merlin
circuit technology ltd

Technology Roadmap - MCT

Technology	2021	2023	2025
GENERAL	Board thickness – 5mm Min Core Thickness – 50um 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
FEATURE GEOMETRY	Track & Gap - 60um / 75um Annular Ring - 75um SM Clearance – 35um Feature Tol. <10%	Track & Gap - 50um / 75um Annular Ring - 75um SM Clearance – 35um	Track & Gap - 50um / 50um Annular Ring - 50um SM Clearance – > 25um
MECHANICAL	Rout Tolerance – 100um Z-Axis Rout Tol. – 100um Min Drill Ø – 0.15mm	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
METALISATION	Via Aspect Ratio – 9:1 CU Fill via size – 100 & 200um	Via Aspect Ratio – 10:1 CU Fill via size – >200mm ISIG, EPIG, EPAG Finishes	Via Aspect Ratio – 12:1 Copper Fill via size – >200um *(Including through via)*
MATERIALS	FR4, Polyimide materials (UL) PTFE, Halogen Free, Low DK	Low Loss , High Reliability / Speed Materials up to 75GHZ PTFE Replacement Materials	>75GHZ High Speed materials. 3D Materials
MISC	Via Fill *(Conductive Ink)* Controlled Impedance 8% Copper Coin	Controlled Impedance 5% SM Inkjet, Multiple Cu Thickness	3D Circuit Fabrication / Metallisation