

2oz TOP COPPER LAYER 1
FR4
2oz INNER COPPER LAYER 2 (POWER)
0.040" CORE (MUST BE ABLE TO INSULATE 600V BETWEEN LAYERS 3-4)
2oz INNER COPPER LAYER 3 (GND)
FR4
2oz BOTTOM COPPER LAYER 4

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL LAYOUT	12/11	APPROVED
B	ADDED PWM & PID CIRCUITS BOARD FIXES IMPLEMENTED. ADDED 2 ROUTING LAYERS	02/12	APPROVED

CLASS II FABRICATION NOTES: (UNLESS OTHERWISE SPECIFIED)

1. BOARDS SHALL BE 100% NET LIST TESTED FOR OPENS AND SHORTS PER PROVIDED IPC-D-356 NETLIST.
2. THIS BOARD SHALL BE MANUFACTURED IN ACCORDANCE WITH IPC-6012A CLASS II SPECIFICATIONS AND MEET IPC-600 CLASS II ACCEPTABILITY STANDARDS.
3. MATERIAL:
 - a. FR4 PER IPC 4101B/24, /26, OR /28.
 - b. SIGNAL LAYERS TO BE 2 OZ. COPPER.
 - c. INNER LAYERS TO BE 2 OZ. COPPER.
 - d. OVERALL THICKNESS TO BE 0.062" +/- 10%
4. LEGEND:
 - a. WHITE NON-CONDUCTIVE EPOXY INK BOTH SIDES.
5. SOLDERMASK:
 - a. APPLY LIQUID PHOTO-IMAGABLE (LPI) SOLDER MASK OVER BARE COPPER PER IPC-SM-840 CLASS H, COLOR RED, BOTH SIDES.
6. PLATING FINISH:
 - a. HOT AIR SOLDER LEVELING (HASL) SN63A SnPb SOLDER.
 - b. ~~IMMERSION SILVER INK.~~
7. PROCESS ALLOWANCES:
 - a. MAXIMUM BOW AND TWIST ACROSS DIAGONAL CORNERS OF THE BOARD SHALL NOT EXCEED 0.75%.
 - b. HOLE DIMENSIONS APPLY AFTER PLATING.
 - c. ALL HOLES SHALL BE LOCATED WITHIN 0.003" DIAMETER OF TRUE POSITION.
 - d. LAYER TO LAYER REGISTRATION SHALL BE WITHIN 0.003".
 - e. CONDUCTOR WIDTHS AND SPACING SHALL BE WITHIN +/- 0.002".
 - f. REMOVE ALL BURRS AND BREAK SHARP EDGES 0/015" MAX.
 - g. CUT OUTSIDE OF 0.001" BOARD OUTLINE.

DRILL CHART: TOP to BOTTOM			
ALL UNITS ARE IN MILS			
FIGURE	SIZE	PLATED	QTY
○	10.0	PLATED	245
20	20.0	PLATED	84
120	20.0	PLATED	288
132	32.0	PLATED	45
134	34.0	PLATED	32
138	38.0	PLATED	34
142	42.0	PLATED	16
143	43.0	PLATED	8
147	47.0	PLATED	14
150	50.0	PLATED	32
151	51.0	PLATED	12
155	55.0	PLATED	25
163	63.0	PLATED	6
190	90.0	PLATED	20
110	110.0	PLATED	8
126	126.0	PLATED	6
138	138.0	PLATED	16
209	209.0	PLATED	14
SL1	160.0x50.0	PLATED	8
SL2	160.0x50.0	PLATED	2
SL3	220.0x50.0	PLATED	8
SL4	220.0x50.0	PLATED	2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: 2 PL DECIMALS +/- 0.02" 3 PL DECIMALS +/- 0.005" ANGLES +/- 1 Degree FRACTIONS .	SIGNATURES	DATE	Power Buoy COTS SMPS Converter		
			MONTEREY BAY AQUARIUM RESEARCH INSTITUTE 7700 SANDHOLDT ROAD MOSS LANDING, CA		
	DESIGNED BY: PAUL MCGILL		SIZE C	REVISION B	DWG NO 10020788
	LAYOUT BY: JOSE ROSAL		SCALE 1-1		SHEET 1-1