

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
D	NEW POWER SEGMENT CIRCUIT ADDED	06JUL18	S.B.
E	CHANGES PER ECR 095319	01JUN20	B.H.

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 .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 3. COLOR BLUE.

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

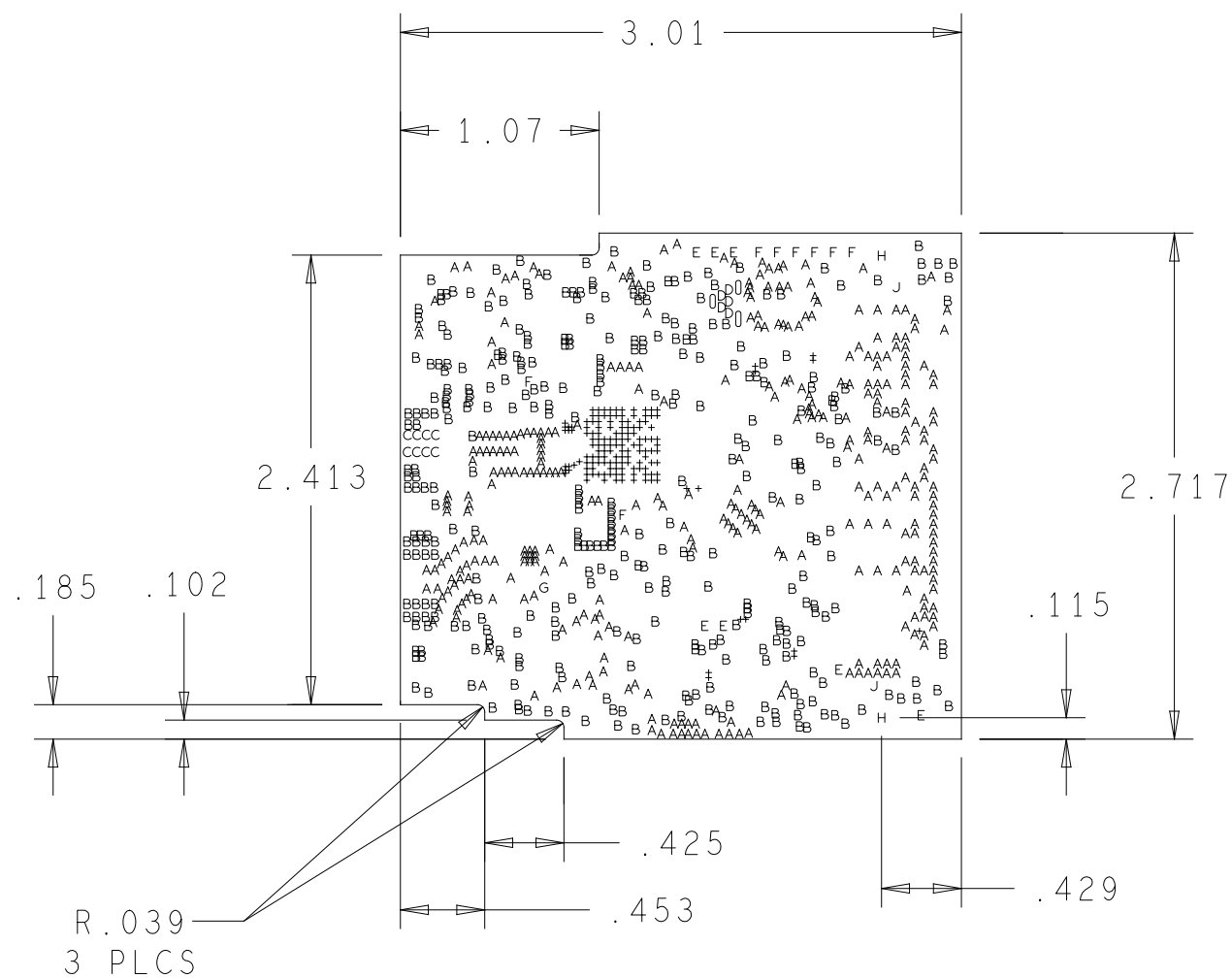
SURFACE FINISH; ENIG (Electroless Nickel/Immersion Gold)
PER IPC-4552 LATEST REVISION

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 IP-6100 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 .005 INCH.
9. MINIMUM DESIGN SPACING IS .004 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, MFRG. 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. MFRG. 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
 - D. MFRG LOGO
 - B. DATE CODE (STAMP).
 - E. SUCCESSFUL ELECTRICAL TEST.
 - C. LOT NUMBER
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. INDICATED VIAS TO BE NON-CONDUCTIVE EPOXY FILLED, AND GROUND FLUSH PRIOR TO OVER PLATING.
16. BOARDS TO BE PANELIZED AND SHIPPED INTACT.
17. THE FOLLOWING TWO TRACES ON THE PRIMARY SIDE (LAYER) MUST FINISH AT THE SPECIFIED LINE WIDTHS AFTER ALL PROCESSES.
TRACE BETWEEN J23.1 & C14.1 TO FINISH AT .020" +/- .001"
TRACE BETWEEN C14.2 & T1.3 TO FINISH AT .018" +/- .001"



12 LAYER STACKUP

Layer	Material	Thickness (MIL)	Material	Thickness (MIL)
1	PRIMARY SILKSCREEN		PRIMARY SILKSCREEN	
2	PRIMARY SOLDER MASK		PRIMARY SOLDER MASK	
3	PRIMARY SIDE		PRIMARY SIDE	
4	GROUND PLANE		GROUND PLANE	
5	INTERNAL SIGNAL		INTERNAL SIGNAL	
6	GROUND PLANE		GROUND PLANE	
7	POWER PLANE		POWER PLANE	
8	POWER PLANE		POWER PLANE	
9	GROUND PLANE		GROUND PLANE	
10	INTERNAL SIGNAL		INTERNAL SIGNAL	
11	GROUND PLANE		GROUND PLANE	
12	SECONDARY SIDE		SECONDARY SIDE	
13	SECONDARY SOLDER MASK		SECONDARY SOLDER MASK	
14	SECONDARY SILKSCREEN		SECONDARY SILKSCREEN	

NOMINAL
FINISHED
BOARD
THICKNESS
0.063*
+/- .007

CHARACTERISTIC IMPEDANCE = 50 OHMS +/- 10%
ARTWORK LINE WIDTH FOR SINGLE ENDED
IMPEDANCE CONTROLLED LINES = 0.008" LAYER 1 & 12



DIFFERENTIAL IMPEDENCE 100 OHMS +/- 10%
LINE WIDTH/SPACE FOR DIFFERENTIAL
IMPEDANCE CONTROLLED LINES = 0.005" LAYERS 1

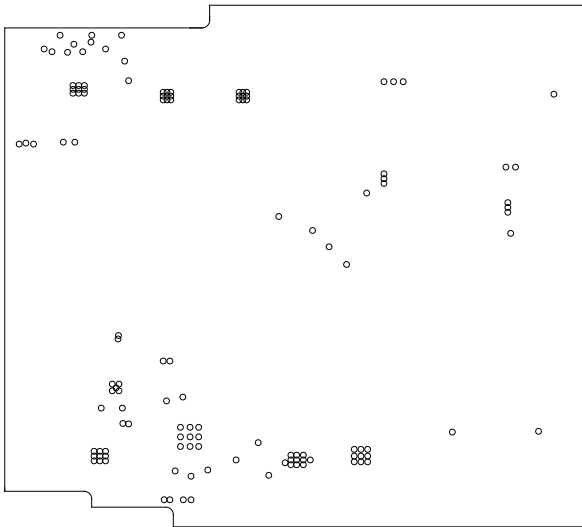
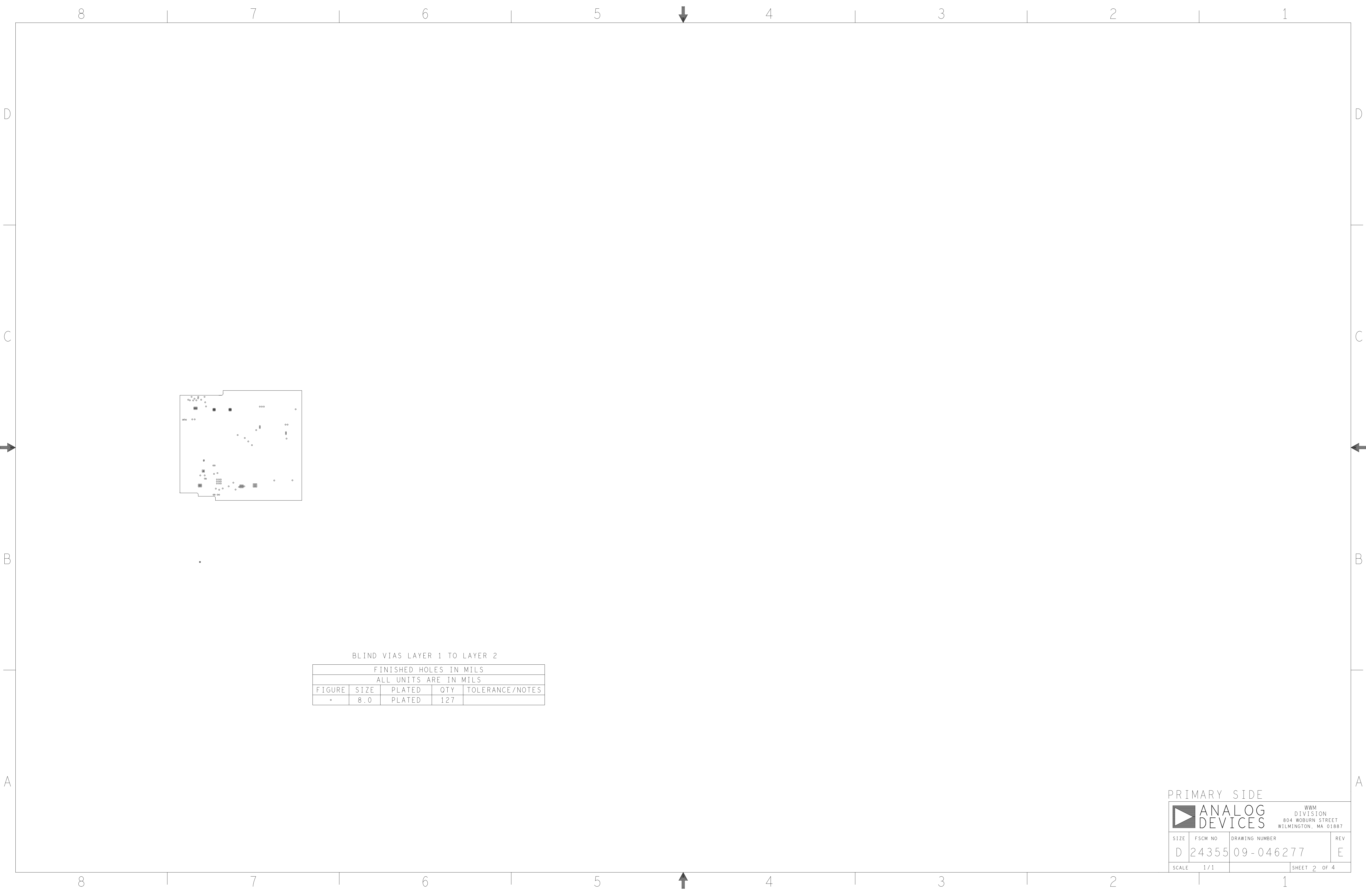
HOLE TOLERANCE

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

FINISHED HOLES IN MILS				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
A	5.0	PLATED	145	SEE NOTE 15
A	10.0	PLATED	342	SEE NOTE 15
B	12.0	PLATED	337	SEE NOTE 15
C	16.0	PLATED	8	
D	28.0	PLATED	5	
E	40.0	PLATED	7	
F	45.0	PLATED	8	
G	63.0	PLATED	1	
H	105.0	PLATED	2	
J	50.0	NON-PLATED	2	
Ø	75.0x28.0	PLATED	2	
Ø	88.0x28.0	PLATED	1	

PRIMARY SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			APPROVAL	DATE	<div>ANALOG DEVICES</div> <div>WWW DIVISION 804 WOBURN STREET WILMINGTON, MA 01887</div>			
TOLERANCES			TEMPLATE ENGINEER	d dMM yy				
DECIMALS	FRACTIONS	ANGLES	HARDWARE SERVICES X	d dMM yy	<div>TITLE</div> <div>FABRICATION</div> <div>AD916X - FMCC - EBZ</div>			
XX . . .010	--1/32	-- 2	HARDWARE SYSTEMS X	d dMM yy				
XXX . . .005								
XXXX . . .0050								
MATERIAL			TEST ENGINEER X	d dMM yy				
			COMPONENT ENGINEER X	d dMM yy				
			TEST PROCESS X	d dMM yy				
			HARDWARE RELEASE X	d dMM yy				
FINISH			DESIGNER P ALONGI	06JULY18				SIZE
			PID ENGINEER X	d dMM yy	D	24355	09-046277	E
			CHECKER X	d dMM yy				
DO NOT SCALE DWG					SCALE	1 / 1	SHEET 1 OF 4	

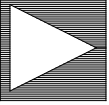


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BLIND VIAS LAYER 1 TO LAYER 2

FINISHED HOLES IN MILS				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
•	8.0	PLATED	127	

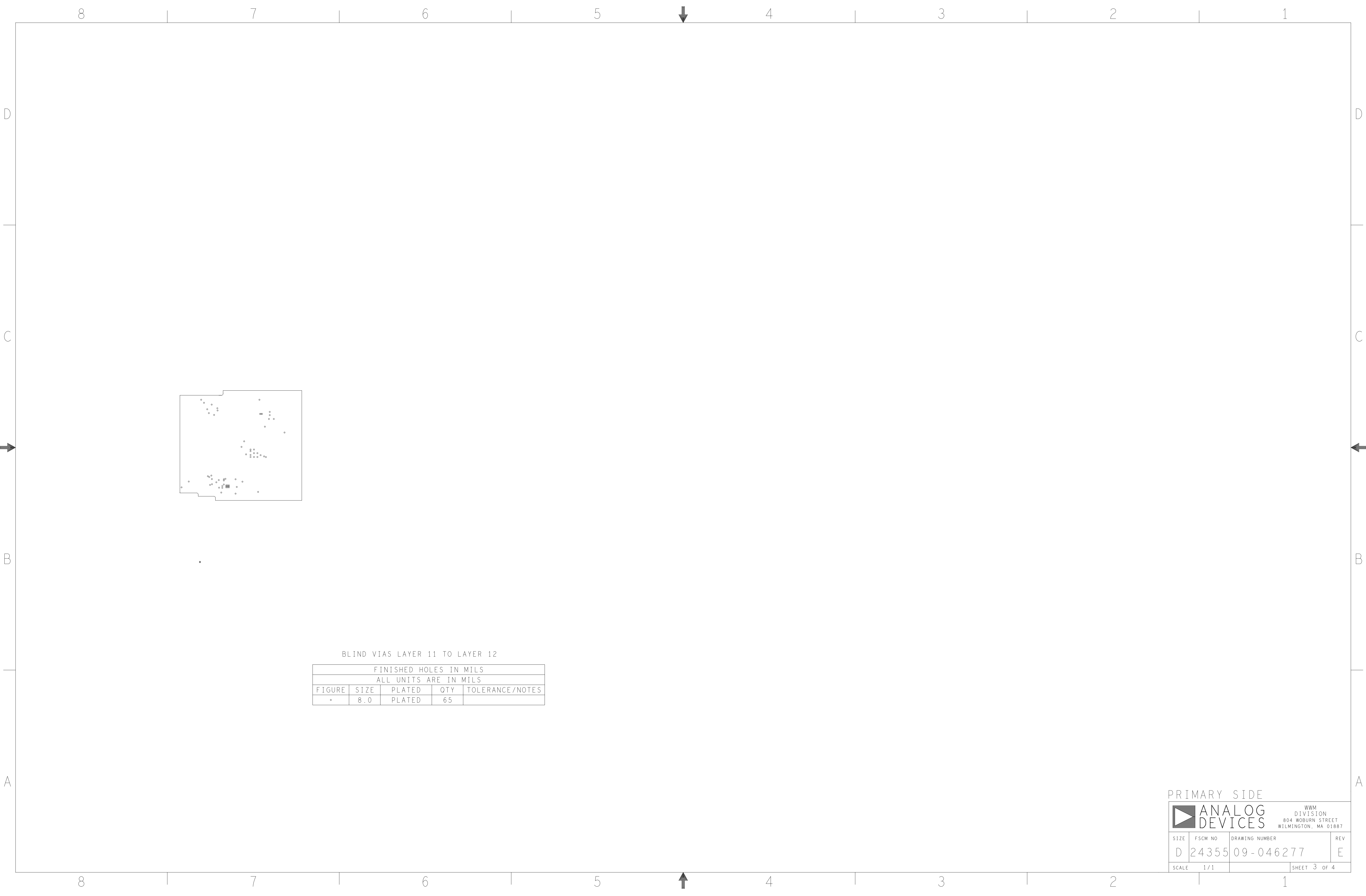
PRIMARY SIDE



**ANALOG
DEVICES**

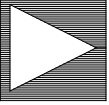
WWM
DIVISION
804 WOBURN STREET
WILMINGTON, MA 01887

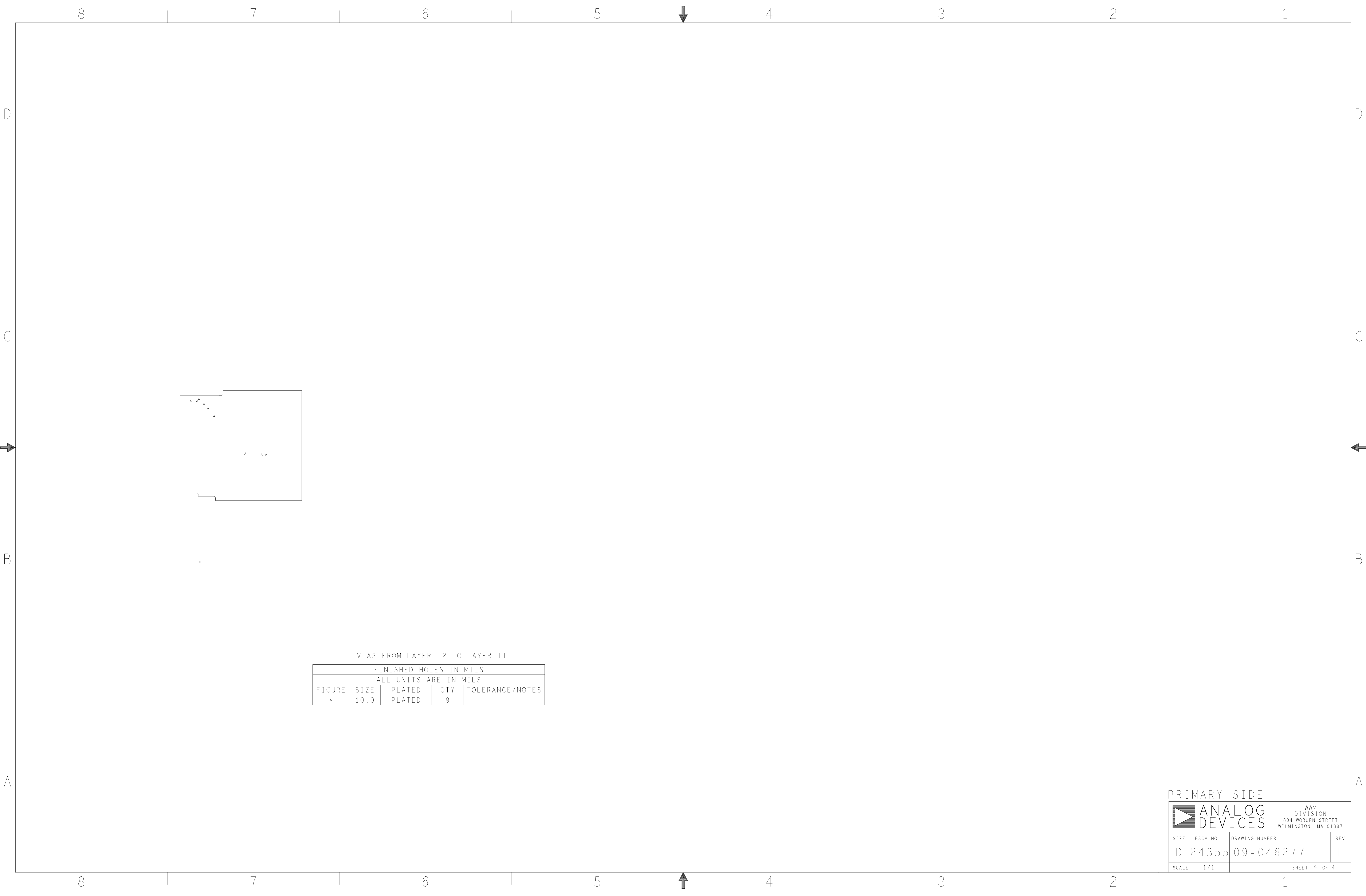
SIZE D	FSCM NO 24355	DRAWING NUMBER 09-046277	REV E
SCALE 1/1		SHEET 2 OF 4	



BLIND VIAS LAYER 11 TO LAYER 12				
FINISHED HOLES IN MILS				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
•	8.0	PLATED	65	

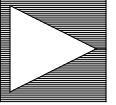
PRIMARY SIDE

	ANALOG DEVICES	WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01887	REV
SIZE	FSCM NO	DRAWING NUMBER	REV
D	24355	09-046277	E
SCALE	1/1	SHEET 3 OF 4	



VIAS FROM LAYER 2 TO LAYER 11				
FINISHED HOLES IN MILS				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
A	10.0	PLATED	9	

PRIMARY SIDE

ANALOG
DEVICES

WWM
DIVISION
804 WOBURN STREET
WILMINGTON, MA 01887

SIZE	FSCM NO	DRAWING NUMBER	REV
D	24355	09-046277	E
SCALE	1/1	SHEET 4 OF 4	