

8 7 6 5 4 3 2 1

NOTES (UNLESS OTHERWISE SPECIFIED):  
1. THIS DRAWING SPECIFIES THE REQUIREMENTS FOR A PRINTED WIRING BOARD IN ACCORDANCE WITH SPECIFICATION IPC-A-600 CLASS 2 (LATEST REVISION).  
2. THE PWB MUST BE LEAD FREE ASSEMBLY PROCESS COMPATIBLE AND MUST BE ABLE TO HANDLE A MINIMUM OF 5 CYCLES AT 260 DEGREES CELSIUS FOR 10 SECONDS.  
3. BASE MATERIAL - LAMINATE AND PREPREG SHALL MEET IPC-4101B-24, 83 or 98  
Tg - MUST BE GREATER THAN OR EQUAL TO 150 DEGREES CELSIUS.  
Td - MUST BE GREATER THAN OR EQUAL TO 330 DEGREES CELSIUS.  
4. COPPER FOIL WEIGHT - SEE STACKUP DETAIL 'A'  
5. CHARACTERISTIC IMPEDANCE - NONE  
6. MINIMUM CONDUCTIVE WIDTH/SPACING TO BE .010"/.006"  
7. PLATING FINISH - BOTH SIDES ENIG (ELECTROLESS NICKEL IMMERSION GOLD):  
.05080-.232 MICRON (2-8 MICROINCH) OF GOLD OVER  
2.540-6.350 MICRON (100-250 MICROINCH) OF NICKEL.  
8. ALL THROUGH HOLE VIAS MAY BE PLATED SHUT.  
9. SOLDERMASK - GREEN COLOR (TAIYO OR EQUIVALENT), BOTH SIDES.  
MODIFICATION OF SOLDERMASK IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM FREESCALE.  
10. SILKSCREEN - WHITE EPOXY INK, BOTH SIDES. NO SILK ON PADS.  
11. ELECTRICAL TEST - 100% IPCD354.  
12. PRINTED WIRING BOARD IS TO BE INDIVIDUALLY BAGGED.  
13. DRC'S MUST BE RUN ON THE GERBER BEFORE BUILDING BOARDS.  
UNLESS PRIOR APPROVAL IS GIVEN IN WRITING BY FREESCALE.  
14. TEARDROPS MAYBE ADDED AT THE FAB HOUSE TO ALL SIGNAL LAYERS.  
15. TWO SOLDER SAMPLES TO BE PROVIDED.  
16. BASIC GRID INCREMENT AT 1:1 IS .0001.  
17. SUPPLIER MARKINGS - ON SOLDER SIDE ONLY, WHERE SHOWN.  
MUST BE UL RECOGNIZED AND MUST HAVE AN ID THAT CONFORMS TO UL94V-0  
18. THE PWB WILL BE MARKED AS LEAD FREE BY USE OF AN INK STAMP (Pb)  
19. THE PWB WILL BE MARKED AS LEAD FREE PROCESS COMPATIBLE BY USE OF AN INK STAMP (260°C)  
20. ALL PLATED AND NON-PLATED THROUGH HOLES ARE TO BE DRILLED AT PRIMARY DRILL STEP.  
ALL HOLE LOCATION TOLERANCES ARE TO BE +/- .002 IN REFERENCE TO THE PRIMARY DATUM.  
21. FINISHED PCB MUST BE PANELIZED FOR ASSEMBLY ACCORDING TO CONTRACT MANUFACTURERS REQUIREMENTS.  
THE ADDITION OF .25" RAILS AND .125" NON-PLATED TOOLING HOLES ARE AT THE DISCRETION OF CONTRACT MANUFACTURER. PANELIZATION MUST BE APPROVED BY CONTRACT MANUFACTURER.  
22. COPPER WEIGHT 1 OZ OUTER LAYERS, 0.5 OZ INTERNAL LAYERS  
23. MALE HEADERS J1, J2, J3, AND J4 SHOULD BE MOUNTED ON THE BOTTOM LAYER

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
X1	1	ORIGINAL RELEASE	01-14-15	MD
A	1	FINAL RELEASE	04-14-15	MD

DRILL CHART: TOP to BOTTOM  
ALL UNITS ARE IN MILS

FIGURE	SIZE	TOLERANCE	PLATED	QTY
+	10.0	+0.0/-10.0	PLATED	201
Ø	40.0	+3.0/-3.0	PLATED	93
□	51.0	+3.0/-3.0	PLATED	4
⊖	116.0	+3.15/-0.0	PLATED	4

PRIMARY DATUM  
GRID ORIGIN

FINISHED Cu WEIGHT

DETAIL A LAYER STACKUP SCALE: NONE	FINISHED Cu WEIGHT
LAYER 1 COMPONENT SIDE	1.0 oz.
LAYER 2 GROUND PLANE	0.5 oz.
LAYER 3 GROUND PLANE	0.5 oz.
LAYER 4 GROUND PLANE	1.0 oz.

APPROVALS

APPROVALS	DATE
DESIGN ENGINEER MAREIKE DAVIS	04-14-15
DESIGN CHECKER MAREIKE DAVIS	04-14-15
DESIGN ENGINEER MAREIKE DAVIS	04-14-15

6501 WILLIAM CANNON DRIVE WEST AUSTIN, TEXAS 78735 USA

PRINTED WIRING BOARD  
FRDM-3x931x-EVB

SCALE 1/1 DO NOT SCALE DRAWING SHEET 1 OF 1

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