



## Glass to Metal Seals for High Reliability Microelectronic Packaging

- Military and Aerospace Applications
- Hermetic Sealed Housings
- Commercial Applications

## Housing Formats

- Power Headers
- AlSiC Hermetic Packages
- Machined Modules
- Plug in Packages
- Flat Packs
- TO-5 and TO-8
- TO-3 and TO-66
- Lids & Covers

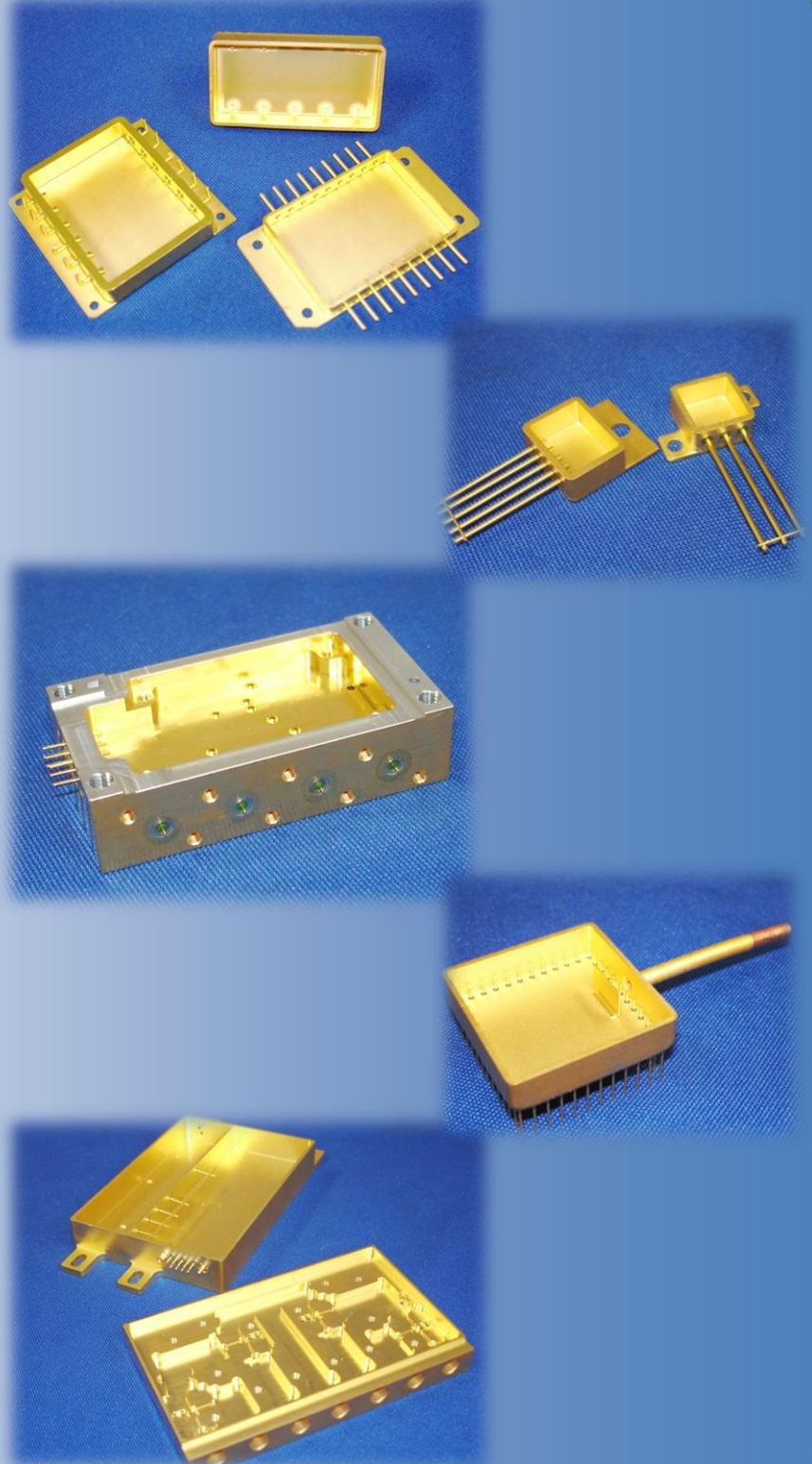
## Housing Materials

- AlSiC base with 48 alloy frame
- ASTM F-15 Kovar
- Cold Rolled Steel
- Stainless Steel
- Alloy 52
- Copper Cored Alloy 52
- Molybdenum
- Aluminum
- Copper, CuMo, CuW

## Hermetic Seals

- Thermal Expansion Matched Seal
- Borosilicate
- Compression Seals
- Ceramic feedthrus

CPS matched seals are produced by the "Two Step Sealing Process" for the most robust hermetic seal.





# Conventional Hermetic Packaging



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## **CPS Certified to ISO 9001:2015 Standard**

CPS provides quality assurance testing to MIL-STD 883 and MIL-STD 202; CPS is compliant to DFARS clause 252.225-7014 ALT.1, RoHS and REACH.

## **CPS Matched Hermetic Seals**

CPS matched seals are produced by the “Two Step Sealing Process” for the most robust hermetic seal.

## **CPS Plating Capabilities**

- Electroless Nickel per MIL-C-26074, ASTM B-733 & AMS 2404
- Electrolytic Nickel per QQ-N-290 and ASTM B-689
- Gold per ASTM B-488 and MIL -DTL-45204
- Chromate per MIL-DTL-5541

## **CPS Test Capabilities**

- Air to Air temperature cycle/shock per MIL-STD-883, method 1010
- Steam age/solderability testing per MIL-STD-883, method 2003
- Liquid to Liquid per MIL-STD-883, method 1011
- Lead Fatigue per MIL-STD-883, method 2004
- Hermeticity validation to  $1 \times 10^{-10}$  cc/sec of helium per MIL-STD-883, method 1014, condition A4
- Insulation resistance to 10 GΩ at 500 VDC per MIL-STD-883, method 1003
- Salt spray per MIL-STD-883, method 1009
- Compliance to JEDEC Std. 9 and MIL-STD-883

DUNS # 12-099-8661

CAGE Code 46613

Registered with the U.S Dept. of State Trade Directorate of Defense (ITAR)

## AlSiC Hermetic Packaging Advantages

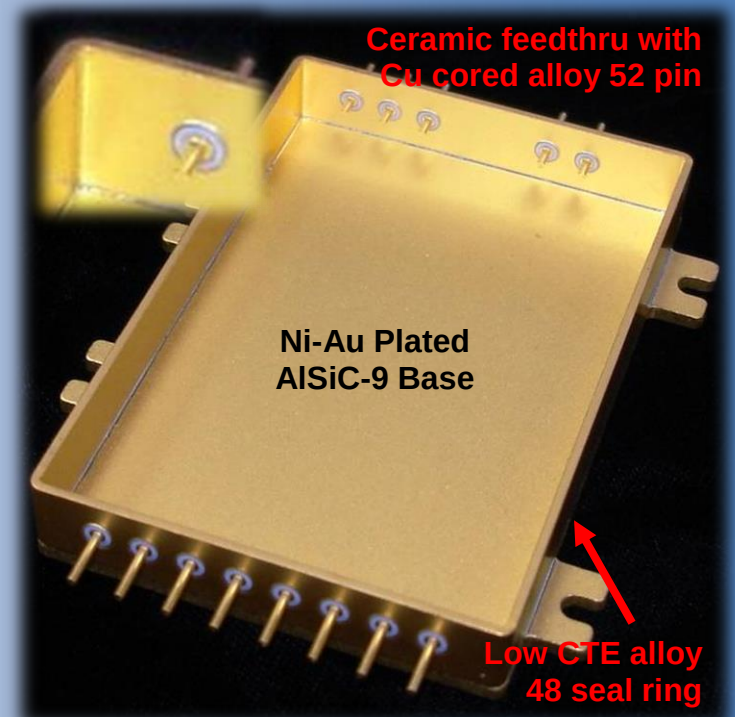
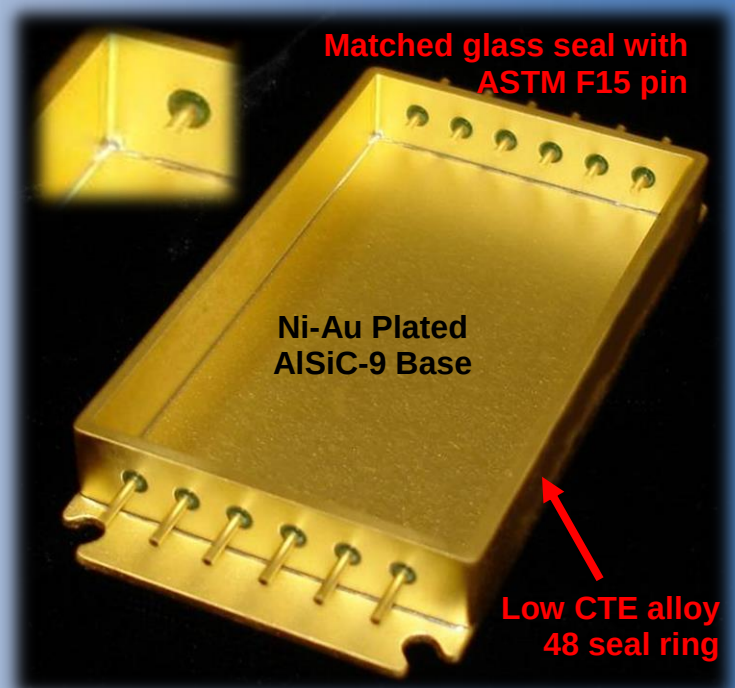
- 40 – 60% lighter weight than CuMo and CuW
- Lower cost than CuMo and CuW
- Thermal expansion matching for direct attachment of GaAs and substrates
- High thermal conductivity
  - AlSiC-9: 180 W/mK minimum
- Readily available material
  - Standard and non-standard base thicknesses
  - Complex shapes without machining
- Meets MIL-PRF-38534, Appendix C, Table-VI

## Applications

- Military, aerospace and communications applications
- Systems subject to shock and vibration
- Weight sensitive applications

## Hermetic Seals

- Thermal expansion matched seal
  - CPS matched seals are produced by the “Two Step Sealing Process” for the most robust hermetic seal
- Brazed ceramic feedthrus for high power applications







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