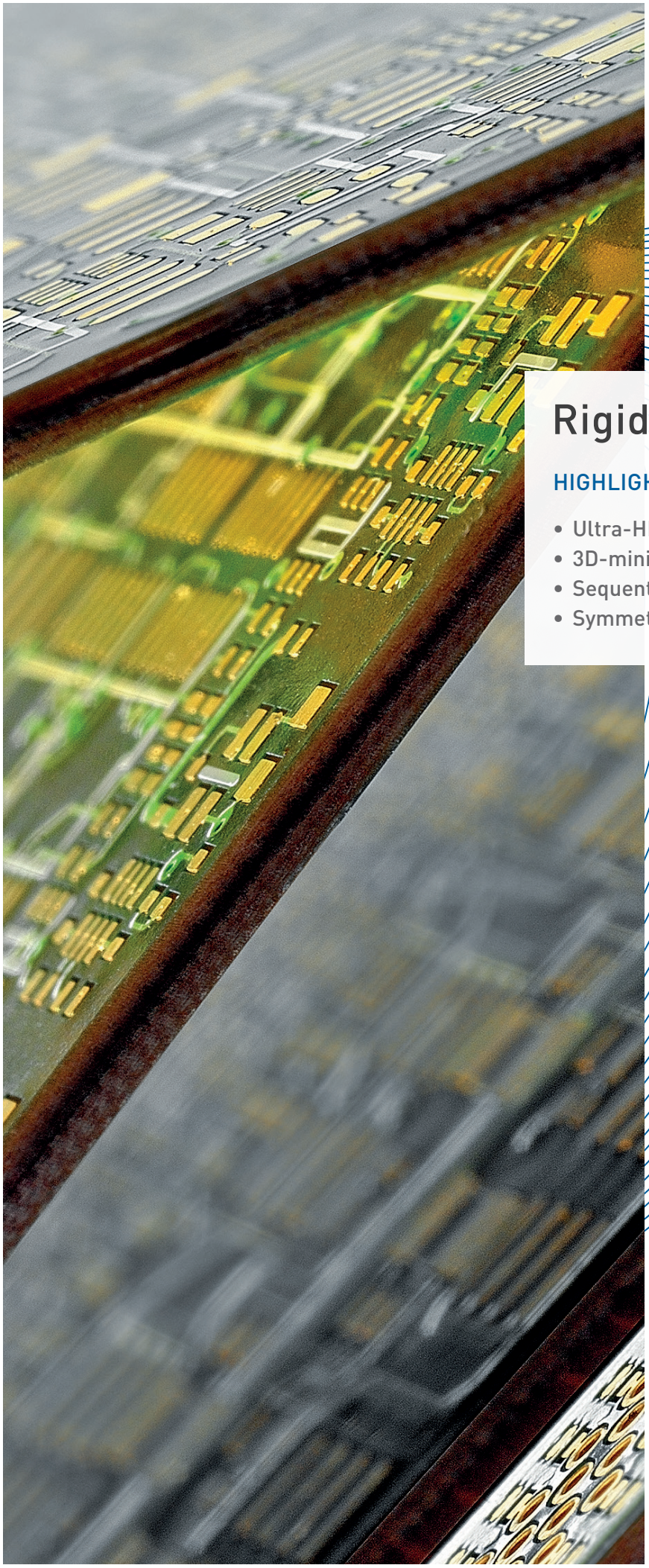

MST
Micro Systems Technologies

Rigid-flex

HIGHLIGHTS

- Ultra-HDI solutions
- 3D-miniaturization
- Sequential & parallel build-up
- Symmetric & asymmetric build-up

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Rigid-flex

Polyimide Rigid-Flex Circuit Boards

Description	Production capability
Lines/spaces	35/40 µm
Microvias/pads (flex) Ø	50/150 µm
Microvias/pads (rigid, laser) Ø	75/200 µm
Through vias/pads (rigid, mech.)	125/250 µm
Thinnest dielectric thickness (flex)	12 µm
Thinnest dielectric thickness (rigid)	60 µm
Conductor width tolerance	+/- 20%
Artwork to soldermask tolerance	+/- 25 µm
Layer count	up to 20

Description	Leading edge capability
Lines/spaces	20/35 µm
Microvias/pads (flex) Ø	40/100 µm
Microvias/pads (rigid, laser) Ø	50/150 µm
Through vias/pads (rigid, mech.)	100/200 µm
Thinnest dielectric thickness (flex)	12 µm
Thinnest dielectric thickness (rigid)	30 µm
Conductor width tolerance	+/- 10%
Artwork to soldermask tolerance	+/- 15 µm
Layer count	up to 24

Technical Data

Rigid-flex is a special class of printed circuit board wherein both rigid and flex materials are combined into a single composite. This highly versatile construction allows designers to replace cumbersome arrangements of connectors, wires and ribbon cables with integrated flex segments between rigid board elements. Since rigid-flex PCBs can be bent and folded, it is an ideal technology for the purpose of optimizing 3D volume utilization and dynamic loading conditions. By additionally exploiting the unique characteristics that each material type has to offer, specific performance and/or mechanical interface challenges can be addressed, resulting in a functionally superior, less complex, lighter and more reliable interconnect solution than would otherwise have been possible.

Given the multiple advantages of rigid-flex, it is no surprise that it finds widespread use in highly robust aerospace and defense applications as well as in high-performance medical devices that target form factor reduction. Its inherent suitability for the purpose of simplifying module/system level design, however, make it an attractive, viable and cost-effective technology for various other industrial sectors, as well.

DYCONEX has been serving the market for rigid-flex technology for more than 40 years, continually building upon its expertise and reputation for excellence by providing workable solutions for highly complex and unique interconnect challenges. Be it a 14-layer bookbinder PCB for the Herschel Satellite, a highdensity board for an F-1 steering wheel or a 3D-miniaturization project in the field of medical implants, DYCONEX' expertise in rigid-flex circuitry will serve you with a tailor-made, high-quality solution that fully meets your needs.

Technological Highlights

- **Multilayer HDI/microvia rigid-flex circuit boards for 3D-miniaturization**
- **Sequential, parallel, symmetric and asymmetric build-ups**
- **High-frequency, high-temperature and ruggedized rigid-flex solutions**
- **High-frequency rigid-flex HDI solutions based on LCP base material**
- **Thinned bending zones**
- **High variety of flex & rigid base materials, surface protections and surface finishes.**

Based in Switzerland, DYCONEX has been in the PCB business for more than 50 years and delivers leading edge interconnect solutions in flex, rigid-flex and rigid technology. DYCONEX core competence lies in the production of highly complex HDI, high-frequency and high-reliability circuit boards for medical, defense, aerospace, industrial and semiconductor applications. DYCONEX is an MST company.

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