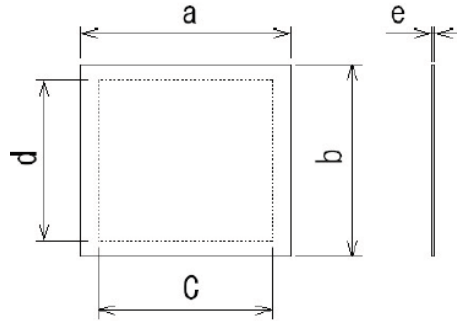
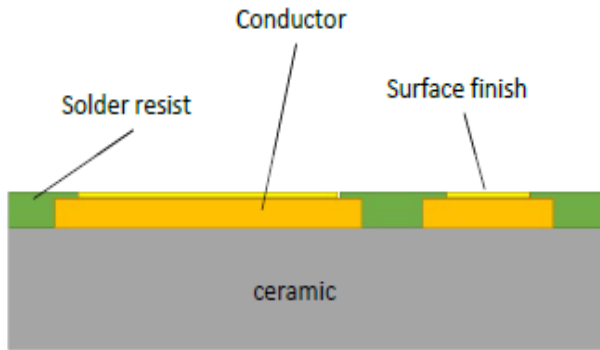


Volume Manufacturing Process – <u>Alumina 96% / Aluminium Oxide 96% / Al₂O₃ 96%</u>	Prototypes & Low Volume <50 panels / order (DPC)	Medium & High Volume >50 panels / order (DPC)
Dimensions & Thickness		



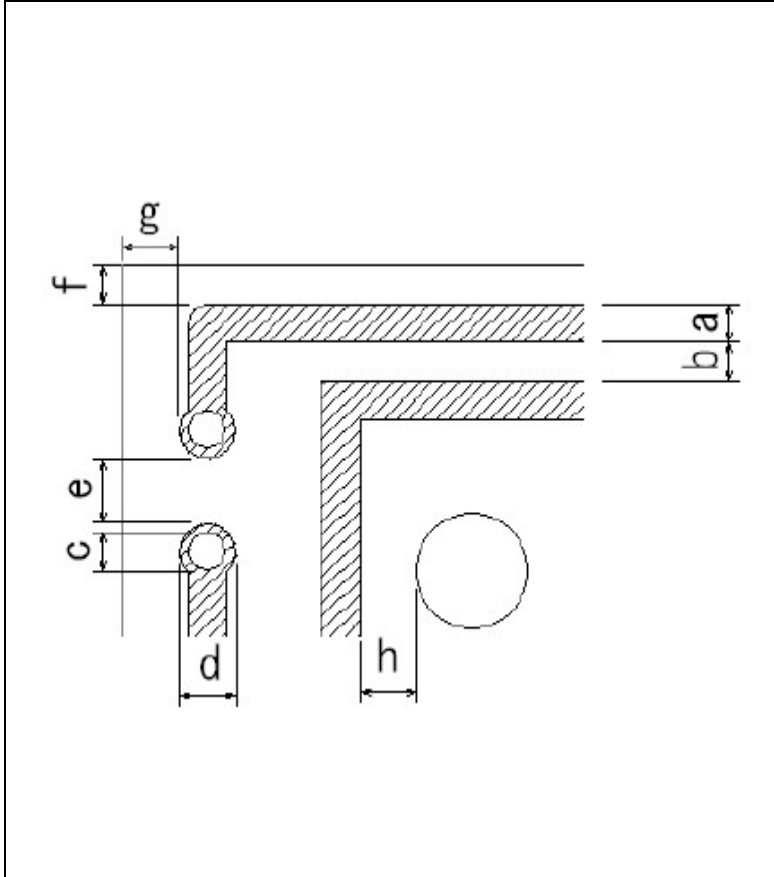
Panel Dimensions (a)x(b)		
Standard	metric	115mm x 115mm
Special		Up to 170mm x 250mm
Standard	imperial	4.5" x 4.5"
Special		Up to 6.5" x 9.5"
Thickness (e)		
Standard	metric	0.25/0.38/0.5/0.63/0.76/1.0/1.27/1.5mm
Special		
Standard	imperial	10 / 15 / 20 / 25 / 30 / 39 / 50 / 59 mil
Special		4 mil or up to 118 mil

Metallisation & Finish



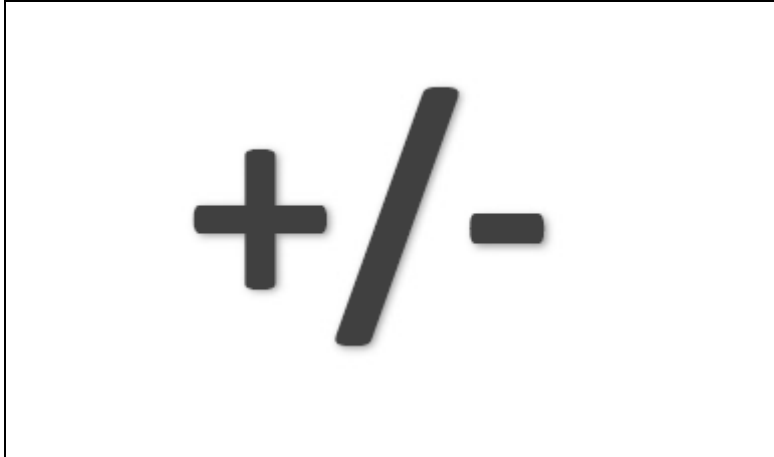
Conductor		
Standard		Copper – Cu
Special		
Conductor Thickness		
Standard	metric	35µm - 70µm
Special		18µm
Standard	imperial	1oz – 2oz
Special		0.5oz
Surface finish		
Standard		Immersion Silver, ENIG, ENEPIG
Special		IPIG (no nickel), please enquire
Solder resist		
Standard		Green, Black, White
Special		Other – please enquire
Silk screen / legend		
Standard		Black, white
Layers		
Standard		Singe – double sided
Special		

Volume Manufacturing Process – Alumina 96% / Aluminium Oxide 96% / Al₂O₃ 96%	Prototypes & Low Volume <50 panels / order (DPC)	Medium & High Volume >50 panels / order (DPC)
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Min. line width (a)		
Standard	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil
Min. line width (b)		
Standard	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil
Line/pad to edge spacing (f)		
Standard	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil
Via Specifications		
Via diameter (c)	0.08mm / 3 mil	0.08mm / 3 mil
Min. via spacing (b)	0.15mm / 6 mil	0.15mm / 6 mil
Via/hole to edge spacing	3 x via diameter	3 x via diameter
Through hole metallisation	Plated through hole (PTH)	Plated through hole (PTH)
Annular ring specifications		
Min. annular ring diameter (d)	0.10mm / 4 mil	0.10mm / 4 mil
Min. annular ring spacing (e)	0.10mm / 4 mil	0.10mm / 4 mil
Annular ring to edge spacing (g)	0.15mm / 6 mil	0.15mm / 6 mil
Line to hole/via spacing (h)		
Standard	0.15mm	0.15mm
Special	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil

Tolerance		
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Dimensional tolerance		
Standard	+/- 100µm / 4 mil	+/- 100µm / 4 mil
Special	+/- 50µm / 2 mil	+/- 50µm / 2 mil
Thickness tolerance		
Standard	+/- 10%	+/- 10%
Special	+/- 5%	+/- 5%
Hole tolerance		
Standard	+/- 100µm / 4 mil	+/- 100µm / 4 mil
Special	+/- 50µm / 2 mil	+/- 50µm / 2 mil
Pad to hole/via tolerance		
Standard	+/- 100µm / 4 mil	+/- 100µm / 4 mil