

Design rules & specifications ceramic PCB

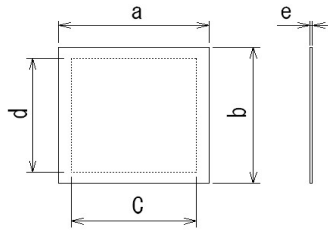


Last update: Jan 2018

Alumina 96% | Aluminum Oxide 96% | Al2O3 96%

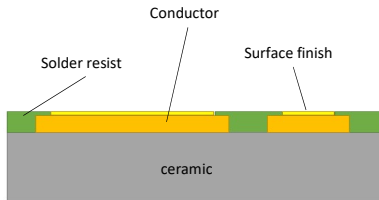
Volume	Prototypes & Low volume < 50 panels / order	Medium & High volume >50 panels / order	High Volume > 500 panels / order
Manufacturing process	DPC	DPC	Thick Film

Dimensions & thickness



Panel Dimensions (a)x(b)				
Standard	metric	115mmx115mm	115mmx115mm	115mmx115mm
Special		up to 170mm x 250mm	up to 170mm x 250mm	up to 170mm x 170mm
Standard	imperial	4.5" x 4.5"	4.5" x 4.5"	4.5" x 4.5"
Special		up to 6.5" x 9.5"	up to 6.5" x 9.5"	up to 6.5" x 6.5"
Thickness (e)				
Standard	metric	0.25 0.38 0.5 0.63 0.76 1.0 1.27 1.5 mm	0.25 0.38 0.5 0.63 0.76 1.0 1.27 1.5 mm	0.25 0.38 0.5 0.63 0.8 1.0mm
Special			0.1mm or up to 3mm	0.1mm
Standard	imperial	10 15 20 25 30 39 50 59 mil	10 15 20 25 30 39 50 59 mil	10 15 20 25 30 39 mil
Special			4 mil or up to 118 mil	15 mil

Metalization & finish



Conductor				
Standard		Copper - Cu	Copper - Cu	Silver - Ag
Special				Silver-Palladium - AgPd
Conductor thickness				
Standard	metric	35um-70um	35um-70um	7um - 20um
Special		18um	18um	14um - 40um
Standard	imperial	1oz-2oz	1oz-2oz	0.5oz - 1oz
Special		0.5oz	0.5oz	1.5oz
Surface finish				
Standard		Immersion Silver, ENIG, ENEPIG	Immersion Silver, ENIG, ENEPIG	None, ENIG
Special		IPIG (no nickel), please inquire	IPIG (no nickel), please inquire	IPIG (no nickel), please inquire
Solder resist				
Standard		Solder resist: Green, Black, White	Solder resist: Green, Black, White	Glass coating: translucent, white & black
Special		other colors	other colors	high reflective white
Silk screen / legend				
Standard		black, white	black, white	black, white
Layers				
Standard		single - double sided	single - double sided	single - double sided
Special				multilayer - up to 4 layers

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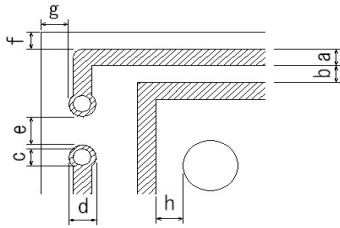


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Volume	Prototypes & Low volume < 50 panels / order	Medium & High volume >50 panels / order	High Volume > 500 panels / order
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Spacing & vias



Min. line width (a)			
Standard	0.2mm / 8 mil	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil	0.1mm / 4 mil
Min. line spacing (b)			
Standard	0.2mm / 8 mil	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil	0.15mm / 6 mil
Line/pad to edge spacing (f)			
Standard	0.2mm / 8 mil	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil	0.1mm / 4 mil
Via specifications			
Via diameter (c)	0.08mm / 3 mil	0.08mm / 3 mil	0.5mm~0.6mm / 20 mil~24 mil
Min. via spacing (b)	0.15mm / 6 mil	0.15mm / 6 mil	0.3mm
Via/hole to edge spacing	3 x via diameter	3 x via diameter	3 x via diameter
Through hole metallisation	Plated through hole (PTH)	Plated through hole (PTH)	Silver (Ag) Filled vias (aspect ratio should be less than 4)
Annular ring specifications			
Min. annular ring diameter (d)	0.10mm / 4 mil	0.10mm / 4 mil	0.2mm / 8 mil
Min. annular ring spacing (e)	0.10mm / 4 mil	0.10mm / 4 mil	0.15mm / 6 mil
Annular ring to edge spacing (g)	0.15mm / 6 mil	0.15mm / 6 mil	0.15mm / 6 mil
Line to hole/via spacing (h)			
Standard	0.15mm	0.15mm	0.15mm
Special	0.2mm / 8 mil	0.2mm / 8 mil	0.2mm / 8 mil
Special	0.1mm / 4 mil	0.1mm / 4 mil	0.1mm / 4 mil

Tolerance



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