



Micro Systems Technologies  
engineering for life

# Semiconductor Technology

- Ceramic and metal packages
- Stacked die packages
- Hermetic packages
- Transfer molding
- A variety of I/O configurations
- Miniaturization solutions

# Semiconductor Technology

One of MST's core areas of expertise lies in the development and manufacture of miniaturized, implantable electronic modules.

All mission critical functions are accessible within the group to provide customized solutions. Capabilities for providing miniaturized packages include design, substrate manufacturing, component selection and validation as well as all major semiconductor packaging processes.

DYCONEX AG, an MST company located in Bassersdorf, Switzerland, is an expert and technological leader in high-density interconnects based on flex, rigid-flex and rigid technology.

Micro Systems Engineering GmbH, an MST company located in Berg, Germany, is a leading manufacturer of ceramic substrates and has solid and proven expertise in applying all major semiconductor packaging technologies including transfer molding.

Micro Systems Engineering, Inc, an MST company located in Lake Oswego, USA, is a leading specialist in medical microelectronics for Class III applications. Its expertise in the development of complete packages includes the layout of printed circuit board, miniaturized component definition as well as design verification and extensive reliability tests.

## SEMICONDUCTOR PACKAGING

MST offers various customized packaging solutions for a wide range of base materials, I/O configurations and housing types.

The newest technology development enables the production of SDBGAs (Stacked Die Ball Grid Arrays) in small and medium-sized volumes applying transfer molding technology, laser marking and singulation.

### BASE MATERIALS

- LTCC
- Al<sub>2</sub>O<sub>3</sub>
- PCB

### I/O-CONFIGURATIONS

- Ball Grid Array (BGA)
  - Stacked Die BGA (SDBGGA)
  - High voltage BGA
- Land Grid Array (LGA)
- Castellation
- Single In-Line/Dual In-Line (SIL/DIL)
- Quad Flat Packages (QFP)

### HOUSINGS

- Non-hermetic housings using plastic/metal covers or organic coatings
- Hermetic housings by soldering

## QUALITY

The quality system of the MST Group derives from the stringent requirements of life-sustaining implants and assures 100% traceability of processes and materials.

## MICRO SYSTEMS TECHNOLOGIES

Micro Systems Technologies Group (MST) consists of four technology companies that provide innovative products and services for medical devices and other high-reliability/high-performance industries. The offering includes HDI/microvia PCBs, ceramic substrates, assembly and semiconductor packaging processes, electronic module design and manufacturing, as well as batteries and battery packs for medical implants.

The MST Companies:

DYCONEX AG

LITRONIK Batterietechnologie GmbH

Micro Systems Engineering GmbH

Micro Systems Engineering, Inc.



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