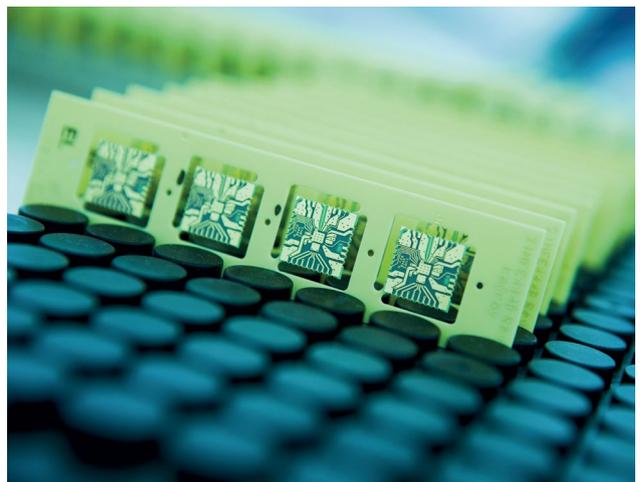
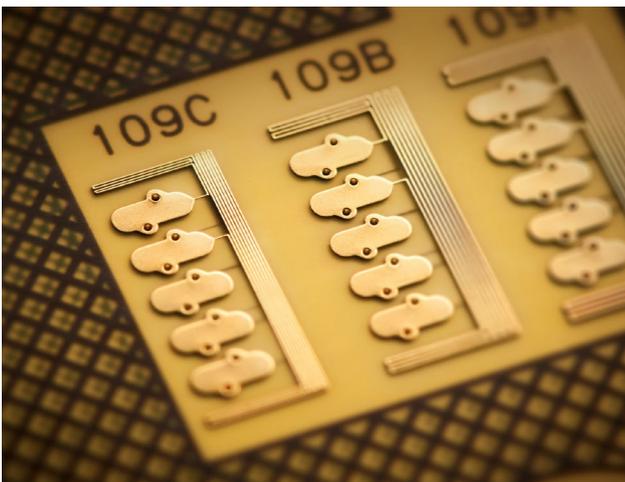


Printed circuit boards (PCBs)

Flexible, rigid-flexible and rigid printed circuit boards

For over 50 years, Cicor has been developing and producing sophisticated flexible, rigid-flexible and rigid printed circuit boards (PCBs), from the idea, through prototypes, to large-series production. Thanks to a comprehensive expertise in multilayer boards (MLBs), multi-chip modules (MCMs) and high-density interconnects (HDIs) Cicor develops innovative and reliable solutions for demanding applications in medical, aerospace and defence, automotive, communication, industrial, watches and consumer markets. Thin

materials and line width and spacing down to 25 μm enable extreme miniaturization and ultra-HDI advanced solutions. DenciTec[®] technology opens up completely new possibilities. Innovative circuits can be produced by combining PCB processes with thin-film technology.





Portfolio

Flexible PCB

- Ultra-high density interconnect
- Flex circuits (1 to 8 layers)
- Polyimide foil thickness from 12.5 μm
- Adhesive bond ply thickness from 15 μm
- Stacked vias and via-in-pad structures enabled by copper-filled blind vias
- High-precision laser contour cutting

Rigid-flexible PCB

- High-end/quality base materials, like high TG/low CTE FR4, combined with polyimide foils
- Replace rigid PCBs, connectors, cables or separate flexible circuit boards by integrating the connection of different parts in one single rigid-flex PCB
- Reduce the size of assemblies and enable 3-dimensional installation of assembled PCBs
- Improving signal integrity and reliability, especially in environments where vibration, acceleration and other severe conditions are involved
- Improved signal integrity
- Reduced logistic effort by replacing several components by one single PCB

Rigid PCB

- Rigid PCB with 1-20 layers with a clear focus on miniaturization in x, y and z axis
- (Ultra) thin high-end base materials, with CTE values in x and y axis down to below 8 ppmK-1

DenciTec®

- Line widths and spacings down to 25 μm
- Copper thicknesses of $20 \pm 5 \mu\text{m}$ on all layers
- Laser-via diameters of 30 μm
- Annular rings of 30 μm for the inner layers and 20 μm for the outer layers
- Copper-filled blind vias with the option of via stacking and vias-in-pads
- Ultra-thin circuits are possible, using a 12.5 μm polyimide core material (4-layer flex circuits less than 120 μm thick)

3D-MID

- Injection molding
- Laser activation
- Metallization
- Assembly
- Final testing
- Industrialization

Markets

-  Industrial
-  Medical
-  Aerospace and defence
-  Watches and consumer
-  Automotive and transport
-  Communication



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The Cicor Group is a globally active provider of full-cycle electronic solutions from research and development to manufacturing and supply chain management. Cicor's approximately 2300 employees at twelve locations in Europe and Asia are serving leaders from the medical, industrial and aerospace & defence industries. Cicor creates value to its customers through the combination of customer-specific development solutions, high-tech components, as well as electronic device manufacturing.



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