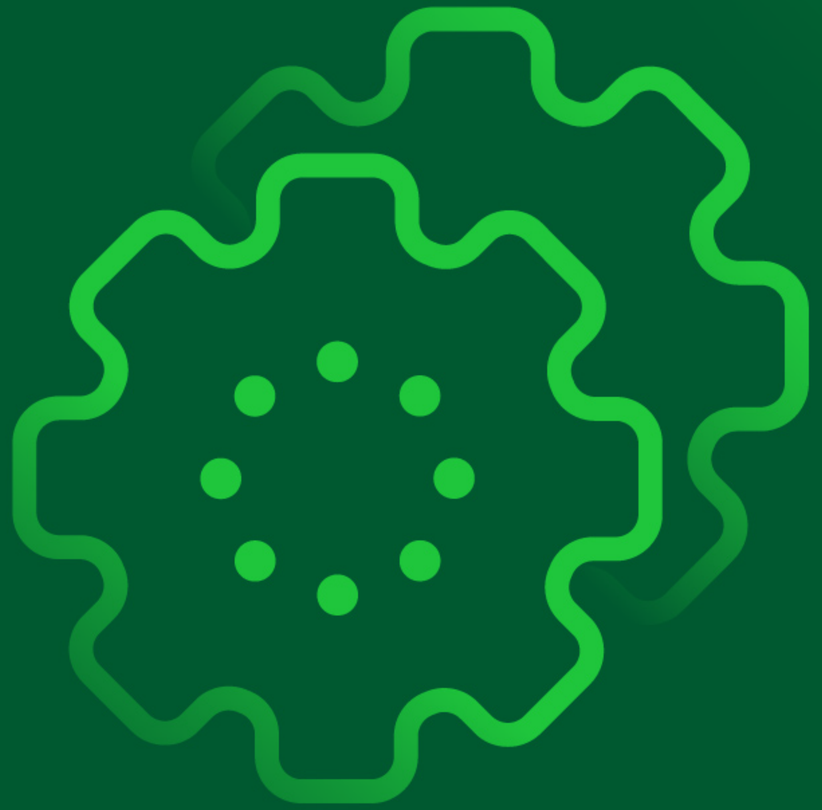
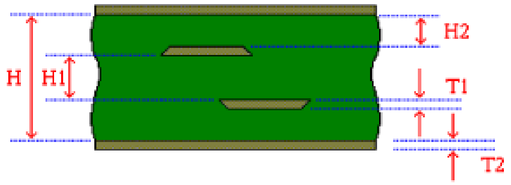
ASCENT CIRCUITS

COMPANY CAPABILITIES



COMPANY CAPABILITIES

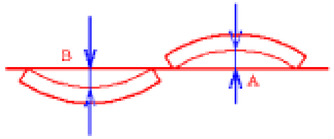
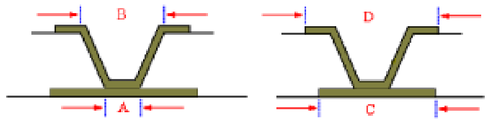
ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY		DESCRIPTION	SYM.	CAPABILITY		
				SS	DS	ML
1. Material & Construction 	**1.1**	Finished Board Thickness	H	0.25 - 2.40 mm	0.80 - 2.40 mm	
				(3.20 mm in low volumes)		
	1.2	Base Materials	NA	XPC CEM-1 FR1, FR2, FR4 Metal Clad RF (PTFE) Polyester	CEM-3 FR4 RF (Polyimide, PTFE)	FR4 RF (Polyimide, PTFE)
	1.3	Max. PCB Size	NA	1800x400 mm	1800x400 mm	950x400 mm
	1.4	TG	NA	NA	130 to 185	140 to 185
	1.5	PCB Thickness Tolerance (with respect to board thickness)	NA	+/- 10%	+18% / -10% (0.80 - 1.00)	
					+15% / -10% (1.01 - 1.20)	
					+10% / -10% (> 1.21 mm)	
	1.6	Min. Inner Layer (I/L) Thickness	H1	NA	NA	0.100 mm
	1.7	Min. Dielectric Thickness	H2	NA	NA	0.120 mm
	1.8	Min. Inner Layer Copper	T1	NA	NA	12 µm
	1.9	Max. Inner Layer Copper	T1	NA	NA	140 µm
	1.10	Min. Outer Layer (O/L) Copper	T2	18 µm		
	1.11	Max. Outer Layer Copper	T2	140 µm		

*All units are in SI

COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY		DESCRIPTION	SYM.	CAPABILITY		
				SS	DS	ML
2. Wrap 	**2.1**	Warp & Twist (Max.)	A B	< 1.50%	< 0.75%	
3. Multi-Layers	**3.1**	Max. Number of Layers	NA	NA		24
	3.2	Sequential Build-Up/Lamination	NA	NA		Max. 2 Cycles
4. Micro via Diameter 	**4.1**	Micro via Diameter at Target Land	A	NA		300 µm
	4.2	Micro via Diameter at Capture Land	B	NA		300 µm
	4.3	Micro via Target Land Size	C	NA		600 µm
	4.4	Micro via Target Land Size	D	NA		600 µm
	4.5	Max. Blind Via Aspect Ratio	NA	NA		1
	4.6	Max. Micro via Diameter of Buried Via	NA	NA		0.30 mm

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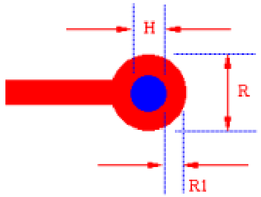
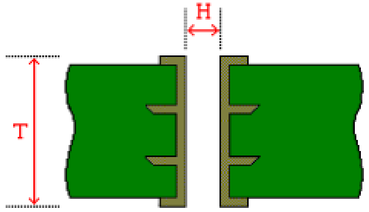
COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY	DESCRIPTION	SYM.	CAPABILITY		
			SS	DS	ML
5. Drill and Pad   P = Punched Hole D = Drilled Hole	**5.1** Min. Drill Hole Size Board Thickness of 1.60 mm	H	0.60 mm (P) 0.35 mm (D)	0.20 mm	
	5.2 Maximum Aspect Ratio (PTH) Board Thickness of 2.00 mm	H/T	NA	12	
	5.3 Process Pad Dia for min. Annular Ring (R1) of 0.15 mm - CNC Drilled Holes	NA	Drill Dia + 0.70 mm	NA	
	5.4 Process Pad Dia for min. Annular Ring (R1) of 0.15 mm - Punched Holes	NA	Drill Dia + 01.00 mm	NA	
	5.5 Process Pad Dia for min. Annular Ring (R1) of 0.05 mm - Via Holes	NA	NA	Drill Dia + 0.40 mm	
	5.6 Process Pad Dia for min. Annular Ring (R1) of 0.05 mm - Component Holes	NA	NA	Drill Dia + 0.50 mm	

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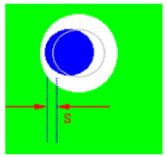
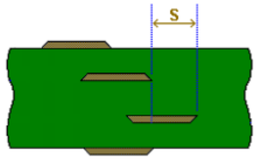
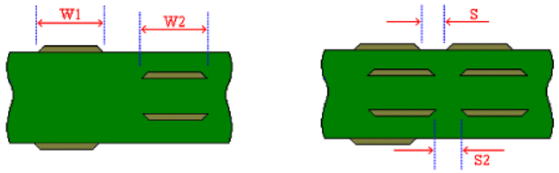
COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY		DESCRIPTION	SYM.	CAPABILITY		
				SS	DS	ML
6. Registration for Drill 	**6.1**	Registration for Drill to Inner Layer	S	NA		0.100 mm
7. Registration for Layers 	**7.1**	Layer to Layer for 4 layers	S	NA		0.100 mm
	7.2	Layer to Layer for 6 layers	S			0.125 mm
8. Line Width & Line Spacing 	**8.1**	I/L Min. Width a. 18 mic., base copper b. 35 mic., base copper	W2 & S2	NA		a. 0.075 mm b. 0.100 mm
	8.2	O/L Min. Width a. 18 mic., base copper b. 35 mic., base copper c. 70 mic., base copper d. 105 mic., base copper e. 140 mic., base copper	W1 & S1	a. 0.180 mm b. 0.200 mm	a. 0.075 mm b. 0.100 mm c. 0.200 mm d. 0.375 mm e. 0.500 mm	

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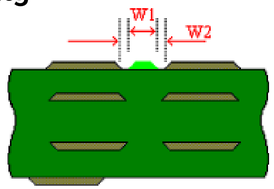
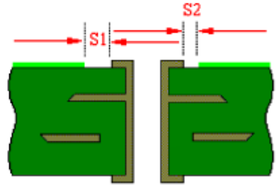
COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY		DESCRIPTION	SYM.	CAPABILITY		
				SS	DS	ML
9. S/M Capability 	**9.1**	Min. SMD Space for Dam	W2	0.300 mm	0.200 mm	
	9.2	Min. Dam Size	W1	0.250 mm	0.100 mm	
10. Registration for Solder Mask (S/M) 	**10.1**	Min. Clearance for S/M to Pattern	S2	0.150 mm	0.070 mm	
	10.2	Registration for S/M to Pattern	S1-S2	NA	0.050 mm	
11. Colors	**11.1**	S/M Colors	NA	Green Black White Blue Red Pink		
	11.2	Legend Colors	NA	Black White Green		

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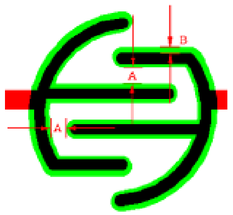
COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY	DESCRIPTION	SYM.	CAPABILITY		
			SS	DS	ML
12. Other Fabrication Varieties	**12.1** Routing Array	NA	YES		
	12.2 Profile Punching	NA	YES		NA
	12.3 Counter Sink	NA	YES		
	12.4 Counter Bore	NA	YES		
	12.5 Edge Bevelling	NA	YES		
	12.6 Controlled Depth Drilling	NA	YES		
	12.7 PTH & NPTH Slots	NA	NPTH-YES	YES	
13. Other Coatings	**13.1** Non-Conductive Filled Via Diameters Board Thickness of 1.0 - 1.6 mm	NA	0.30 - 0.60 mm		
	13.2 Peelable Mask	NA	YES		
14. Carbon Capability 	**14.1** Max. Contact Resistance	NA	20 Ω / sq		
	14.2 Max. Primary Resistance	NA	20 Ω		
	14.3 Min. Thickness	NA	0.015 mm		
	14.4 Min. Space	A	0.200 mm		
	14.5 Max. Space for Registration	B	0.100 mm		

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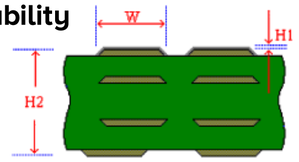
COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY		DESCRIPTION	SYM.	CAPABILITY		
				SS	DS	ML
15. Types of Surface Finishes	**15.1**	Standard HASL and Lead-Free HASL	NA	YES		
	15.2	Organic Surface Preservative (OSP)	NA	YES ENTEK HT PLUS		
	15.3	Electroless Nickel Immersion Gold (ENIG)	NA	YES		
	15.4	Electrolytic Gold Plating	NA	YES		
	15.5	Electrolytic Nickel	NA	YES		
	15.6	Immersion Tin	NA	YES		
	15.7	Electrolytic Tin Plating	NA	YES		
	15.8	Electrolytic Silver	NA	YES		
	15.9	Silver Cross Over (Jumper)	NA	YES		
	15.10	Carbon Cross Over (Jumper)	NA	YES		
	15.11	Lacquer Coating	NA	YES	NA	
16. HAL Capability 	**16.1**	PCB Thickness for HAL	H2	1.00 - 2.40 mm		
	16.2	Min. Pad Width/Space for HAL	W	0.250 mm		
	16.3	Min. HAL Thickness for any point	H1	1 µm		

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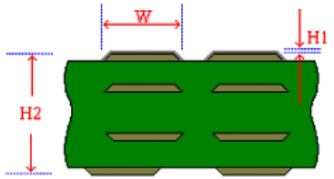
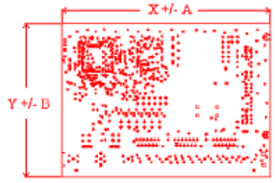
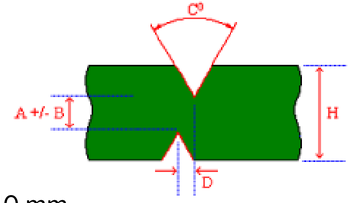
ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY		DESCRIPTION	SYM.	CAPABILITY		
				SS	DS	ML
17. Surface Finishing Metal Thickness 	**17.1**	ENIG: Ni & Au Thickness	H1	3-6 µm & 0.05 - 0.08 µm		
	17.2	Galvanic Gold: Ni & Au Thickness	H1	3-8 µm & Min. 0.15 µm		
	17.3	Immersion Tin: Thickness of Tin	H1	0.80 - 1.20 µm		
18. Dimensional Capability 	**18.1**	Outline Tolerance-Punching	A, B	+/-0.125 mm	NA	
	18.2	Outline Tolerance - CNC Routing	A, B	+/- 0.100 mm		
	18.3	Min. Diameter of Router Cutter	NA	1.00 mm		
19. V-Score Capability  H = 0.80 - 2.40 mm	**19.1**	V-Score Angle	C	30°, 60° & 90°		
	19.2	Min. Distance: V-Score Edge to Copper	NA	0.500 mm		
	19.3	Tolerance of V-Score Residual	B	0.100 mm		
	19.4	V-Score Off Line	D	0.100 mm		

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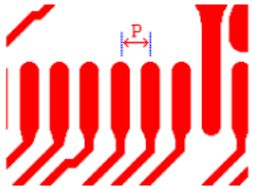
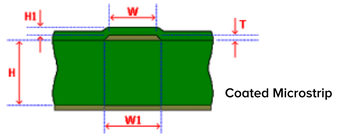
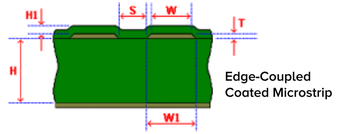
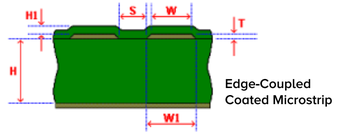
COMPANY CAPABILITIES

ACPL/CAP-MX/2004 R8 (Dt: 04 Apr, 2021)

CATEGORY	DESCRIPTION	SYM.	CAPABILITY		
			SS	DS	ML
20. Test Capability 	**20.1** Voltage	NA	1 - 250 VDC		
	20.2 Isolation	NA	10 MΩ - 100 MΩ		
	20.3 Continuity	NA	5 Ω - 50 KΩ		
	20.4 Min. SMD PAD Pitch SMD	P	Flying Probe: 0.200 mm | Others: 0.500 mm		
21. Impedance Control Capability 	**21.1** Impedance Control > 50Ω	NA	NA	+/- 10%	
	21.2 Impedance Control < 50Ω	NA	NA	+/- 14%	
22. Differential Impedance Capability 	**22.1** Differential Impedance Control > 50Ω	NA	NA	+/- 10%	
	22.2 Differential Impedance Control < 50Ω	NA	NA	+/- 14%	
23. Coplanar Impedance Capability 	**23.1** Coplanar Impedance Control > 50Ω	NA	NA	+/- 10%	
	23.2 Coplanar Impedance Control < 50Ω	NA	NA	+/- 14%	

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