

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		

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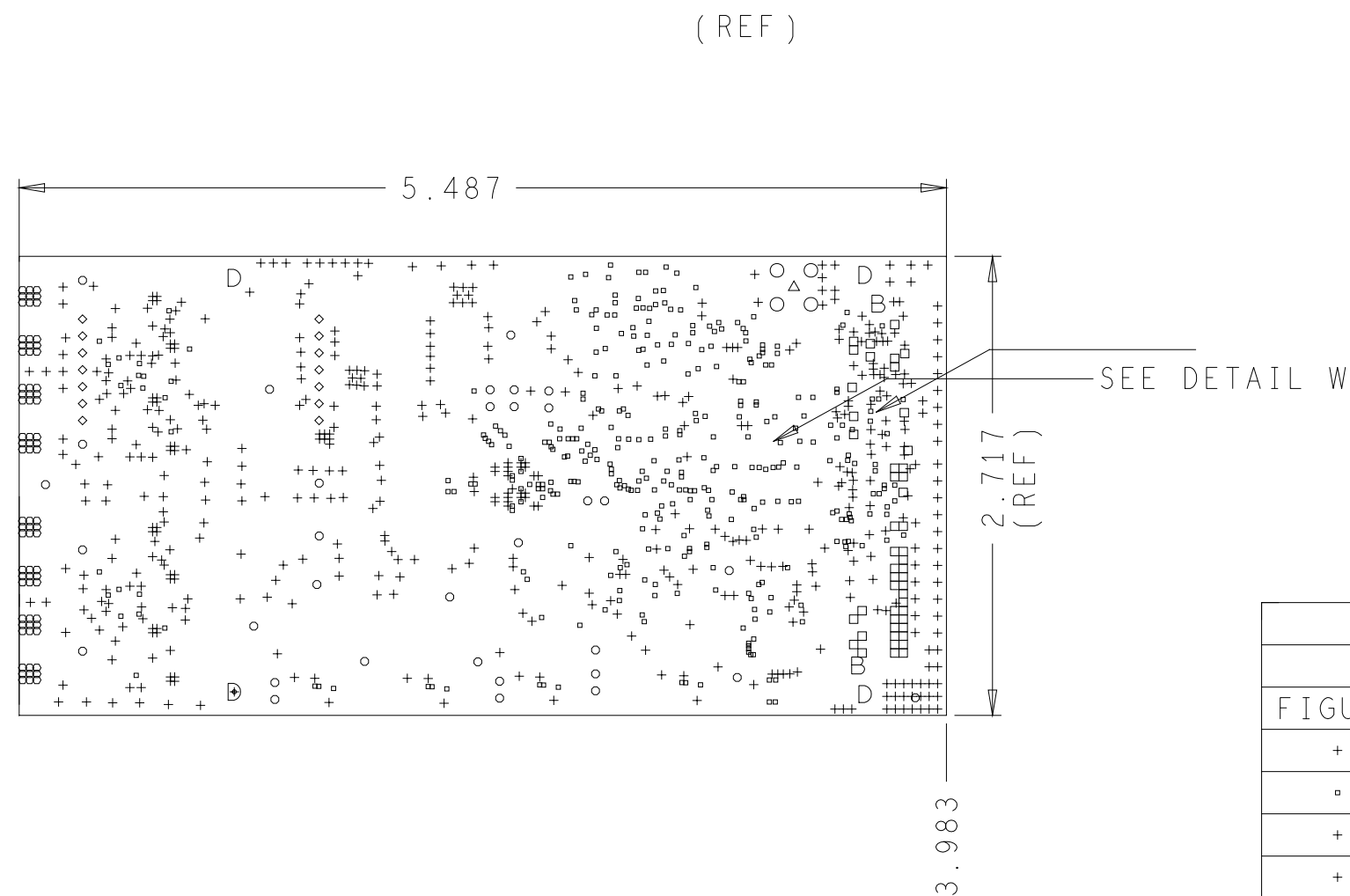
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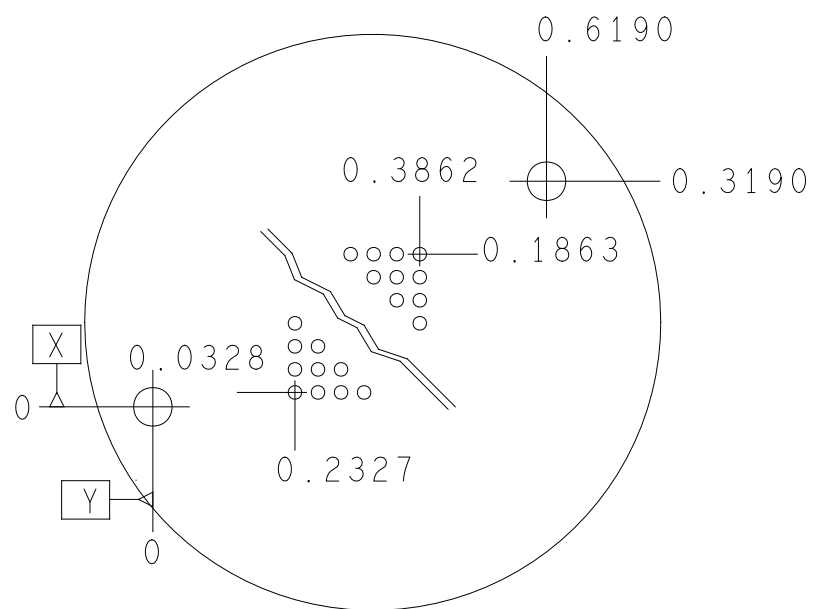
HOLE TOLERANCE

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

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
+	6.0	PLATED	28	DIA MAX
▪	6.0	PLATED	351	DIA MAX
+	8.0	PLATED	34	DIA MAX
+	10.0	PLATED	472	
▪	10.0	PLATED	48	
◦	14.0	PLATED	72	
◦	40.0	PLATED	33	
◊	45.0	PLATED	14	+1/-1
△	55.0	PLATED	1	+2/-0
○	60.0	PLATED	4	
B	50.0	NON-PLATED	2	
D	125.0	NON-PLATED	4	

SEE NOTE 15  
SEE NOTE 16  
SEE NOTE 16

SEE DETAIL W  
"TRUE POSITION"



DETAIL W  
LAND PATTERN PRIMARY SIDE  
SEE NOTE 17 & 18

⊕	⌀.002	X	Y
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SEE DETAIL W "TRUE POSITION"

PRIMARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  TOLERANCES  DECIMALS    FRACTIONS    ANGLES .XX   -.010    --1/32    -- 2 .XXX   -.005 .XXXX   -.0050	APPROVAL		DATE		<div><div><div></div></div><div>ANALOG DEVICES</div></div> <div>WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01887</div>				
	TEMPLATE ENGINEER								
	HARDWARE SERVICES M. VICEDO		02FEB22		TITLE  FABRICATION  EVAL - AD488x FMCZ  CUSTOMER EVAL BOARD Z				
	HARDWARE SYSTEMS								
MATERIAL		TEST ENGINEER							
		COMPONENT ENGINEER A. GIRON		02FEB22					
		TEST PROCESS							
HARDWARE RELEASE K. JABATAN		02FEB22							
FINISH	DESIGNER M. VICEDO		02FEB22		SIZE	FSCM NO	DRAWING NUMBER	REV	
	PTD ENGINEER S. KOWALIK		02FEB22						
	CHECKER				C	24355	09	B	
DO NOT SCALE DWG				SCALE		1/1		SHEET    1 OF 2	

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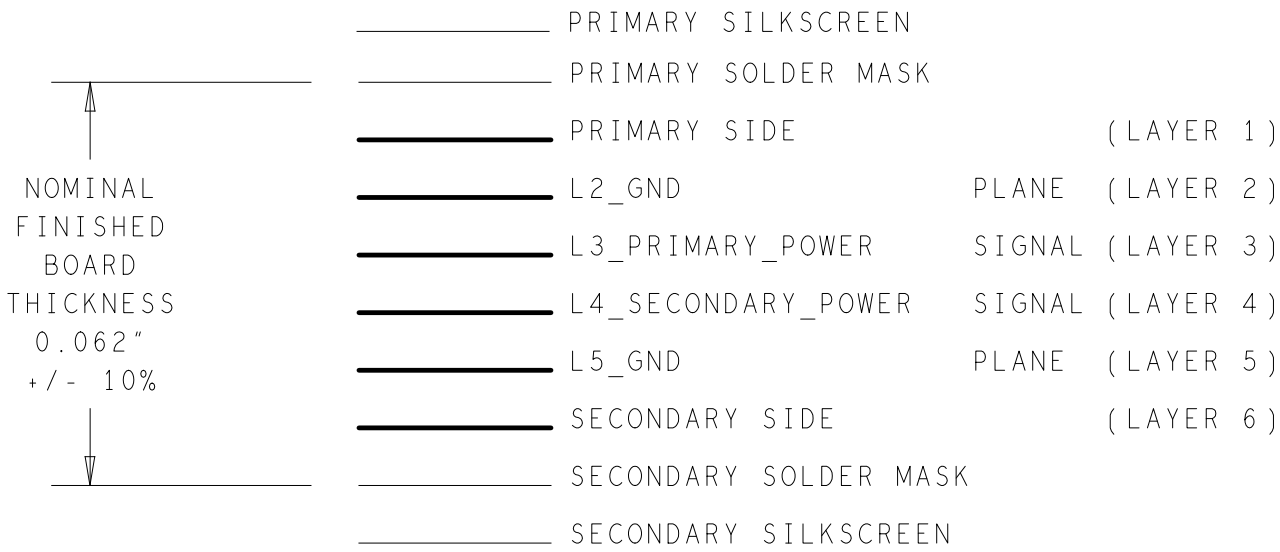
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SPECIFICATIONS:

- ROHS COMPLIANCE NOTE: HOMOGENOUS MATERIALS IN THIS BOARD SHALL BE COMPLIANT THE EU RoHS DIRECTIVE 2002/95/EC
- 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: ISOLA370HR OR S1000-2 OR IT180 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 GREEN.
- 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) 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.

6 LAYER STACKUP



IMPEDANCE TABLE

NOTE: ALL IMPEDANCE TOLERANCE +/-10%  
SE = SINGLE ENDED, DP = DIFFERENTIAL PAIR

LAYER	IMPEDANCE	REFERENCE	LINE WIDTH	SPACE
L1	100 OHMS DP	L2	5MILS	6MILS
L3	100 OHMS DP	L2	5MILS	6MILS
L6	100 OHMS DP	L5	5MILS	6MILS
L1	50 OHMS SE	L2	7MILS	N/A
L3	50 OHMS SE	L2	7MILS	N/A
L6	50 OHMS SE	L5	7MILS	N/A

REQUIREMENTS:

- REFER TO IPC-6010 SERIES (LATEST REV.), CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
- ACCEPTABILITY PER ANALOG DEVICES, INC. SPECIFICATION TST00115, (LATEST REVISION.)
- MODIFICATIONS TO THE ARTWORK ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
- HOLE PATTERN TOLERANCES FOR UNDIMENSIONED HOLES SHALL BE A DIAMETER OF 0.005 INCHES FROM THEIR TRUE POSITION.
- PLATED HOLE WALL THICKNESS SHALL NOT BE LESS THAN 0.001 INCH MINIMUM AVERAGE, WITH NO READING LESS THAN .0008 INCH BY CROSS SECTION.
- HOLE DIAMETERS APPLY AFTER PLATING.
- FINISHED CONDUCTOR WIDTHS SHALL NOT BE REDUCED FROM THE NOMINAL INDICATED ON THE MASTER PATTERN, BY MORE THAN THE CONDUCTOR THICKNESS.
- MINIMUM DESIGN LINE WIDTH IS .005 INCH.
- MINIMUM DESIGN SPACING IS .0035 INCH.
- NON-FUNCTIONAL PAD REMOVAL FROM INNER SIGNAL LAYERS MAY BE PERFORMED AFTER CUSTOMER APPROVAL.
- 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.)
- THIEVING MAY BE ADDED TO COMPENSATE FOR LOW COPPER DENSITY AREAS ON THIS DESIGN ONLY AFTER REVIEW AND APPROVAL FROM THE CUSTOMER:
  - THIEVING TO CARD EDGE, FIDUCIALS, NON-PLATED THROUGH HOLES, ALL OTHER FEATURES TO BE 0.200 INCH MINIMUM.
  - THERE SHALL BE NO THIEVING IN ANY AREAS FREE OF SOLDER MASK OR INTERNAL COPPER PLANES.
- MFGR. TO LEGIBLY ETCH OR STAMP/SCREEN WITH PERMANENT NON-CONDUCTIVE INK ON SECONDARY SIDE IN A CLEAR AREA UNLESS OTHERWISE INDICATED;
  - U.L. CODE-FLAMMABILITY RATING
  - DATE CODE (STAMP).
  - LOT NUMBER
  - MFGR LOGO
  - SUCCESSFUL ELECTRICAL TEST.
- REPAIRS PER IPC-7711/21 (LATEST REV.) ARE ALLOWED.
- THRU VIAS FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER. COPLANAR ON PRIMARY SIDE WITHIN .001 INCH PRIOR TO FINAL PLATING.
- THRU VIAS FILLED WITH NON-CONDUCTIVE EPOXY AND PLATED OVER.
- CRITICAL DRILLED HOLE TO IMAGED FEATURE TRUE POSITION OF +/- .001 INCH FROM PRIMARY SIDE COPPER IS REQUIRED. HOLE SIZE AND POSITION MUST BE VERIFIED AND MEASURED AGAINST THE VALUES SPECIFIED IN DETAIL W. SEE DRILL TABLE "TRUE POSITION", 33 MIL NON-PLATED (QTY 2) TO BE DRILLED FROM THE PRIMARY SIDE OF THE BOARD IN A SECONDARY DRILLING OPERATION.
- INCLUDE IN CERTIFICATE OF COMPLIANCE AND QA REPORT THE MEASUREMENT FOR CRITICAL HOLE AND SLOT FINISHED SIZE AND POSITION SPECIFIED IN DETAIL W.
- BOARDS TO BE SHIPPED IN ARRAY AND KEEP INTACT. PANEL TO BE SUBJECTED TO CUSTOMER'S APPROVAL PANELED SOLDER PASTE STENCIL SHOULD BE SENT TO THE CUSTOMER.

		ANALOG DEVICES		WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01887	
		SIZE	FSCM NO	DRAWING NUMBER	REV
C		24355	09-083437	B	
SCALE		1 / 1		SHEET 2 OF 2	

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