

8 layers Stackup based on standard materials (Imperial units)

Material	Layer	Type	Dielectric thickness	Trace width	Trace separation	Copper thickness	Caracteristic impedance	Differential impedance	Propagation speed (pS/In)	Signal speed (In/nS)
Copper foil 0,5oz +plating 0,5oz	1	Microstrip		4	4	1,4	59,00	96,31	168,890	5,92
Prepreg 2116 STD (4mils)		Prepreg	4							
Copper foil 1oz	2	Plane		4	4	0,8			179,773	5,56
FR4 STD Core 8mils		FR4 Core	8							
Copper foil 1oz	3	Asymetric stripline		4	4	0,8	58,74	97,74	179,773	5,56
Prepreg 2116 STD (2*4 mils)		Prepreg	8							
Copper foil 1oz	4	Plane		4	4	0,8			179,773	5,56
FR4 STD Core 14 mils		FR4 Core	14							
Copper foil 1oz	5	Plane		4	4	0,8			179,773	5,56
Prepreg 2116 STD (2*4 mils)		Prepreg	8							
Copper foil 1oz	6	Asymetric stripline		4	4	0,8	58,74	97,74	179,773	5,56
FR4 STD Core 8mils		FR4 Core	8							
Copper foil 1oz	7	Plane		4	4	0,8			179,773	5,56
Prepreg 2116 STD (4 mils)		Prepreg	4							
Copper foil 0,5oz +plating 0,5oz	8	Microstrip		7	4	1,4	43,98	71,79	171,847	5,82

Finished PCB Total Thickness 61,60

Speed variation -6,44%

Current vs.Trace Width, Copper Weight, Layer and Temperature Rise, Track resistance

T = maximum temperature rise above ambient in °C =	10
Trace Width	25
Copper Weight (1oz = 35µ)	1
Outer or Inner layer (O or I)	O
Track length (mils)	440
Via Diameter (mils)	20
Copper Resistivity (nano-Ohms / inches)	4,37E-10
k = derating constant (.024 for inner, .048 for outer) =	0,048
A = cross-sectional area in square mils =	36
Maximum current in Amps	1,776
Track resistance in Ohms	5.34E-09
Maximum current per via in Amps	1,414

Typical Dielectric Materials	Dielectric Constant
FR4 Epoxy Fibreglass	4,7
Teflon	2.2
Teflon Glass	2.5
Polyimide	3.5
Polyimide Glass	4.2
Chosen Dielectric	4,5
Chosen Dielectric	4,5

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