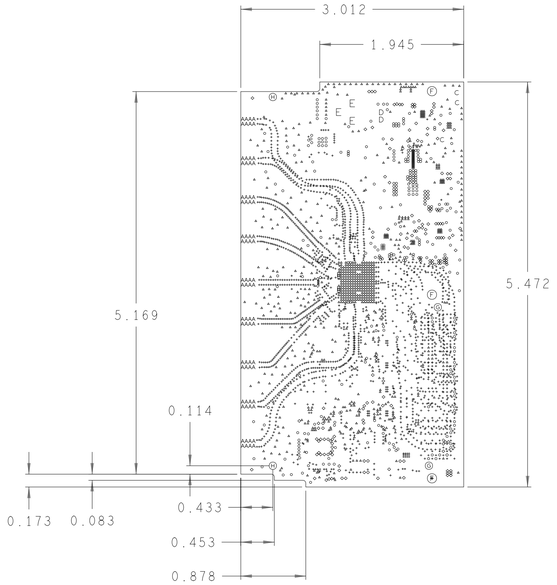
ART FILM - fab1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	28MAR19	T.H.
B	CHANGE PER ECR-084936	29JAN20	D.J.
C	CHANGE PER ECR-096196	19JUN20	P.H.



PRIMARY SIDE

HOLE TOLERANCE

UNLESS SPECIFIED
PLATED: +/- .003
NON PLATED: +/- .001

DRILL CHART: TOP to BOTTOM				
FINISHED HOLES IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
°	6.0	PLATED	4	SEE NOTE 15
^	8.0	PLATED	867	SEE NOTE 15
◦	10.0	PLATED	292	SEE NOTE 15
◇	12.0	PLATED	162	SEE NOTE 15
^	16.0	PLATED	72	SEE NOTE 15
B	20.0	PLATED	4	SEE NOTE 15
C	40.0	PLATED	3	
D	50.0	PLATED	2	
E	75.0	PLATED	3	
Ⓕ	105.0	PLATED	3	
◎	50.0	NON-PLATED	2	
⊕	105.0	NON-PLATED	2	

LAYER 1 TO LAYER 4 DRILLS

DRILL CHART: TOP to L4_GROUND				
FINISHED HOLES IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
·	8.0	PLATED	1109	

LAYER 12 TO LAYER 9 DRILLS

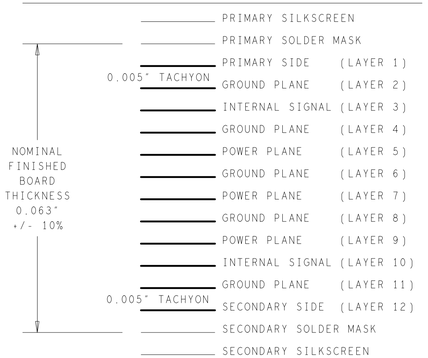
DRILL CHART: L9_POWER_DVDD1 to BOTTOM				
FINISHED HOLES IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
·	8.0	PLATED	837	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES .XX +-.010 +-1/32 +- 2 .XXX +-.005 .XXXX +-.0050	APPROVAL	DATE	ANALOG DEVICES HSX DIVISION 804 WOBURN STREET WILMINGTON, MA 01887
	TEMPLATE ENGINEER R MARION		
	HARDWARE SERVICES X		
	HARDWARE SYSTEMS X		TITLE FABRICATION AD9081/AD9082 FMCB EVALUATION BOARD
MATERIAL	TEST ENGINEER X		
	COMPONENT ENGINEER X		
	TEST PROCESS X		
	HARDWARE RELEASE X		
FINISH	DESIGNER LABRANCHE	28MAR19	SIZE D | FSCM NO 24355 | DRAWING NUMBER 09-051884 | REV C
	PTD ENGINEER TONY HA	28MAR19	
	CHECKER X		
DO NOT SCALE DWG			SCALE 1/1 | SHEET 1 OF 2

ART FILM - fab1

ART FILM - fab2

12 LAYER STACKUP



CHARACTERISTIC IMPEDANCE = 50 OHMS DIFF +/- 10%
ARTWORK LINE WIDTH FOR
IMPEDANCE CONTROLLED LINES = 0.030" FOR L1 AND L12

CHARACTERISTIC IMPEDANCE = 50 OHMS SE +/- 10%
ARTWORK LINE WIDTH FOR
IMPEDANCE CONTROLLED LINES = 0.010" FOR L1 AND L12
IMPEDANCE CONTROLLED LINES = 0.0070" FOR L3 AND L10

DIFFERENTIAL IMPEDANCE = 100 OHMS +/- 10%
ARTWORK LINE WIDTH FOR
IMPEDANCE CONTROLLED LINES = 0.0040" FOR L1 AND L12
IMPEDANCE CONTROLLED LINES = 0.00525" FOR L3 AND L10

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:	TACHYON 100G /ISOLA 370HR
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 BLUE.
SILK SCREEN:	SHALL BE PERMANENT NON-CONDUCTIVE EPOXY INK, COLOR: WHITE SYNTHETIC INKJET PRINTING ALLOWED FOR DENSE BOARDS, COLOR: WHITE
SURFACE FINISH:	SURFACES SHALL HAVE ENIG FINISH PLATED WITH 2-6 MICROINCHES OF IMMERSION GOLD OVER 100-200 MICROINCHES OF ELECTROLESS NICKEL.
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 0.0008 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 0.005 INCH.
9. MINIMUM DESIGN SPACING IS 0.005 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.
15. THRU VIAS FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER, COPLANAR ON BOTH SIDES WITHIN .001 INCH PRIOR TO FINAL PLATING.
16. DUE TO CONGESTION CLIPPING OF SILKSCREEN ALLOWED.

PRIMARY SIDE

ANALOG DEVICES

HSX
DIVISION
804 WOBURN STREET
WILMINGTON, MA 01887

SIZE	FSCM NO	DRAWING NUMBER	REV
D	24355	09-051884	C
SCALE 1/1		SHEET 2 OF 2	

ART FILM - fab2