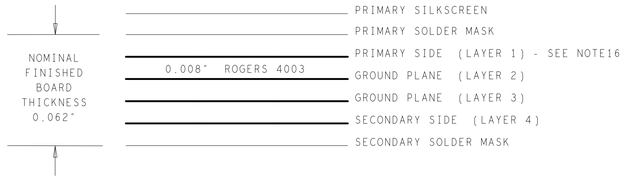
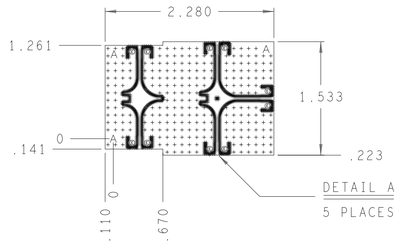
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	14AUG18	M.T.

4 LAYER STACKUP





SPECIFICATIONS:

MATERIALS;	ALL LAMINATES AND BONDING MATERIALS SHOULD BE SELECTED FROM IPC-4101 OR IPC-4103, MINIMUM Tg>170degC, Td>300degC, U.L. RATING OF 94 V-0
MATERIAL FAMILY;	ROGERS 4003 AND ISOLA 370HR
CLADDING;	EXTERNAL LAYERS .5 OZ. COPPER, OVERPLATE TO 1.5 OZ. INTERNAL PLANE LAYERS .5 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 2. COLOR GREEN.
SILK SCREEN;	SHALL BE PERMANENT NON-CONDUCTIVE EPOXY INK, COLOR: WHITE SYNTHETIC INKJET PRINTING ALLOWED FOR DENSE BOARDS. COLOR: WHITE, PRIMARY SIDE.
SURFACE FINISH;	ENIG (Electroless Nickel/Immersion Gold) PER IPC-4552 LATEST REVISION
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.

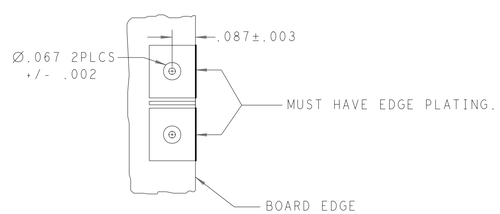
REQUIREMENTS:

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 0.005 INCHES FROM THEIR TRUE POSITION.
5. PLATED HOLE WALL THICKNESS SHALL NOT BE LESS THAN 0.001 INCH MINIMUM AVERAGE, WITH NO READING LESS THAN .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 .008 INCH.
9. MINIMUM DESIGN SPACING IS .0035 INCH.
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 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 IN A CLEAR AREA UNLESS OTHERWISE INDICATED;
    ~~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. REPAIRS ARE NOT ALLOWED IN ANY AREA DEFINED ON GOLD_PRM AND/OR GOLD_SEC ARTWORK LAYERS WHEN PROVIDED IN GERBER OR ODB++ DATA.
15. EDGE PLATING SEE DETAIL A AND B
16. CRITICAL LINE WIDTH = 0.018 +/- 0.001 AND 0.016 +/- 0.001 PRIMARY SIDE ADJUST PROCESS TO ACHIEVE WIDTH.
17. THRU VIAS FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER. COPLANAR ON PRIMARY SIDE WITHIN .001 INCH PRIOR TO FINAL PLATING.

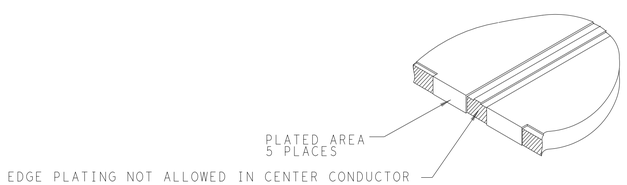
HOLE TOLERANCE

UNLESS SPECIFIED
PLATED: +/- 3 MILS
NON PLATED: +/- 2 MIL

FINISHED HOLES IN MILS ALL UNITS ARE IN MILS					
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES	
+	8.0	PLATED	1417	DIA MAX	SEE NOTE 17
+	12.0	PLATED	249	DIA MAX	SEE NOTE 17
A	60.0	NON-PLATED	3		
©	67.0	NON-PLATED	10	+/- .002	SEE DETAIL B



DETAIL B



DETAIL A

PRIMARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES .XX +-.010 +-1/32 +- 2 .XXX +-.005 .XXXX +-.0050	APPROVAL	DATE	ANALOG DEVICES	ASC DIVISION 804 WOBURN STREET WILMINGTON, MA 01887
	TEMPLATE ENGINEER			
	HARDWARE SERVICES			
	HARDWARE SYSTEMS			
MATERIAL	TEST ENGINEER		TITLE	FABRICATION
	COMPONENT ENGINEER			
	TEST PROCESS			HMC560ALM3 EVAL BOARD Z
	HARDWARE RELEASE			
FINISH	DESIGNER V.GUTBIER	14AUG18	SIZE D / FSCM NO 24355 / DRAWING NUMBER 09-050420 / REV A	
	PTD ENGINEER M.THAHIRALLY	14AUG18		
	CHECKER			
DO NOT SCALE DWG			SCALE 1/1	SHEET 1 OF 1

ART FILM - Fab1