

Capabilities

1 to 2 layer - rigid

Standard High-End

Multilayer - rigid

Standard High-End

Geometry and Dimension

| | | | | |
|---------------------------------|-------------------------|---------------|-------------------------|---------------|
| panel format | 457x305mm and 610x460mm | | 457x305mm and 610x460mm | |
| panel structure edge | ca. 20mm | | ca. 20mm | |
| max. panel size in mm | 420x270 | | 410x260 | |
| min. panel size in mm | individual | | individual | |
| max. pcb dimension (mm) | 420x270mm and 574x424mm | | 410x260mm and 563x413mm | |
| min. pcb dimension (mm) | 2 x 2mm | | 5 x 5mm | |
| max. layer count | NA | | 24 | 40 |
| max. total board thickness [mm] | 4,5mm | | 4,5mm | |
| min. total board thickness [mm] | 0,050mm | | 0,26mm | |
| pcb thickness tolerance | (+/-) 10% | (+/-) 10% | (+/-) 10% | (+/-) 5% |
| pcb thickness tolerance | (+/-) 0,1mm | (+/-) 0,025mm | (+/-) 0,1mm | (+/-) 0,025mm |

BuildUp

| | | | | |
|--|--------|-----|--------|-----|
| max. thickness of core layer [mm] | 3,2mm | | 3,2mm | |
| min. thickness of core layer [mm] | 0,05mm | | 0,05mm | |
| max. Isol.-thickness (dielectric) [µm] | 4,5mm | | 0,36mm | |
| min. Isol.-thickness (dielectric) [µm] | 0,05mm | | 0,05mm | |
| max. operating voltage | AABUS | | AABUS | |
| layer to layer misalignment | 100µ | 75µ | 100µ | 75µ |

Layout

| | | | | |
|-----------------------------------|-------------------|-------------------|-------------------|-------------------|
| CU-inner layer (cladding) [µm] | 12/18/35/70/105 | 12/18/35/70/105 | 12/18/35/70/105 | 12/18/35/70/105 |
| CU-outer layer (cladding) [µm] | 9/12/18/35/70/105 | 9/12/18/35/70/105 | 9/12/18/35/70/105 | 9/12/18/35/70/105 |
| max. conductor width | AABUS | | AABUS | |
| min. conductor width | 100µ | 75µ | 100µ | 75µ |
| conductor width tolerance | (+/-) 20% | (+/-) 10% | (+/-) 20% | (+/-) 10% |
| track-to-track-tolerance | (+/-) 20% | (+/-) 10% | (+/-) 20% | (+/-) 10% |
| etching accuracy outer layer [µm] | (+/-) 20µ | (+/-) 10µ | (+/-) 20µ | (+/-) 10µ |
| etching accuracy inner layer [µm] | (+/-) 10µ | (+/-) 5µ | (+/-) 10µ | (+/-) 5µ |
| impedance tolerance | (+/-) 10% | (+/-) 5% | (+/-) 10% | (+/-) 5% |

Drilling / Vias

| | | | | |
|---------------------------------------|---------------|-----------|---------------------|---------------------|
| max. drill diameter | 6,0mm drilled | | 6,0mm drilled | |
| min. drill diameter | 0,150mm | | 0,150mm | |
| max. drill diameter metallized | 5,95 drilled | | 5,95 drilled | |
| min. drill diameter metallized | 0,10mm | | 0,10mm | |
| max. copper barrel | 35µ | 50µ | 35µ | 50µ |
| min. copper barrel | 20µ | 20µ | 25µ | 25µ |
| max. µvia-drill-diameter | NA | NA | 175µ | 175µ |
| min. µVia -drill-diameter | NA | NA | 125µ | 100µ |
| max. µVia-drill-diameter metallized | NA | NA | 125µ | 125µ |
| min. µVia-drill-diameter metallized | NA | NA | 75µ | 75µ |
| min. µVia-drill-diameter target pad | NA | NA | 300µ | 250µ |
| min. µVia-drill-diameter entry pad | NA | NA | 325µ | 275µ |
| max. CU µVia drill barrel | NA | NA | full copper-filling | full copper-filling |
| min. CU µVia drill barrel | NA | NA | 25µ | 25µ |
| min. annular ring | 125µ | 75µ | 125µ | 75µ |
| min. annular ring via metallized | 150µ | 100µ | 150µ | 100µ |
| min. annular ring outer layer | 125µ | 75µ | 125µ | 75µ |
| min. annular ring inner layer | 125µ | 75µ | 125µ | 75µ |
| track-to-pad-tolerance / track to PTH | (+/-) 100µ | (+/-) 50µ | (+/-) 100µ | (+/-) 50µ |
| Aspect Ratio - Blind Via | NA | NA | 0,75 to 1 | 1 to 1 |
| Aspect Ratio - Buried Via | NA | NA | 8 to 1 | 10 to 1 |
| Aspect Ratio - Through Hole | 8 to 1 | 10 to 1 | 8 to 1 | 10 to 1 |
| Aspect Ratio - µVia | NA | NA | 0,75 to 1 | 1 to 1 |

Capabilities

| | RigidFlex | | Flex | |
|--|---------------------|---------------------|---------------------|---------------------|
| | Standard | High-End | Standard | High-End |
| Geometry and Dimension | | | | |
| panel format | 457x305mm | | 457x305mm | |
| panel structure edge | ca. 20mm | | ca. 20mm | |
| max. panel size in mm | 410x260 | | 410x260 | |
| min. panel size in mm | individual | | individual | |
| max. pcb dimension (mm) | 410x260mm | | 410x260mm | |
| min. pcb dimension (mm) | 20 x 10mm | | 2 x 2mm | |
| max. layer count | 16 | 24 | 6 | 8 |
| max. total board thickness [mm] | 4,5mm | | AABUS | |
| min. total board thickness [mm] | 0,8mm | | 0,12mm | |
| pcb thickness tolerance | (+/-) 10% | (+/-) 10% | (+/-) 10% | (+/-) 5% |
| pcb thickness tolerance | (+/-) 0,1mm | (+/-) 0,025mm | (+/-) 0,1mm | (+/-) 0,025mm |
| BuildUp | | | | |
| max. thickness of core layer [mm] | 3,2mm | | 3,2mm | |
| min. thickness of core layer [mm] | 0,025mm | | 0,025mm | |
| max. Isol.-thickness (dielectric) [µm] | 1,6mm | | 0,2mm | |
| min. Isol.-thickness (dielectric) [µm] | 0,025mm | | 0,025mm | |
| max. operating voltage | AABUS | | AABUS | |
| layer to layer misalignment | 100µ | 75µ | 100µ | 75µ |
| Layout | | | | |
| CU-inner layer (cladding) [µm] | 12/18/35/70/105 | | 12/18/35/70/105 | |
| CU-outer layer (cladding) [µm] | 9/12/18/35/70/105 | | 9/12/18/35/70/105 | |
| max. conductor width | AABUS | | AABUS | |
| min. conductor width | 100µ | 75µ | 100µ | 75µ |
| conductor width tolerance | (+/-) 20% | (+/-) 10% | (+/-) 20% | (+/-) 10% |
| track-to-track-tolerance | (+/-) 20% | (+/-) 10% | (+/-) 20% | (+/-) 10% |
| etching accuracy outer layer [µm] | (+/-) 20µ | (+/-) 10µ | (+/-) 20µ | (+/-) 10µ |
| etching accuracy inner layer [µm] | (+/-) 10µ | (+/-) 5µ | (+/-) 10µ | (+/-) 5µ |
| impedance tolerance | (+/-) 10% | (+/-) 5% | (+/-) 10% | (+/-) 5% |
| Drilling / Vias | | | | |
| max. drill diameter | 6,0mm | | 6,0mm | |
| min. drill diameter | 0,150mm | | 0,150mm | |
| max. drill diameter metallized | 5,95mm | | 5,95mm | |
| min. drill diameter metallized | 0,10mm | | 0,10mm | |
| max. copper barrel | 35µ | 50µ | 35µ | 50µ |
| min. copper barrel | 25µ | 25µ | 25µ | 25µ |
| max. µvia-drill-diameter | 175µ | 175µ | 175µ | 175µ |
| min. µVia -drill-diameter | 125µ | 100µ | 125µ | 100µ |
| max. µVia-drill-diameter metallized | 125µ | 125µ | 125µ | 125µ |
| min. µVia-drill-diameter metallized | 75µ | 75µ | 75µ | 75µ |
| min. µVia-drill-diameter target pad | 300µ | 250µ | 300µ | 250µ |
| min. µVia-drill-diameter entry pad | 325µ | 275µ | 325µ | 275µ |
| max. CU µVia drill barrel | full copper-filling | full copper-filling | full copper-filling | full copper-filling |
| min. CU µVia drill barrel | 25µ | 25µ | 25µ | 25µ |
| min. annular ring | 125µ | 75µ | 125µ | 75µ |
| min. annular ring via metallized | 150µ | 100µ | 150µ | 100µ |
| min. annular ring outer layer | 125µ | 75µ | 125µ | 75µ |
| min. annular ring inner layer | 125µ | 75µ | 125µ | 75µ |
| track-to-pad-tolerance / track to PTH | (+/-) 100µ | (+/-) 50µ | (+/-) 100µ | (+/-) 50µ |
| Aspect Ratio - Blind Via | 0,75 to 1 | 1 to 1 | 0,75 to 1 | 1 to 1 |
| Aspect Ratio - Buried Via | 8 to 1 | 10 to 1 | 8 to 1 | 10 to 1 |
| Aspect Ratio - Through Hole | 8 to 1 | 10 to 1 | 8 to 1 | 10 to 1 |
| Aspect Ratio - µVia | 0,75 to 1 | 1 to 1 | 0,75 to 1 | 1 to 1 |

Capabilities

Technology

Flex
Rigidflex
Rigid Multilayer
Isolation Plates
HDI - Blind / Buried / Stacked / Staggered Vias
Sequential BuildUp and Mixture BuildUp
Impedance controlled (including measuring protocol)
Laser cutting and drilling
Heatsinks
Backplanes
Embedded Components
Cavities
Hybrid Boards
HighFrequency Boards
HighSpeed Boards
Edge / Slot Metallization
Via In Pad
Plugging (Copper / Epoxy / Soldermask)
Soldermask colours: green, blue, black, white, yellow, red
Soldermask colours: green, blue, black, white, yellow, red
Mixed Surface Finish Options

Materials

Isola
Ventec
DuPont
Thinflex
ITEQ
Arlon
Rogers
Panasonic
Nanya
Nelco
Taconic
FR4 HighTG
NoFlow Systems
HighFlow Systems
Teflon Systems
FR4 HighTG
Polyimid Glas
Others on request

Testing / Data Format

Impedance
FlyingProbe
AOI
Fischerscope XRAY XUL 220
Inhouse Lab
Film Format: DXF, RS-274-x, RS-274-D, ODB++, Eagle
Drill Format: ASCII, Excellon
E-Test Format: IPC-D356
Netlist Format: IPC-D356(A)
Compression Format: ZIP, RAR, TAR, TGZ
Secured Data Method: FTP, Cryptshare, PGP

Surface Finish Options

Hot Air Level (lead and leadfree)
Immersion Tin
ENIG
ENEPIG
EPIG
ISIG
OSP / Entek
Immersion Silver
Hardgold
Softgold

Qualifications / Certifications

UL-94V0 for Multilayer, Flex and RigidFlex
DIN EN ISO 9001:2015
DIN EN ISO 14001 (Environmental Management)
AS 9100 (Aerospace and Defence)
All relevant IPC Standards
ROHS compliance
Member of EIPC and ZVEI

Mass-Production (Locations)

China
Israel
South Korea
East-Europe
West-Europe
Germany