ART FILM - fab1

REVISION			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/10/18	E. WALSH
B	ECR-083623	23/01/19	E. WALSH
C	ECR-086499	27/03/19	S. DOYLE
D	ECR-089103	07/10/19	S. DOYLE
E	ECR-090599	11/03/20	S. DOYLE
F	ECR-096634	09-JUL-20	S. DOYLE

PRIMARY SIDE

SPECIFICATIONS:

MATERIALS: HOMOGENOUS MATERIALS IN THIS BOARD SHALL BE COMPLIANT THE EU RoHS DIRECTIVE 2002/95/EC
ALL LAMINATES AND BONDING MATERIALS SHOULD BE SELECTED FROM IPC-4101 OR IPC-4103, MINIMUM Tg>130degC, Td>300degC, U.L. RATING OF 94 V-0

MATERIAL FAMILY: S1000-2 OR EQUIVALENT

CLADDING: EXTERNAL LAYERS .5 OZ. COPPER, OVERPLATE TO 1.5 OZ.
INTERNAL SIGNAL LAYERS .5 OZ. COPPER.
INTERNAL PLANE LAYERS 1 OZ. COPPER.

NOTE: IF THE LAYER STACKUP CONFLICTS WITH THE ABOVE CLADDING SPECIFICATIONS THEN THE LAYER STACKUP SHALL TAKE PRECEDENCE.

SOLDER MASK: SHALL BE LIQUID PHOTOIMAGEABLE (LPI) APPLIED ON BOTH SIDES OVER BARE COPPER OR GOLD AND SHALL MEET IPC-SM-840 (LATEST REV.) CLASS 3. COLOR MATT BLACK (RS-2000 OR EQUIVALENT).

SILK SCREEN: SHALL BE PERMANENT NON-CONDUCTIVE EPOXY INK, COLOR: WHITE SYNTHETIC INKJET PRINTING ALLOWED FOR DENSE BOARDS, COLOR: WHITE

SURFACE FINISH: ENIG (Electroless Nickel/Immersion Gold)
2.54um (100 MICRO INCHES) NICKEL/
0.0762um - 0.127um (3-5 MICRO INCHES) GOLD

INTENTIONAL SHORTS: IF SUPPLIED DATA INCLUDES A FILE "READ_ME.2", THEN INTENTIONAL NET SHORTS EXIST. CUSTOMER REVIEW AND APPROVAL IS REQUIRED IF SUPPLIED DATA REPORTS ANY CONDITION THAT DOES NOT MATCH "READ_ME.2" FILE PROVIDED.

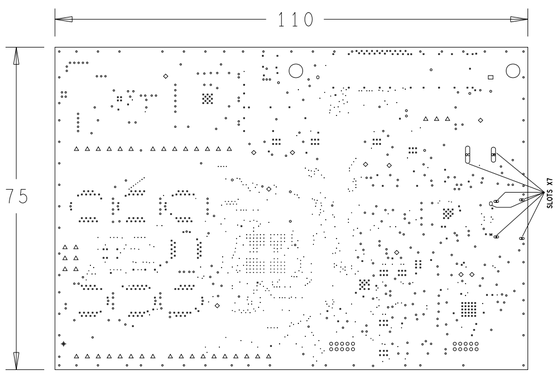
TEST REQUIREMENTS: 100% NETLIST ELECTRICAL VERIFICATION USING CUSTOMER SUPPLIED IPC-D-356 NETLIST FOR OPENS AND SHORTS WHEN "GERBER DATA" IS PROVIDED. THIS VERIFICATION ALSO REQUIRED FOR "ODB++" DATA PER EMBEDDED NETLIST.

IMPEDANCE CONTROL REQUIREMENTS

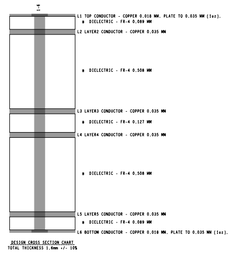
1. OUTER LAYERS 1 & 6 ALL 0.1377mm (5.42mils) TRACES TO BE 50 OHM SINGLE ENDED IMPEDANCE
2. LAYER 4 ALL 0.145mm (5.72mils) TRACES TO BE 50 OHM SINGLE ENDED IMPEDANCE CONTROLLED
3. OUTER LAYERS 1 & 6 90 OHM DIFFERENTIAL IMPEDANCE REQUIRED WITH TRACE/GAP 0.123mm/0.127mm

REQUIREMENTS:

1. REFER TO IPC-6010 SERIES (LATEST REV.), CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
2. ACCEPTABILITY PER ANALOG DEVICES, INC. SPECIFICATION TST00115, (LATEST REVISION.)
3. MODIFICATIONS TO THE ARTWORK ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
4. HOLE PATTERN TOLERANCES FOR UNDIMENSIONED HOLES SHALL BE A DIAMETER OF 0.127mm (0.005 INCHES) FROM THEIR TRUE POSITION.
5. PLATED HOLE WALL THICKNESS SHALL NOT BE LESS THAN 25um (0.001 INCH) MINIMUM AVERAGE, WITH NO READING LESS THAN 20um (.0008) BY CROSS SECTION.
6. HOLE DIAMETERS APPLY AFTER PLATING.
7. FINISHED CONDUCTOR WIDTHS SHALL NOT BE REDUCED FROM THE NOMINAL INDICATED ON THE MASTER PATTERN, BY MORE THAN THE CONDUCTOR THICKNESS.
8. MINIMUM DESIGN LINE WIDTH IS 0.125 MM.
9. MINIMUM DESIGN SPACING IS 0.100 MM.
10. NON-FUNCTIONAL PAD REMOVAL FROM INNER SIGNAL LAYERS MAY BE PERFORMED AFTER CUSTOMER APPROVAL.
11. IF PAD SIZES PROVIDED ARE NOT LARGE ENOUGH TO MAINTAIN ANNULAR RING REQUIREMENT, MFGR. MAY REQUEST APPROVAL TO TEAR DROP PADS TO MAINTAIN ANNULAR RING. (AT PAD TO TRACE INTERSECTION ONLY AND ELECTRICAL INTEGRITY MUST BE MAINTAINED.)
12. THIEVING MAY BE ADDED TO COMPENSATE FOR LOW COPPER DENSITY AREAS ON THIS DESIGN ONLY AFTER REVIEW AND APPROVAL FROM THE CUSTOMER:
    A. THIEVING TO CARD EDGE, FIDUCIALS, NON-PLATED THROUGH HOLES, ALL OTHER FEATURES TO BE 5.08MM (0.200 INCH) MINIMUM.
    B. THERE SHALL BE NO THIEVING IN ANY AREAS FREE OF SOLDER MASK OR INTERNAL COPPER PLANES.
13. MFGR. TO LEGIBLY ETCH OR STAMP/SCREEN WITH PERMANENT NON-CONDUCTIVE INK ON SECONDARY SIDE SILKSCREEN NEAR TOP RIGHT CORNER OF BOARD AS VIEWD HERE.
    A. U.L. CODE-FLAMMABILITY RATING
    B. DATE CODE (STAMP).
    C. LOT NUMBER
    D. MFGR LOGO
    E. SUCCESSFUL ELECTRICAL TEST.
14. REPAIRS PER IPC-7711/21 (LATEST REV.) ARE ALLOWED.
15. ~~THRU VIA-IN-PAD TO BE FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER. COPLANAR ON BOTH SIDES WITHIN 0.025 MM PRIOR TO FINAL PLATING.~~



DRILL CHART: TOP to BOTTOM					
ALL UNITS ARE IN MILLIMETERS					
FIGURE	FINISHED_SIZE	ROTATION	TOLERANCE_DRILL	PLATED	QTY
·	0.2032	-	+0.0/-0.0	PLATED	562
·	0.254	-	+0.0/-0.0	PLATED	383
·	0.4064	-	+0.0/-0.0	PLATED	356
◦	0.508	-	+0.0/-0.0	PLATED	10
◦	0.762	-	+0.0/-0.0	PLATED	20
◇	1.016	-	+0.0/-0.0	PLATED	11
△	1.143	-	+0.0/-0.0	PLATED	41
·	0.6604	-	+0.0/-0.0	NON-PLATED	1
◦	0.7112	-	+0.0508/-0.0508	NON-PLATED	1
□	1.0922	-	+0.0508/-0.0508	NON-PLATED	1
○	3.175	-	+0.0/-0.0	NON-PLATED	2
⬭	1.1176x0.508	0.000	+0.0/-0.0	PLATED	4
⬭	3.5052x0.9906	90.000	+0.0/-0.0	PLATED	1
⬭	4.0132x0.9906	90.000	+0.0/-0.0	PLATED	1
◦	0.9398x0.6604	90.000	+0.0/-0.0	NON-PLATED	1



HOLE TOLERANCE

UNLESS SPECIFIED
PLATED: +/- 0.0762
NON PLATED: +/- 0.05

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM TOLERANCES DECIMALS FRACTIONS ANGLES .XX +-0.125 +/- 1/32 +/- 2 .XXX +-0.1	ASSEMBLY		ANALOG DEVICES INTERNATIONAL ERDC Building Raheen Business Park Raheen, LIMERICK, IRELAND
	APPROVAL	DATE	TITLE
MATERIAL	DRAWN BY PADDY DUIGNAN	09-JUL-20	SDP-K1
	DESIGNED		
	CHECKED		
FINISH	APPROVED		SIZE A2 / FSCM NO / DRAWING NUMBER 09-049259-01 / REV F
	MFG ENGINEER		
DO NOT SCALE DWG			SCALE 1/1 / SHEET 1 OF 1

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