

22 layers Class 2			GND			POSSIBLE VIAS 1808 (.018 PAD .008 HOLE) 2010 (.020 PAD .010 HOLE)	
1	copper	0.0005	.008 hole			1	SURFACE
	dielectric	0.003	1-2 u				
2	copper	0.0007	.018 pad			2	GND /PWR PLANE
	dielectric	0.004					
3	copper	0.0007				3	Pair Lyr 1 (3.5 w-5.5 sp)
	dielectric	0.0045	.008 hole 1 thru 9				
4	copper	0.0007	.018 pad			4	PLANE
	dielectric	0.004					
5	copper	0.0007				5	Pair Lyr 2 (3.5 w-5.5 sp)
	dielectric	0.0045					
6	copper	0.0007				6	PLANE
	dielectric	0.004					
7	copper	0.0007				7	Pair Lyr 3 (3.5 w-5.5 sp)
	dielectric	0.0045					
8	copper	0.0007				8	PLANE
	dielectric	0.004					
9	copper	0.0007		9	Pair Lyr 4 (3.5 w-5.5 sp)		
	dielectric	0.0045					
10	copper	0.0007		10	PLANE		
	dielectric	0.004					
11	copper	0.0007		11	Pair Lyr 5 (3.5 w-5.5 sp)		
	dielectric	0.0045					
12	copper	0.0007		12	GND /PWR PLANE		
	dielectric	0.004					
13	copper	0.0007		13	Pair Lyr 6 (3.5 w-5.5 sp)		
	dielectric	0.0045					
14	copper	0.0007		14	PLANE		
	dielectric	0.004					
15	copper	0.0007		15	Pair Lyr 7 (3.5 w-5.5 sp)		
	dielectric	0.0045					
16	copper	0.0007		.006 hole 16 thru 22 .014 pad required for 1/2 mm pitch bga on sec side	16	PLANE	
	dielectric	0.004					
17	copper	0.0007			17	Pair Lyr 8 (3.5 w-5.5 sp)	
	dielectric	0.0045					
18	copper	0.0007			18	PLANE	
	dielectric	0.004					
19	copper	0.0007			19	Pair Lyr 9 (3.5 w-5.5 sp)	
	dielectric	0.0045					
20	copper	0.0007			20	PLANE	
	dielectric	0.004					
21	copper	0.0007		21	other layer		
	dielectric	0.003					
22	copper	0.0005		22	SURFACE/GND		
0.003 ***plus plating (.001)x 3 places on lyrs 2, 9, 16							
thk	0.1045	0.0317					

Notes:
Maximum number of lamination cycle for any set of laminate to experience is 4 times.
we can do up to three on two halves and the final will be the fourth for both halves and we can split it anywhere
4 mil drill requires 12 mil pad size (minimum); can drill and plate through a maximum 0.040" total board/copper thickness.
6 mil drill requires 14 mil pad size (minimum); can drill and plate through a maximum 0.060" total board/copper thickness.
8 mil drill requires 18 mil pad size (minimum); can drill and plate through a maximum 0.080" total board/copper thickness.
10 mil drill requires 20 mil pad size (minimum); can drill and plate through a maximum 0.110" total board/copper thickness.
You will have to use 12 mil or larger drill if you need make the board thick than the proposed 20-layer, 0.107" thick board.
PART # TLK2711JR-ZQE) VIA IN PADS .006 HOLE .011 PADS (CELL=BGA80) .01969 PITCH 1/2 MM (16 TIMES)
Diff pair to pair should be three times dielectric (15)
PART # TLK2711JR-ZQE) VIA IN PADS .006 HOLE .011 PADS (CELL=BGA80) .01969 PITCH 1/2 MM (16 TIMES)
45 vs radial

20 layers Class 2			GND					POSSIBLE VIAS 1808 (.018 PAD .008 HOLE) 2010 (.020 PAD .010 HOLE)	
1	copper	0.0005	.008 hole 1-2 u .018 pad	.008 hole 1-3u .018 pad	.008 hole 1 thru 7 .018 pad	.008 hole 1 thru 9 .018 pad	.008 hole 1 thru 20 .018 pad	1	SURFACE
	dielectric	0.003							
2	copper	0.0007							2
	dielectric	0.004							
3	copper	0.0007						3	Pair LYR 1 (3.5 w-5.5 sp)
	dielectric	0.0045							
4	copper	0.0007						4	PLANE
	dielectric	0.004							
5	copper	0.0007						5	Pair LYR 2 (3.5 w-5.5 sp)
	dielectric	0.0045							
6	copper	0.0007			6	PLANE			
	dielectric	0.004							
7	copper	0.0007			7	Pair LYR 3 (3.5 w-5.5 sp)			
	dielectric	0.0045							
8	copper	0.0007			8	PLANE			
	dielectric	0.004							
9	copper	0.0007			9	Pair LYR 4 (3.5 w-5.5 sp)			
	dielectric	0.0045							
10	copper	0.0007			10	PLANE			
	dielectric	0.004							
11	copper	0.0007			11	Pair LYR 5 (3.5 w-5.5 sp)			
	dielectric	0.0045							
12	copper	0.0007			12	GND /PWR PLANE			
	dielectric	0.004							
13	copper	0.0007			13	Pair LYR 6 (3.5 w-5.5 sp)			
	dielectric	0.0045							
14	copper	0.0007		.004 hole 14 thru 20 .014 pad required for 1/2 mm pitch bga on sec side	.008 hole 12 thru 20 .018 pad	14	PLANE		
	dielectric	0.004							
15	copper	0.0007				15	Pair LYR 7 (3.5 w-5.5 sp)		
	dielectric	0.0045							
16	copper	0.0007				16	PLANE		
	dielectric	0.004							
17	copper	0.0007				17	Pair LYR 8 (3.5 w-5.5 sp)		
	dielectric	0.0045							
18	copper	0.0007				18	PLANE		
	dielectric	0.004							
19	copper	0.0007		19	other layer				
	dielectric	0.003							
20	copper	0.0005		20	SURFACE/GND				
0.004 ***plus plating (.001)x4 places on lyrs 2, 6, 7, 11									
thk	0.0956				0.0327	0.0426			
6=99.5 diff 5=93 diff									

copper	0.0007
dielectric	0.005

0.0057
ervery layer we add requires one copper and one dielectric for a totalof .0057" thicker