

Hermetic Packages

Introduction

Sivers IMA has 40 years experience in developing and manufacturing microwave components and subsystems technology with different techniques. The major part of the products from Sivers IMA is hermetically sealed. Our manufacturing is conducted in a clean room facility class 10 000. The manufacturing encompasses the complete chain of equipment and processes in order to secure hermetic sealing with high quality. We are also ISO 9001 certified.

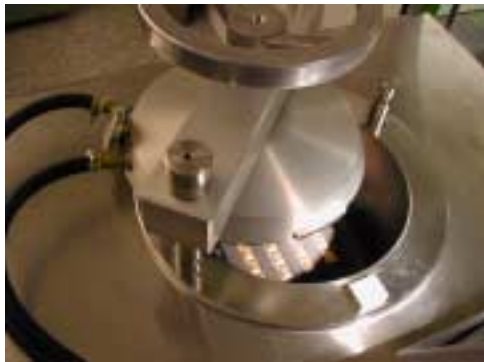
We offer a wide variety of ceramic and metal can packages for through-hole and surface mount applications. The packaging can be equipped with connectors for frequencies up to 50 GHz. These ceramic and metal can packages are offered as solutions for high reliability and high performance applications, and are extensively used in military, aerospace and commercial applications. By design a hermetic seal prevent gases and liquids from entering the package cavity were the components are mounted. This provide a high level of safety for instance in an environment with highly explosive gases. Because of the package materials, hermetic packages are able to withstand higher temperatures than the equivalent plastic packages.

Our packaging can be divided in two major categories, described below. The packaging can be conducted with standard packages or to be tailored for specific customer requests. If our customer desire gold plated packaging this will be carried out by an electrolytic process.

When the packaging has been conducted advanced leak detection take place. Electrical tuning tests and programming can be carried out through the entire process.

Hermetic void-free soldering

By using a vacuum pressure furnace we can provide high reliability micro electronic package assembly. With this sealing method we provide void-free solder joints without use of flux.



Hermetic soldering in vacuum furnace



Hermetic soldered packages

December 05,2003

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Seam welding

The seam welding is performed in a controlled environment, for instance Nitrogen. Before the welding take place a dry environment is obtained by placing the unit in a tempered vacuum chamber. This packaging method is used when the components are high temperature sensitive.



Seam welding



Subsystem before seam welding

Leak detection

The leak detection will be conducted in two steps.

First the package is placed in a bubble tester where it is placed in a liquid meeting the MIL-STD-883 requirements. By doing this the quality of the joints are secured.

In the second step both the welding, the proof ness of material and feed thru are tested. This is done by placing the package in a Helium pressurized environment. Then the package is placed in a vacuum chamber for detecting of Helium atoms, according to the MIL-STD-883 standard.

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