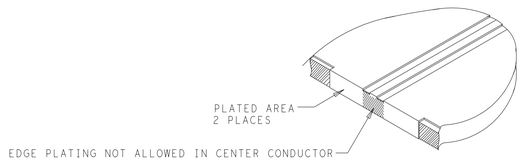
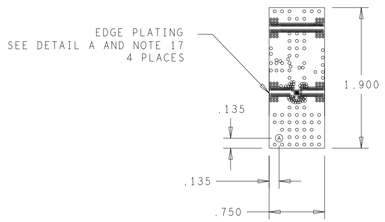
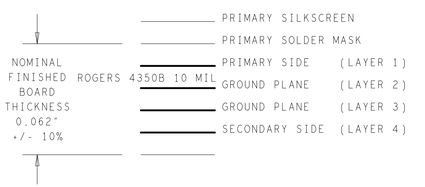
| REVISIONS | | | |
|---|---|---|---|
| REV | DESCRIPTION | DATE | APPROVED |
| A | INITIAL RELEASE | 01NOV19 | H.N. |
| | | | |




DETAIL A




## 4 LAYER STACKUP




CHARACTERISTIC IMPEDANCE = _____
ARTWORK LINE WIDTH FOR
IMPEDANCE CONTROLLED LINES = _____

SPECIFICATIONS:

MATERIALS: 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 UNLESS OTHERWISE INDICATED.

MATERIAL FAMILY: ROGERS 4350B 10 MIL/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 PRIMARY SIDE 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.

HOLE TOLERANCE

UNLESS SPECIFIED
PLATED: +/- 3 MILS
NON PLATED: +/- 5 MIL

| FINISHED HOLES IN MILS | | | | |
|---|---|---|---|---|
| ALL UNITS ARE IN MILS | | | | |
| FIGURE | SIZE | PLATED | QTY | TOLERANCE/NOTES |
| + | 8.0 | PLATED | 38 | SEE NOTE 15 |
| ▲ | 10.0 | PLATED | 257 | MAX |
| • | 14.0 | PLATED | 48 | MAX |
| ○ | 14.0 | PLATED | 116 | |
| ⊗ | 50.0 | NON-PLATED | 1 | |

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 .010 INCH.
9. MINIMUM DESIGN SPACING IS .006 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 PRIMARY 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. INDICATED HOLES ARE TO BE NON-CONDUCTIVE EPOXY FILLED AND GROUND FLUSH TO 3 MILS BELOW SURFACE PRIOR TO PLATING OVER.
16. CRITICAL LINE WIDTH 0.018 +/- 0.001" PRIMARY SIDE. ADJUST PROCESS TO ACHIEVE WIDTH.
17. EDGE PLATING TO CONNECT OUTER AND INTERNAL GROUND LAYERS FOR THE WIDTH OF THE CONNECTORS.

PRIMARY SIDE

| | | | |
|---|---|---|---|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES<br>TOLERANCES<br>DECIMALS FRACTIONS ANGLES<br>.XX +-.010 +-1/32 +- 2<br>.XXX +-.005<br>.XXXX +-.0050 | APPROVAL | DATE | ANALOG DEVICES<br>RFMG DIVISION<br>804 WOBURN STREET<br>WILMINGTON, MA 01887 |
| | TEMPLATE ENGINEER X | ddMMMyy | |
| | HARDWARE SERVICES X | ddMMMyy | |
| | HARDWARE SYSTEMS X | ddMMMyy | |
| MATERIAL | TEST ENGINEER X | ddMMMyy | TITLE<br>FABRICATION<br>ADL8104 EVAL BDRD |
| | COMPONENT ENGINEER X | ddMMMyy | |
| | TEST PROCESS X | ddMMMyy | |
| | HARDWARE RELEASE X | ddMMMyy | |
| FINISH | DESIGNER LABRANCHE | 01NOV19 | SIZE D / FSCM NO 24355 / DRAWING NUMBER 09-060082 / REV A |
| | PTD ENGINEER H.NGUYEN | 01NOV19 | |
| | CHECKER X | ddMMMyy | |
| DO NOT SCALE DWG | | | SCALE 1/1 / SHEET 1 OF 1 |

ART FILM - fab1