

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	30NOV17	MEHMET DOGAN
B	CHANGED PER ECR-075322	31JAN18	MEHMET DOGAN
C	CHANGED PER ECR-090768	25OCT19	MEHMET DOGAN

**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;** RO4003C 8 MIL / ISOLA 370HR

**CLADDING;** EXTERNAL LAYERS .5 OZ. COPPER, OVERPLATE TO 2.2MIL. 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. LPI SOLDERMASK BOTH SIDE. COLOR: GREEN REGISTRATION: +/- .0005 MAX.

**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

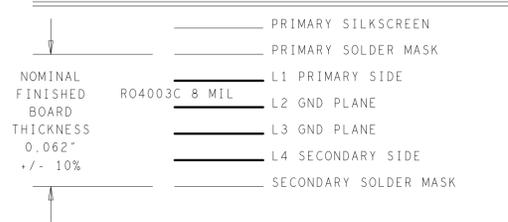
**INTENTIONAL SHORTS;** IF SUPPLIED DATA INCLUDES A FILE "READ\_ME.2", THEN INTENTIONAL NET SHORTS EXIST. CUSTOMER REVIEW AND APPROVAL IS REQUIRED IF SUPPLIED DATA REPORTS ANY CONDITION THAT DOES NOT MATCH "READ\_ME.2" FILE PROVIDED.

**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:**

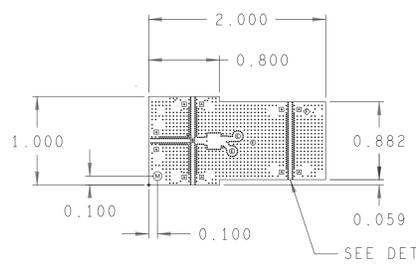
- REFER TO IPC-6010 SERIES (LATEST REV.), CLASS 2 FOR FABRICATION UNLESS OTHERWISE SPECIFIED.
- ACCEPTABILITY PER ANALOG DEVICES, INC. SPECIFICATION TST00115. (LATEST REVISION.)
- MODIFICATIONS TO THE ARTWORK ARE NOT ALLOWED WITHOUT WRITTEN AUTHORIZATION.
- HOLE PATTERN TOLERANCES FOR UNDIMENSIONED HOLES 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 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 8 MIL.
- MINIMUM DESIGN SPACING IS 7 MIL.
- 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, MFR. 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.
- MFR. 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
  - MFR LOGO
  - SUCCESSFUL ELECTRICAL TEST.
- 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.
- CRITICAL LINE WIDTH = 14 MIL +/- 0.6 MIL ON PRIMARY SIDE. ADJUST PROCESS TO ACHIEVE WIDTH. SEE DETAIL B. CRITICAL SPACING WIDTH = 7 MIL +/- 0.6 MIL ON PRIMARY SIDE. ADJUST PROCESS TO ACHIEVE WIDTH. SEE DETAIL B. CRITICAL TAPER LINE WIDTH TOLERANCE = +/- 0.6 MILS. ADJUST PROCESS ACCORDINGLY. SEE DETAIL B. CRITICAL TAPER LINE GAP TOLERANCE = +/- 0.6 MILS. ADJUST PROCESS ACCORDINGLY. SEE DETAIL B. RECORD RF LINE WIDTHS AND SPACINGS SHOWN IN DETAIL B ON A FIRST ARTICLE REPORT. ONE SAMPLE FROM EACH 10 BOARDS AND MARK THEM BY GIVING NUMBERS.
- VIAS INDICATED TO BE FILLED WITH NON-CONDUCTIVE EPOXY GROUND FLUSH AND PLATED OVER. COPLANAR PLATING ON BOTH SIDES. PRIMARY SIDE DIMPLE WITHIN <1 MIL PRIOR TO FINAL PLATING. BUMP TYPE FILLED VIAS (PROTRUSIONS) ARE NOT ALLOWED.
- CONNECTOR AREAS TO BE EDGE PLATED, PLATING MUST CONNECT ALL FOUR LAYERS. EDGE PLATING MUST BE REMOVED FOR CENTER CONNECTOR AREAS. SEE DETAIL C. BOARD CUTTING SHOULD BE CONTROLLED TO GET THE DESIRED DIMENSIONS SHOWN IN DETAIL B.

**4 LAYER STACKUP**

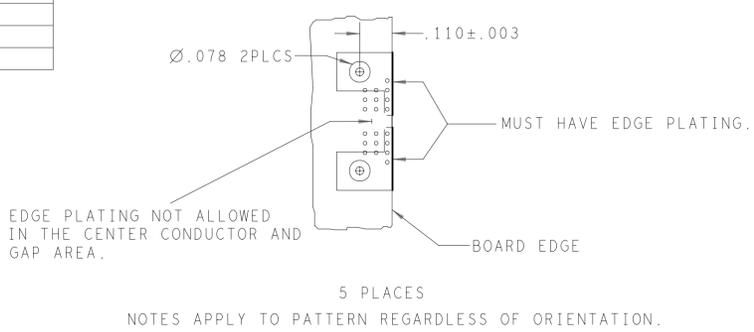


**HOLE TOLERANCE**  
UNLESS SPECIFIED  
PLATED: +/- 3 MIL  
NON PLATED: +/- 3 MIL

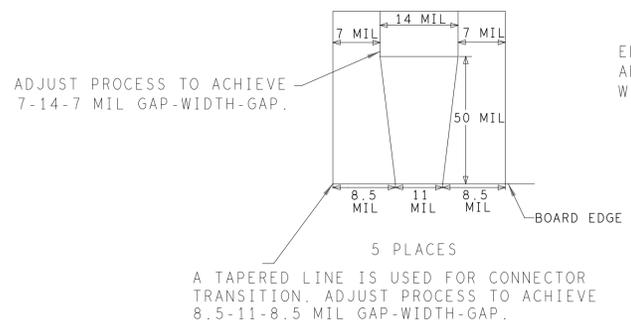
FINISHED HOLES IN MILS				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	PLATED	QTY	TOLERANCE/NOTES
-	10.0	PLATED	28	SEE NOTE 16
-	12.0	PLATED	1250	SEE NOTE 16
⊙	63.0	PLATED	3	
⊙	67.0	PLATED	10	
⊙	78.0	NON-PLATED	10	
⊙	100.0	NON-PLATED	1	



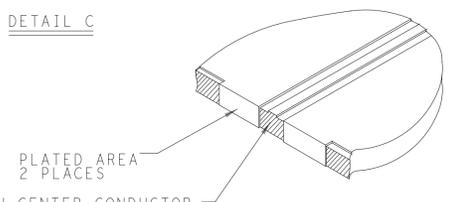
**DETAIL "A"**  
SW1492-04A-5-DETAIL



**DETAIL B**



**DETAIL C**



EDGE PLATING NOT ALLOWED IN CENTER CONDUCTOR AND GAP AREA. EDGE PLATING SHOULD BE IN LINE WITH TOP ETCH.

**PRIMARY SIDE**

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES .XX .010 .1/32 .2 .XXX .005 .1/32 .2 .XXXX .0050	APPROVAL	DATE	WWM DIVISION 804 WOBURN STREET WILMINGTON, MA 01887			
	TEMPLATE ENGINEER	25OCT19				
MATERIAL	HARDWARE SERVICES	TEST ENGINEER	TITLE FABRICATION ADRF5300/5301-EVAL Z			
	HARDWARE SYSTEMS				COMPONENT ENGINEER	
FINISH	DESIGNER	DATE	SIZE	FSCM NO	DRAWING NUMBER	REV
	MEHMET DOGAN	25OCT19	D	24355	09-048188	C
DO NOT SCALE DWG	CHECKER	DATE	SCALE	1/1	SHEET 1 OF 1	
	E. ESCALANTE	25OCT19				