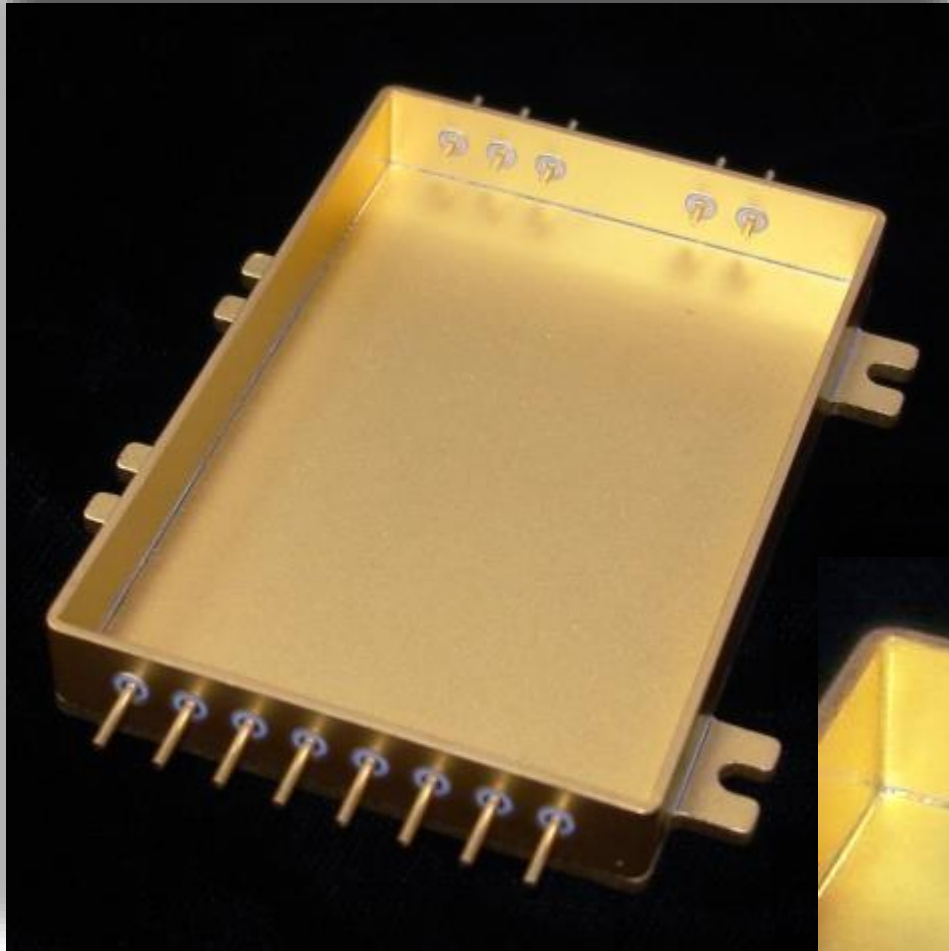
Au-Sn Solder

Electroless Ni
followed with
Au Plating
Schemes

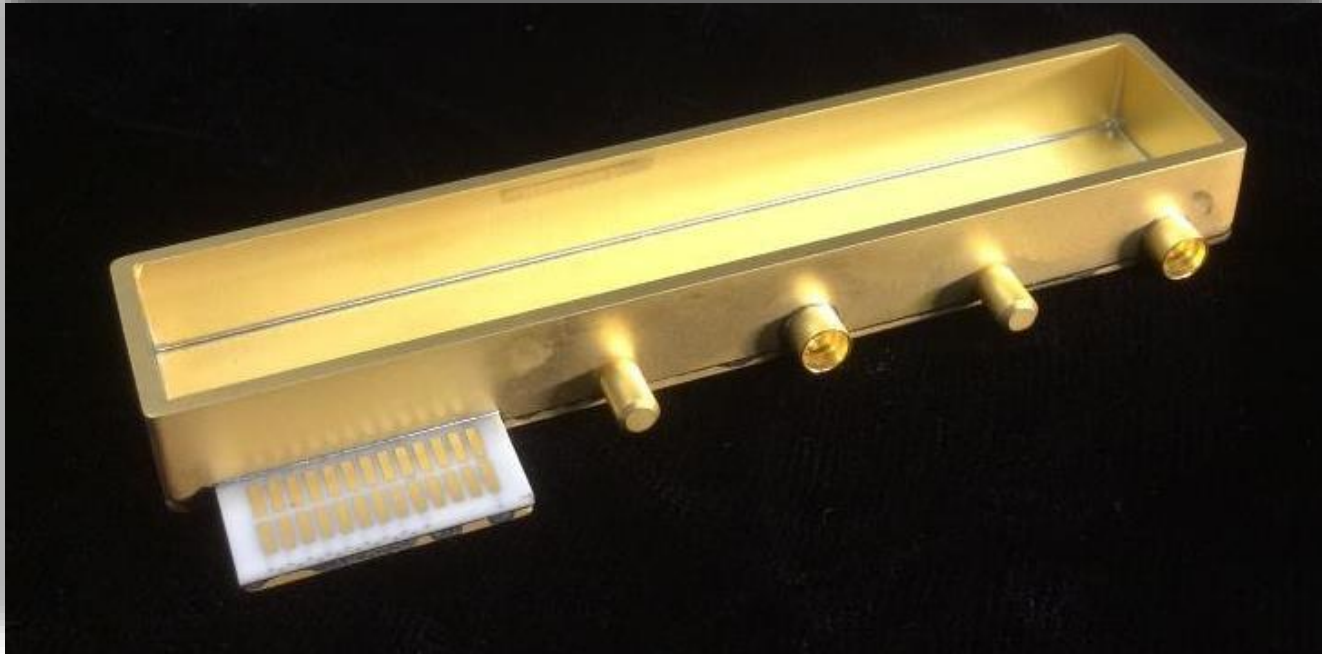
Feature
requires no
machining!



AlSiC Hermetic Package



AlSiC Hermetic Package



All AlSiC Hermetic Package

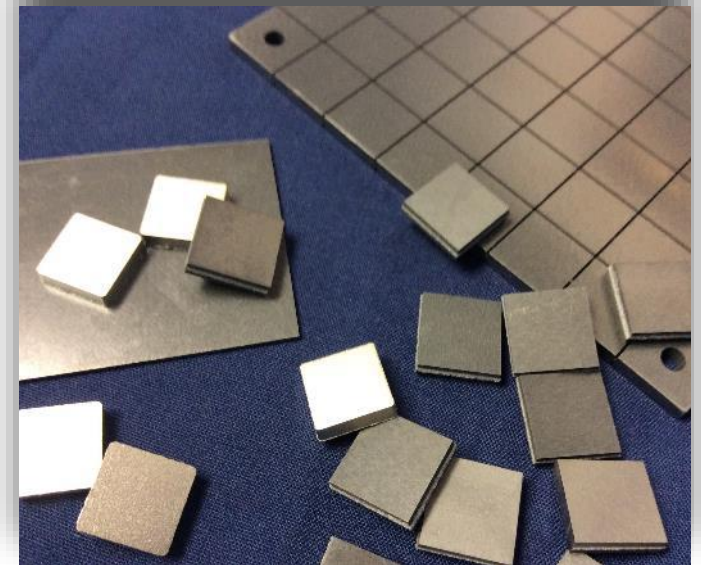


AlSiC Hermetic Package



Developed a process for grinding, dicing, and plating thin spacers and flanges.

- Thickness of 0.15 mm demonstrated
- Hermetic and dense
- No Al metal skin
- Tolerance of ± 0.05 mm or better!



CPS Technologies Norton MA Campus manufacturing and headquarters

