



solution gallery 600  
Ceramax The best  
hermetic sealing  
material

## **CERAMAX<sup>®</sup> - INCOMPARABLE HERMETIC PERFORMANCE**

### **PROVIDING A HERMETIC SEAL THROUGH THE LIFE OF YOUR PRODUCT**

CERAMAX<sup>®</sup> is a dispersion-strengthened, devitrifying, polycrystalline ceramic compound proprietary to SRI Hermetics Inc.



Devitrifying CERAMAX<sup>®</sup> compounds are very stable crystalline materials that offer performance beyond the capabilities of conventional glass seals. These ceramic compounds have properties that enable them to be reheated to a very high temperature without showing any flow or loss of seal integrity. The CERAMAX<sup>®</sup>-to-metal seal is accomplished by active chemical bonding of the CERAMAX<sup>®</sup> compound to an oxide formed on the pin and case surfaces. Our products, using the CERAMAX<sup>®</sup> seal, have incomparable performance in applications around the world.

### **SUPERIOR ELECTRICAL AND MECHANICAL PERFORMANCE**

The CERAMAX<sup>®</sup> family has been formulated to seal a wide range of materials, including stainless steel, titanium, nickel-iron alloys, Inconel<sup>®</sup> and copper alloys. Our direct sealing to copper alloy pins allows for much greater electrical current carrying capability than conventional glass seal technology. For example, a standard .018 diameter copper alloy contact can carry up to 10 amps. Our hermetic seals meet the requirements of MIL-STD-883 for hermeticity ( $\leq 1 \times 10^{-9}$  cc/sec He at one atmosphere  $\Delta P$ ), insulation resistance (>5,000 megohms at 500VDC) and dielectric withstanding voltage (no breakdown at 100VAC/mil CERAMAX<sup>®</sup>) – even in nanominiature designs. Electrical breakdown always occurs in the air across the CERAMAX<sup>®</sup> surface – never within the CERAMAX<sup>®</sup> itself. CERAMAX<sup>®</sup> is chemically resistant to all chemicals typically used in the hermetic packaging and electronic systems integration industries. Although the non-amorphous CERAMAX<sup>®</sup> structure is not ideal for high frequency RF applications, the material is well suited for high stress, DC applications. CERAMAX<sup>®</sup> can typically be relied on to operate in a temperature range of  $-269^{\circ}$  to  $+450^{\circ}$ C.

### **THE SUPERIOR TECHNOLOGY FOR YOUR APPLICATION**

CERAMAX<sup>®</sup> has been used to provide superior hermetic performance in many applications.

- High-performance multi-pin electrical connectors for aerospace and defense
- Hermetic bulkhead feedthroughs for the harsh conditions of oil exploration
- Fiber optic feedthroughs for high-speed signal transmission
- Thermal battery headers with high-conductivity pins
- Feedthroughs for transducers such as accelerometers and thermocouples
- Cryogenic applications such as thermal weapon sight

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