

# Merlin PCB Group

## Merlin Circuit Technology - Technology Roadmap



Technology	2018	2020	2022
<b>GENERAL</b>	Board thickness – 5mm Min Core Thickness – 75um Layer Count – 32 Layer	Board thickness – 6mm Min Core Thickness – 50um Layer Count – >32 Layer	Board thickness – 6mm Min Core Thickness – < 50um Layer Count – 38 Layer
<b>FEATURE GEOMETRY</b>	Track & Gap - 75um / 75um Annular Ring - 100um SM Clearance – 50um	Track & Gap - 50um / 75um Annular Ring - 75um SM Clearance – 35um	Track & Gap - 50um / 50um Annular Ring - 50um SM Clearance – > 25um
<b>MECHANICAL</b>	Rout Tolerance – 100um Z-Axis Rout Tol. – 100um Min Drill Ø – 0.2mm	Rout Tolerance – 75um Z-Axis Rout Tol. – 50um Min Drill Ø – 0.15mm	Rout Tolerance – >50um Z-Axis Rout Tol.– >50um Min Drill Ø - >0.1mm
<b>METALISATION</b>	Via Aspect Ratio – 8.5:1 Copper Fill via size – 120um	Via Aspect Ratio – 10:1 Copper Fill via size – 150um	Via Aspect Ratio – 12:1 Copper Fill via size – >200um <i>(Including through via)</i>
<b>MATERIALS</b>	FR4, Polyimide materials, PTFE, Halogen Free, Low DK	Low Loss , High Reliability / Speed Materials up to 75GHZ PTFE Replacement Materials	>75GHZ High Speed materials. 3D Materials
<b>MISC</b>	Via Fill <i>(Ink)</i> Technology Controlled Impedance 10%	Conductive Ink Filling <i>(Epoxy)</i> Controlled Impedance 5%	3D Circuit Fabrication / Metallisation