

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

INDIVIDUAL GROUND PLANES ARE NECESSARY FOR PROPER NOISE REJECTION AND STABILITY OF THESE CIRCUITS

NOTE: The ground reference per circuit block is unique. The most negative connection of CELLO is the ground reference for each chip.

DO NOT connect ground references from different chips

TIE POINTS are to be shorted with a copper trace after routing

Only the ground reference CELLO of circuit 1 is safe to connect non-isolated test equipment grounds.

#3 - Remove these components to stack north  
#4 - Populate these components to stack north  
Use 1k Resistors or adjust as needed  
Header - Molex 90131-0765

CAPACITORS C116, C120, C122, C123 ARE USED IN DESIGNS THAT HAVE HIGH NOISE LEVELS. USE 22pF - 100pF CAPS AS NEEDED

- NORTH
- 1 - ALERT
  - 2 - DRDY
  - 3 - FAULT
  - 4 - CONV
  - 5 - CELL6
  - 6 - CELL6
  - 7 - SCLK
  - 8 - CS
  - 9 - SDO
  - 10 - SDI

CAUTION  
HIGH VOLTAGE

#4 NORTH

LOCATE R152, R153, R154, R155  
CLOSE TO THE MOST NORTH IC

LOCATE R140, R141, R42, R143  
CLOSE TO THE MOST SOUTH IC

LOCATE R93, R94, R95, R96  
CLOSE TO THE MOST NORTH IC

LOCATE R81, R82, R83, R84  
CLOSE TO THE MOST SOUTH IC

CAPACITORS C6, C7, C10, C15 ARE USED IN DESIGNS THAT HAVE HIGH NOISE LEVELS. USE 22pF - 100pF CAPS AS NEEDED

#1 - Populate these components to stack south  
Use 1k Resistors or adjust as needed  
Header - Molex 90131-0765  
#2 - Remove these components to stack south

CAUTION  
HIGH VOLTAGE

SOUTH

- 1 - ALERT
- 2 - DRDY
- 3 - FAULT
- 4 - CONV
- 5 - VSS
- 6 - VSS
- 7 - SCLK
- 8 - CS
- 9 - SDO
- 10 - SDI

DRAWN: GORDON VARNEY	DATED: 6/30/2010
CHECKED:	DATED:
QUALITY CONTROL:	DATED:
RELEASED:	DATED:

COMPANY: Texas Instruments			
TITLE: bq76PL536EVM-3 Stack Design			
Industrial Grade			
CODE:	SIZE:	DRAWING NO:	REV:
	D	HPA507	A
SCALE:		03/23/2010	SHEET: 1 OF 5

FEET/Mounting holes

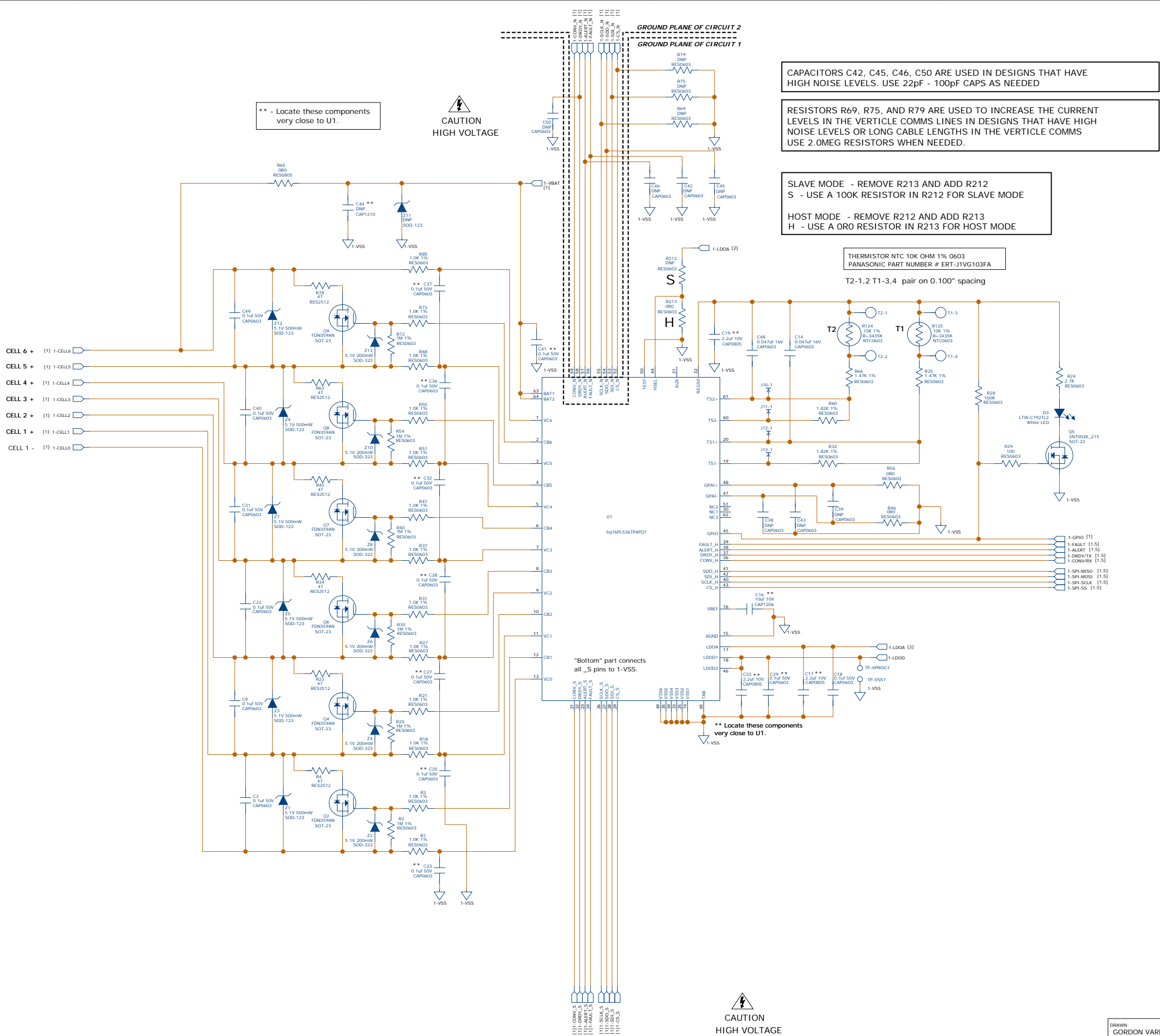
- X1
- X2
- X3
- X4

FIDUCIAL\_MARK  
X1 TPA  
FIDUCIAL\_MARK  
X2 TPB  
FIDUCIAL\_MARK  
X3 TPC  
FIDUCIAL\_MARK  
X4 TPD

SHUNT, ECON, PHBR 15 AU, BLACK  
AMP part number# 382811-6  
Distributor - Digkey

5VDC @200mA

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

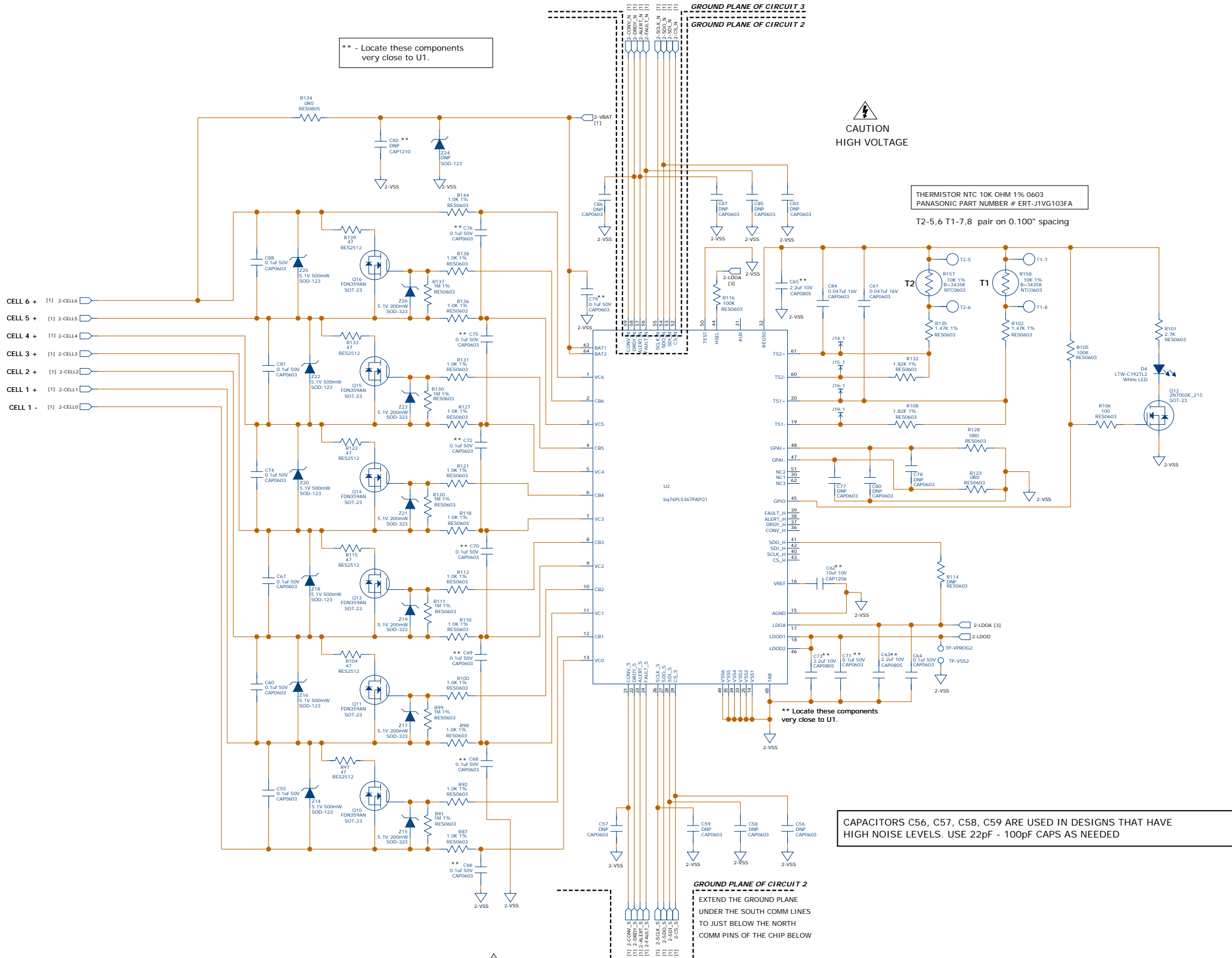


ALL RESISTERS 5% UNLESS NOTED

Drawing and circuit design subject to change without notice.  
Copyright (c) 2010 Texas Instruments, Inc. All rights reserved.

COMPANY:		Texas Instruments	
TITLE:		bq76PL536EVM-3 Stack Design Commercial Grade	
CODE:	SIZE:	DRAWING NO:	REV:
	D	CIRCUIT 1 HPA507	A
SCALE:		SHEET: 2 OF 5	

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:



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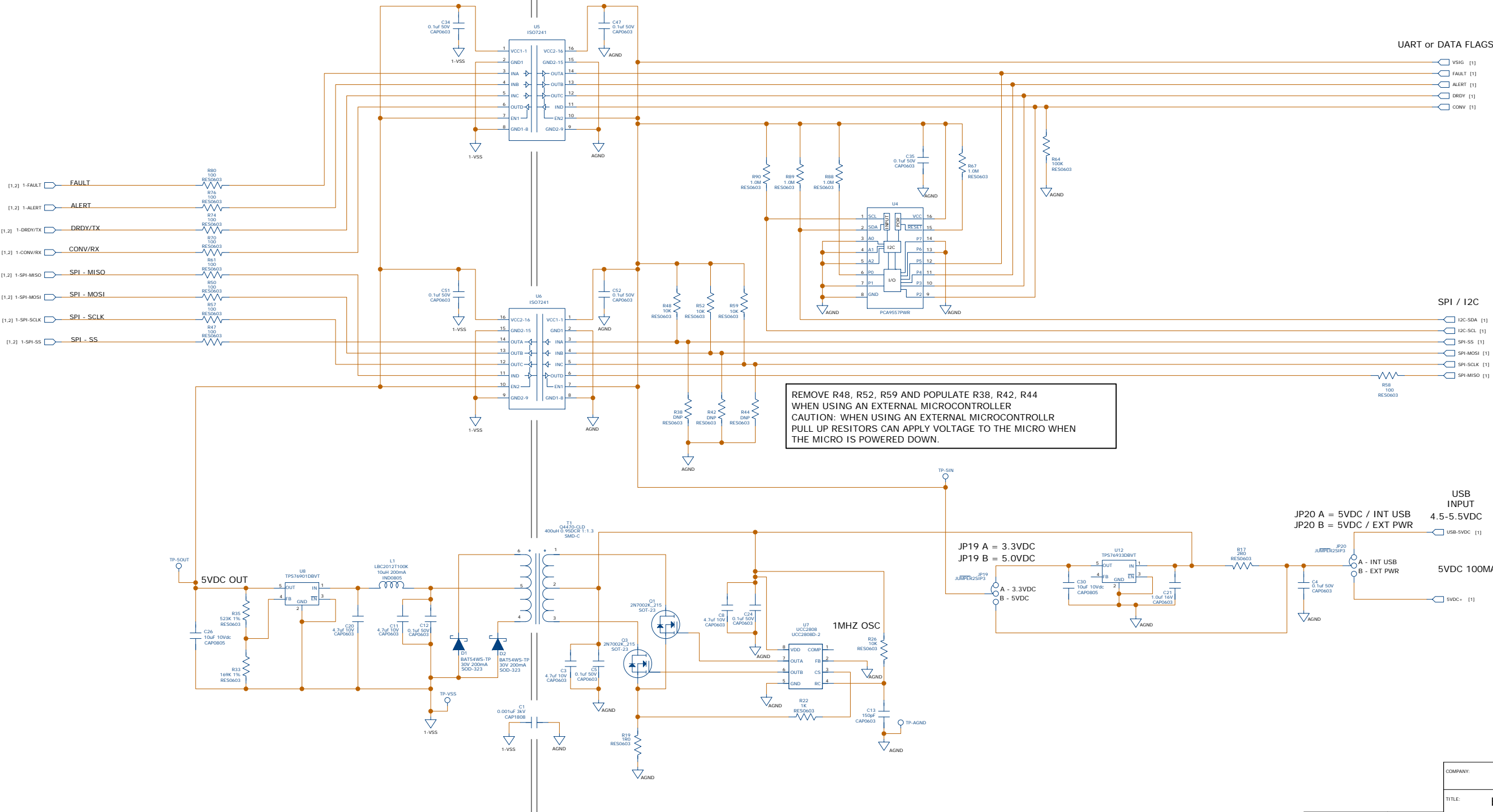
COMPANY: Texas Instruments			
TITLE: bq76PL536EVM-3 Stack Design Commercial Grade			
CODE:	SIZE: D	DRAWING NO: CIRCUIT 2 HPA507	REV: A
SCALE:	SHEET: 3 of 5		



REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:



ISOLATION BOUNDARY  
48 MIL ISOLATION REQUIRED



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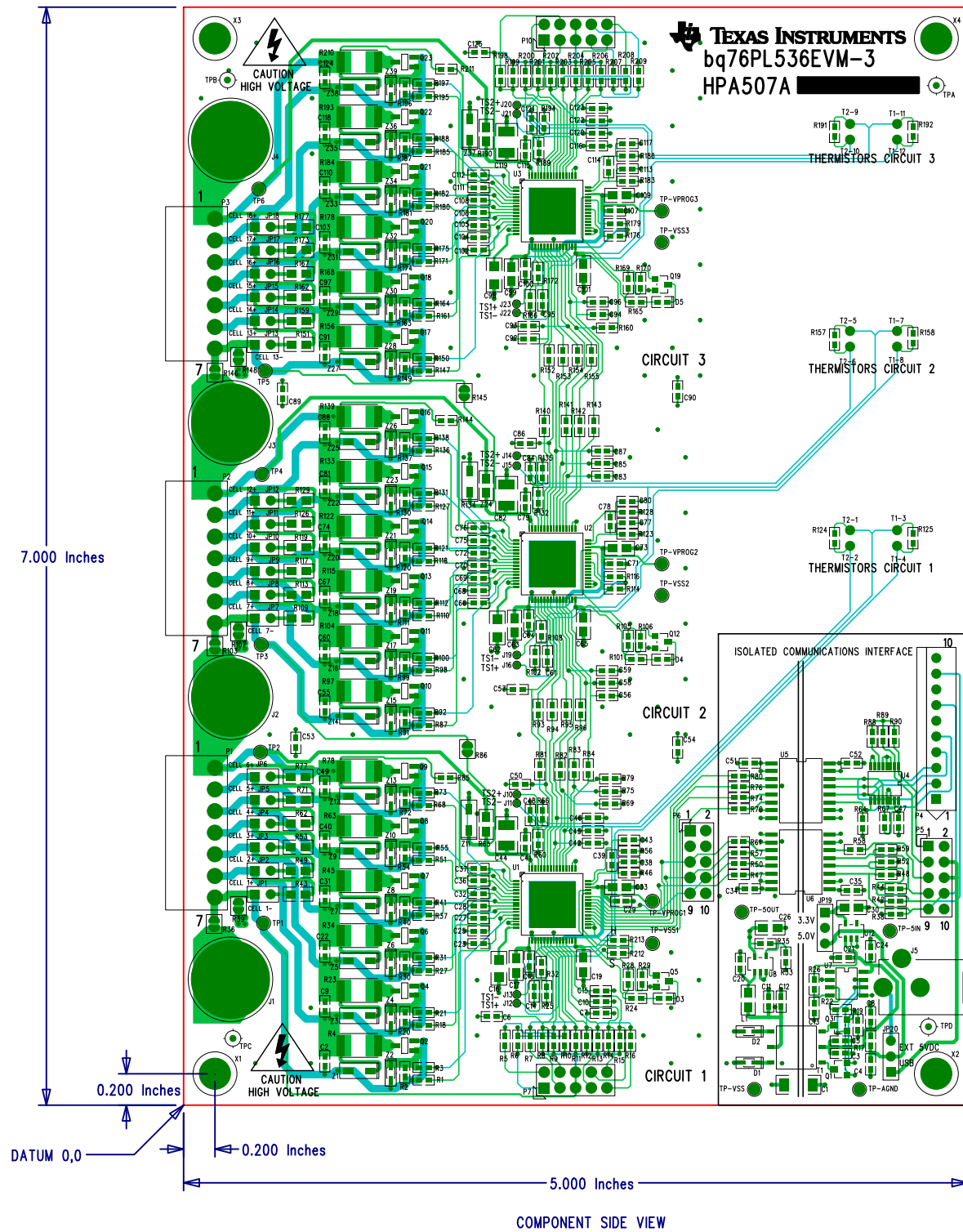
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Copyright (c) 2010 Texas Instruments, Inc. All rights reserved.



DRAWN: GORDON VARNEY		DATED: 6/30/2010		Commercial Grade			
CHECKED:		DATED:		CODE:	SIZE:  D	DRAWING NO:  ISO/COMMS HPA507	REV:  A
QUALITY CONTROL:		DATED:					
RELEASED:		DATED:					
SCALE:				SHEET: 5 of 5			

\*HOLE CHART IS IN MILS

FABRICATION CHART				
FINISHED THICKNESS		SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125		<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input checked="" type="checkbox"/> LAYER 1 <input checked="" type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN		TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX		<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____



NOTES: UNLESS OTHERWISE SPECIFIED

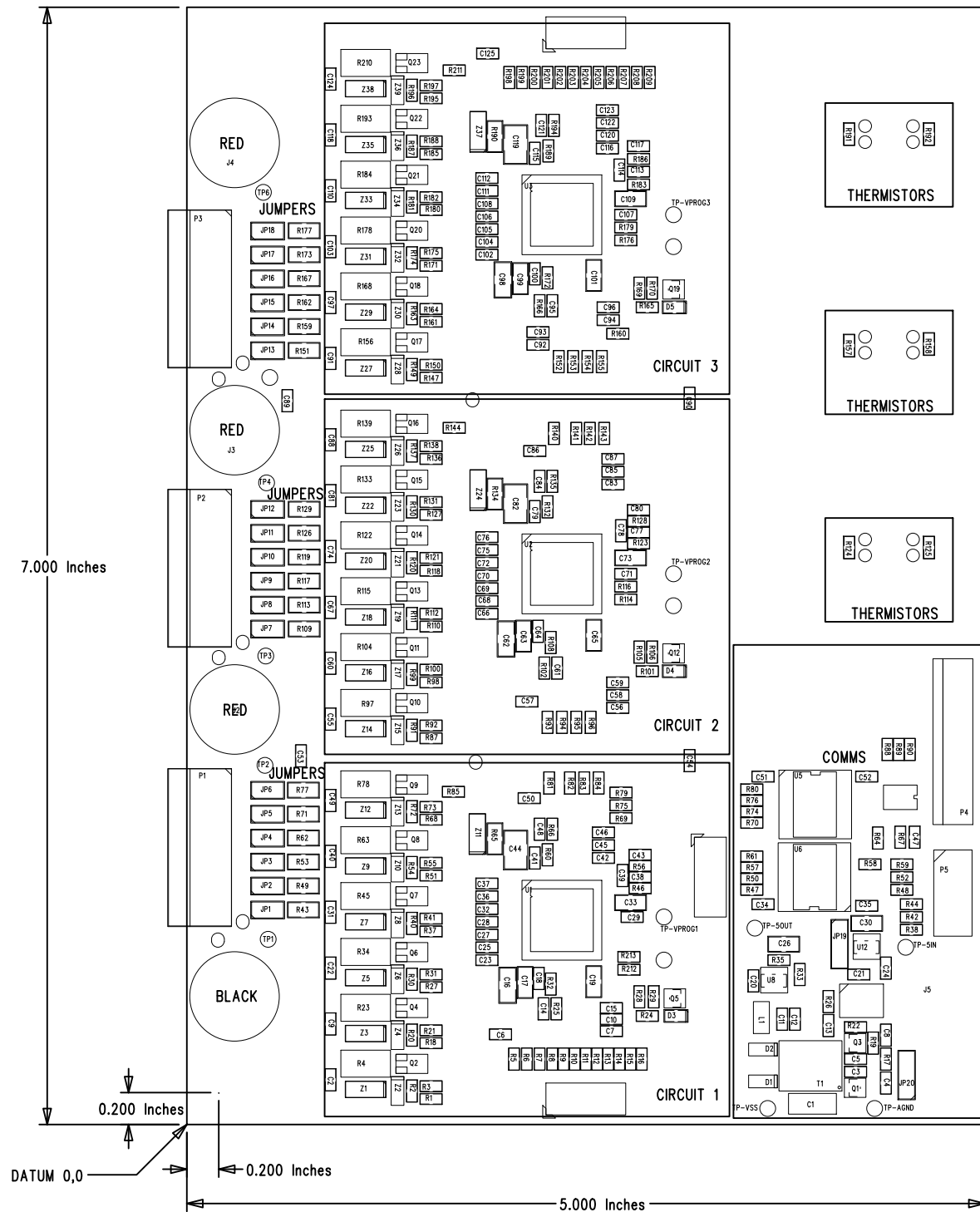
1. MATERIAL: ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE: PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK: SOLDERMASK OVER BARE COPPER (SWOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING: HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH: PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND: IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS: BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP: BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION: PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES: HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES: UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
PCB THICKNESS TOLERANCE = +/- .10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER  
PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE TO THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER: ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES: NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.

TEXAS INSTRUMENTS				COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
				TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO:		REV:		TOP			BOT	SST								FB
HPA507		A		TOP			BOT	SST								FB
DATE: 06/15/2010		FILENAME: HPA507A bq76PL536VM-3 Stack Design.PCB				ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney		MODIFIED DATE: 06/29/2010		TIME STAMP:				



\*HOLE CHART IS IN MILS

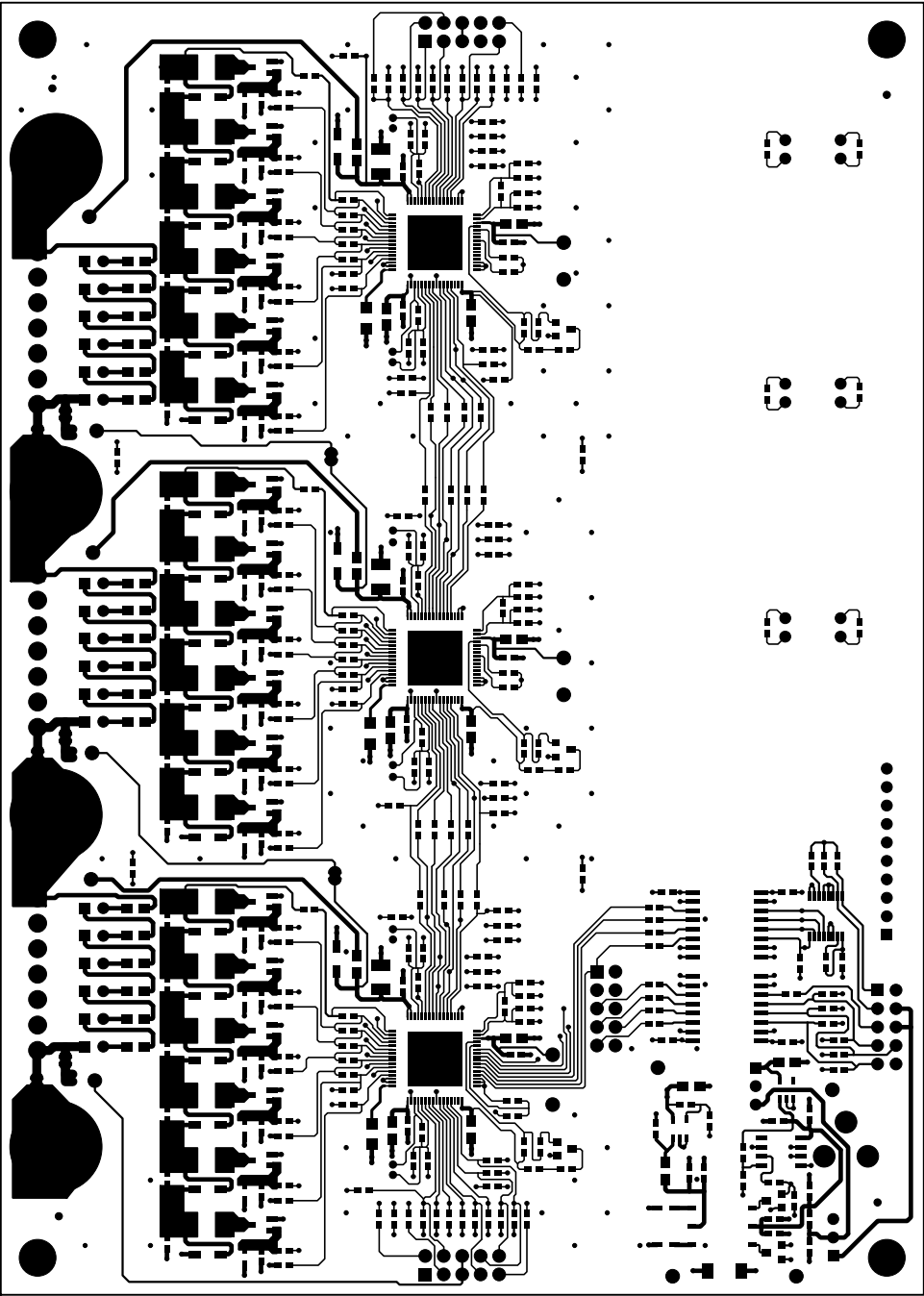
FABRICATION CHART			
FINISHED THICKNESS <input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125	SILKSCREEN <input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	SOLDERMASK <input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	FINISHED COPPER WEIGHT <input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____



COMPONENT SIDE VIEW

TEXAS INSTRUMENTS				COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
				TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO:  HPA507				REV:  A										AST		FB
DATE: 06/15/2010		FILENAME: HPA507A bq76PL536VM-3 Stack Design.PCB				ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney				MODIFIED DATE: 06/29/2010		TIME STAMP:		

- | NOTES: UNLESS OTHERWISE SPECIFIED |  |
|-----------------------------------|--|
| 1. MATERIAL:                      | ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0  |
| 2. BASE LAMINATE:                 | PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES,<br>BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C<br>OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C.<br>GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS  |
| 3. SOLDERMASK:                    | SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.  |
| 4. PLATING:                       | HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE   |
| 5. FINISH:                        | PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu,<br>WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS<br>WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS  |
| 6. LEGEND:                        | IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.   |
| 7. MARKINGS:                      | BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.   |
| 8. WORKMANSHIP:                   | BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER   |
| 9. DOCUMENTATION:                 | PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER   |
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| 12. PANEL BORDER:                 | ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.  |
| 13. PROCESS CHANGES:              | NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.   |



FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125	<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input checked="" type="checkbox"/> LAYER 1 <input checked="" type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____

NOTES: UNLESS OTHERWISE SPECIFIED

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8. WORKMANSHIP:

BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION:

PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES:

HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES:

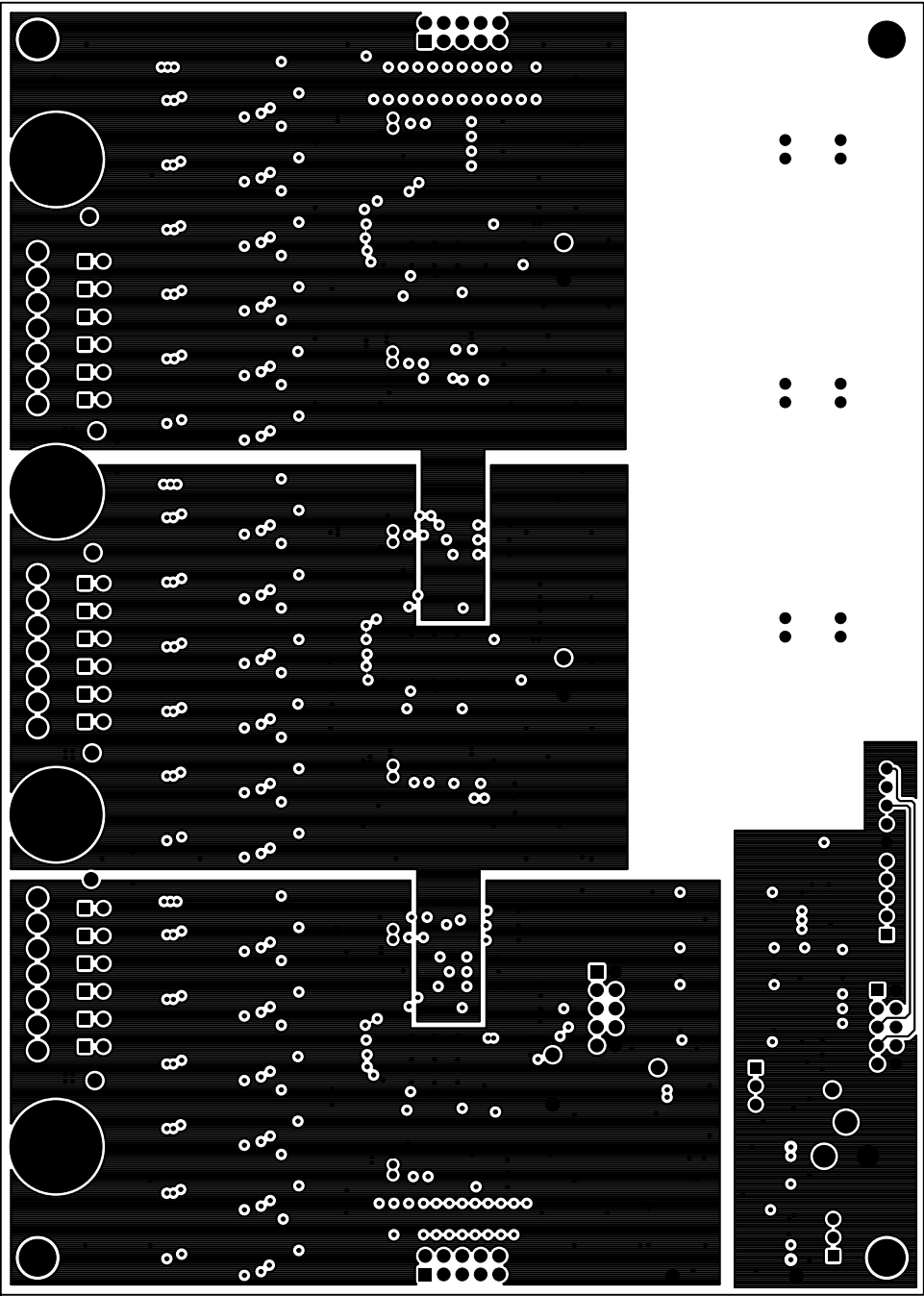
UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
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PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
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12. PANEL BORDER:

ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
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TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO: HPA507		REV: A	TOP											FB
DATE: 06/15/2010	FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB			ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney		MODIFIED DATE: 06/29/2010		TIME STAMP:				



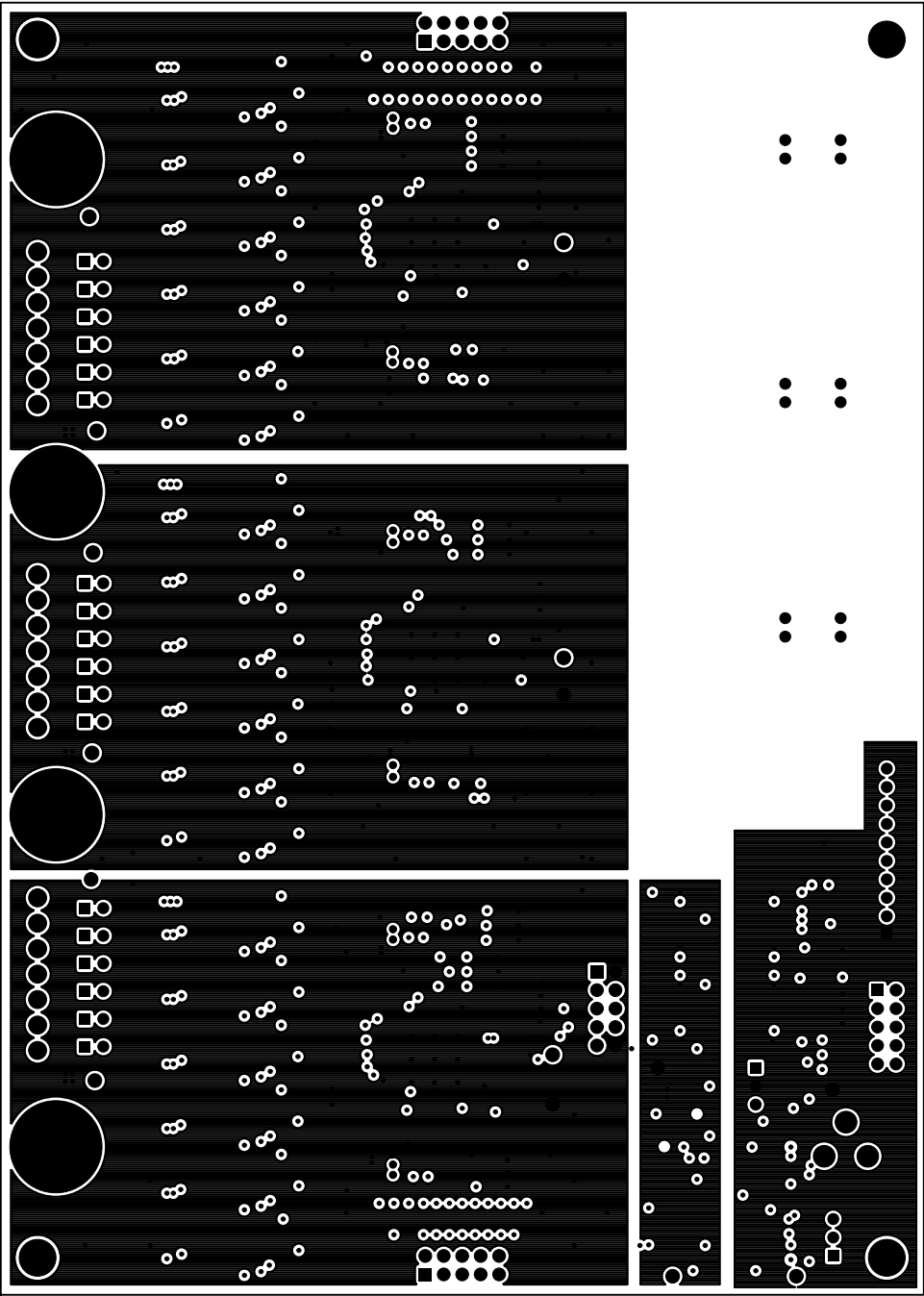


FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125	<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input checked="" type="checkbox"/> LAYER 1 <input checked="" type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____

NOTES: UNLESS OTHERWISE SPECIFIED

1. MATERIAL:
- ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE:
- PLASTIC SHEET, LAMINIATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
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8. WORKMANSHIP:
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10. DRILL SIZES:
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11. TOLERANCES:
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12. PANEL BORDER:
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TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY	FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	
BOARD NO: HPA507		REV: A		LY2									FB
DATE: 06/15/2010	FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB		ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney		MODIFIED DATE: 06/29/2010		TIME STAMP:				



FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125	<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input checked="" type="checkbox"/> LAYER 1 <input checked="" type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____

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2. BASE LAMINATE:

PLASTIC SHEET, LAMINIATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK:

SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING:

HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH:

PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND:

IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS:

BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP:

BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION:

PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES:

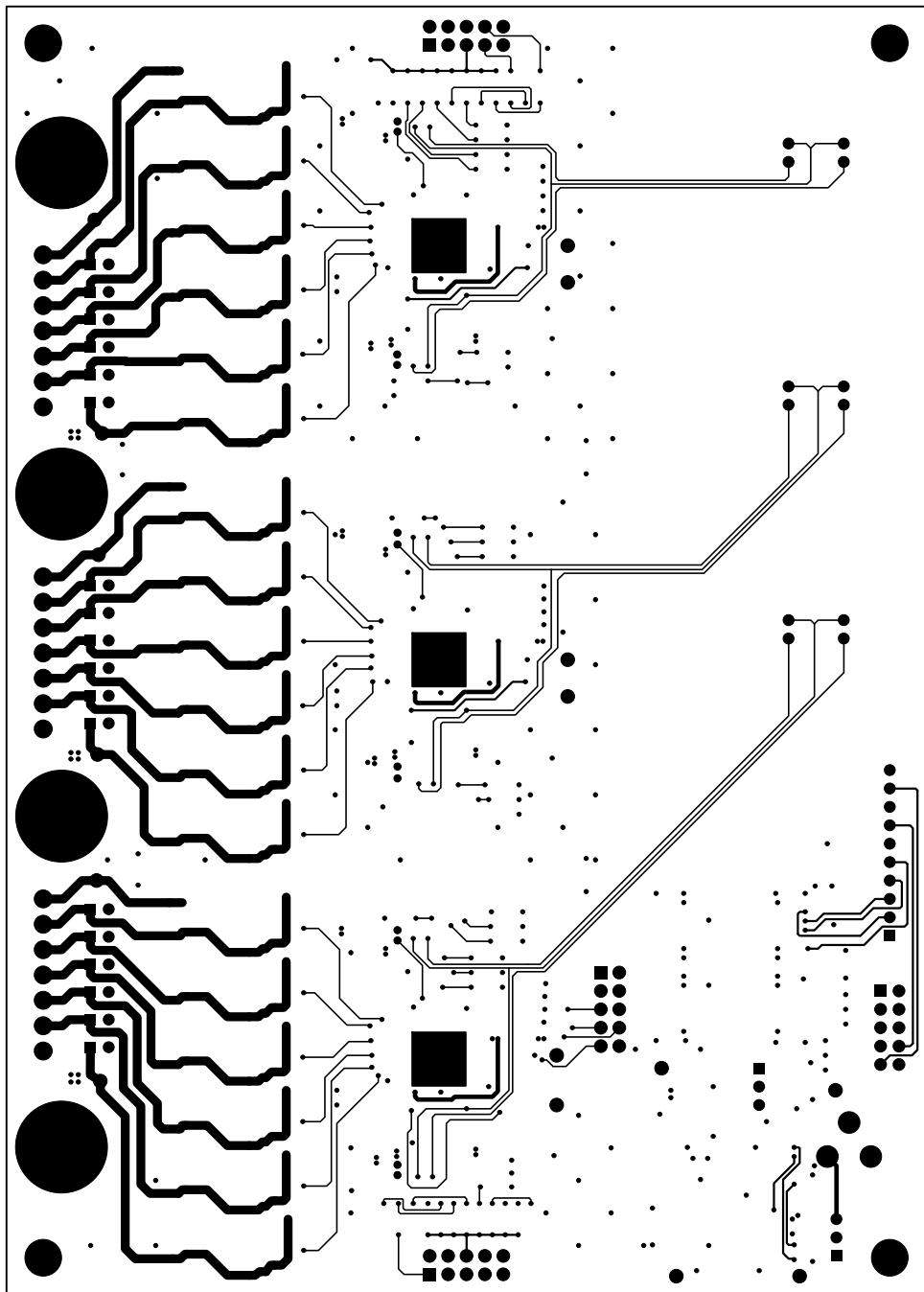
HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES:

UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
PCB THICKNESS TOLERANCE = +/- 10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER  
PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER:

ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES:

NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO: HPA507		REV: A		LY3										FB
DATE: 06/15/2010	FILENAME: HPA507A bq76PL536EVM-3 Stock Design.PCB				ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney		MODIFIED DATE: 06/29/2010		TIME STAMP:			



FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031	<input checked="" type="checkbox"/> LAYER 1	<input checked="" type="checkbox"/> LAYER 1	<input type="checkbox"/> 1 OZ.
<input checked="" type="checkbox"/> 0.062	<input type="checkbox"/> LAYER 2	<input type="checkbox"/> LAYER 2	<input checked="" type="checkbox"/> 2 OZ.
<input type="checkbox"/> 0.093	<input type="checkbox"/> NONE	<input type="checkbox"/> NONE	<input type="checkbox"/> OTHER _____
<input type="checkbox"/> 0.125			
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD	<input type="checkbox"/> 0.010/0.010		<input type="checkbox"/> SINGLE SIDED
<input type="checkbox"/> THRU-HOLE	<input checked="" type="checkbox"/> 0.008/0.007		<input type="checkbox"/> 2 LAYER
<input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.006/0.006		<input checked="" type="checkbox"/> 4 LAYER
	<input type="checkbox"/> OTHER _____		<input type="checkbox"/> OTHER _____

NOTES: UNLESS OTHERWISE SPECIFIED

3. MATERIAL: ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE: PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK: SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING: HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH: PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND: IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS: BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP: BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION: PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES: HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES: UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
PCB THICKNESS TOLERANCE = +/- 10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER  
PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE TO THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER: ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES: NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING		
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT			
BOARD NO: HPA507		REV: A					BOT							FB		
DATE: 06/15/2010		FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB				ENGINEER: Gordon Varney				PCB DESIGNER: Gordon Varney				MODIFIED DATE: 06/29/2010		TIME STAMP:

FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031	<input checked="" type="checkbox"/> LAYER 1	<input checked="" type="checkbox"/> LAYER 1	<input type="checkbox"/> 1 OZ.
<input checked="" type="checkbox"/> 0.062	<input type="checkbox"/> LAYER 2	<input type="checkbox"/> LAYER 2	<input checked="" type="checkbox"/> 2 OZ.
<input type="checkbox"/> 0.093	<input type="checkbox"/> NONE	<input type="checkbox"/> NONE	<input type="checkbox"/> OTHER _____
<input type="checkbox"/> 0.125			
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD	<input type="checkbox"/> 0.010/0.010		<input type="checkbox"/> SINGLE SIDED
<input type="checkbox"/> THRU-HOLE	<input checked="" type="checkbox"/> 0.008/0.007		<input type="checkbox"/> 2 LAYER
<input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.006/0.006		<input checked="" type="checkbox"/> 4 LAYER
	<input type="checkbox"/> OTHER _____		<input type="checkbox"/> OTHER _____

Figure 1 illustrates the experimental design. It shows three rows of stimuli. Each row consists of a 4x4 grid of small squares on the left, a central square with a black dot and a crosshair, and a 4x4 grid of small squares on the right. The central square is labeled 'Stimulus' and the two side grids are labeled 'Response'.

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO:	REV:									PMT				FB
HPA507	A													
DATE: 06/15/2010	FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB	ENGINEER: Gordon Varney	PCB DESIGNER: Gordon Varney	MODIFIED DATE: 06/29/2010	TIME STAMP:									

**NOTES: UNLESS OTHERWISE SPECIFIED**

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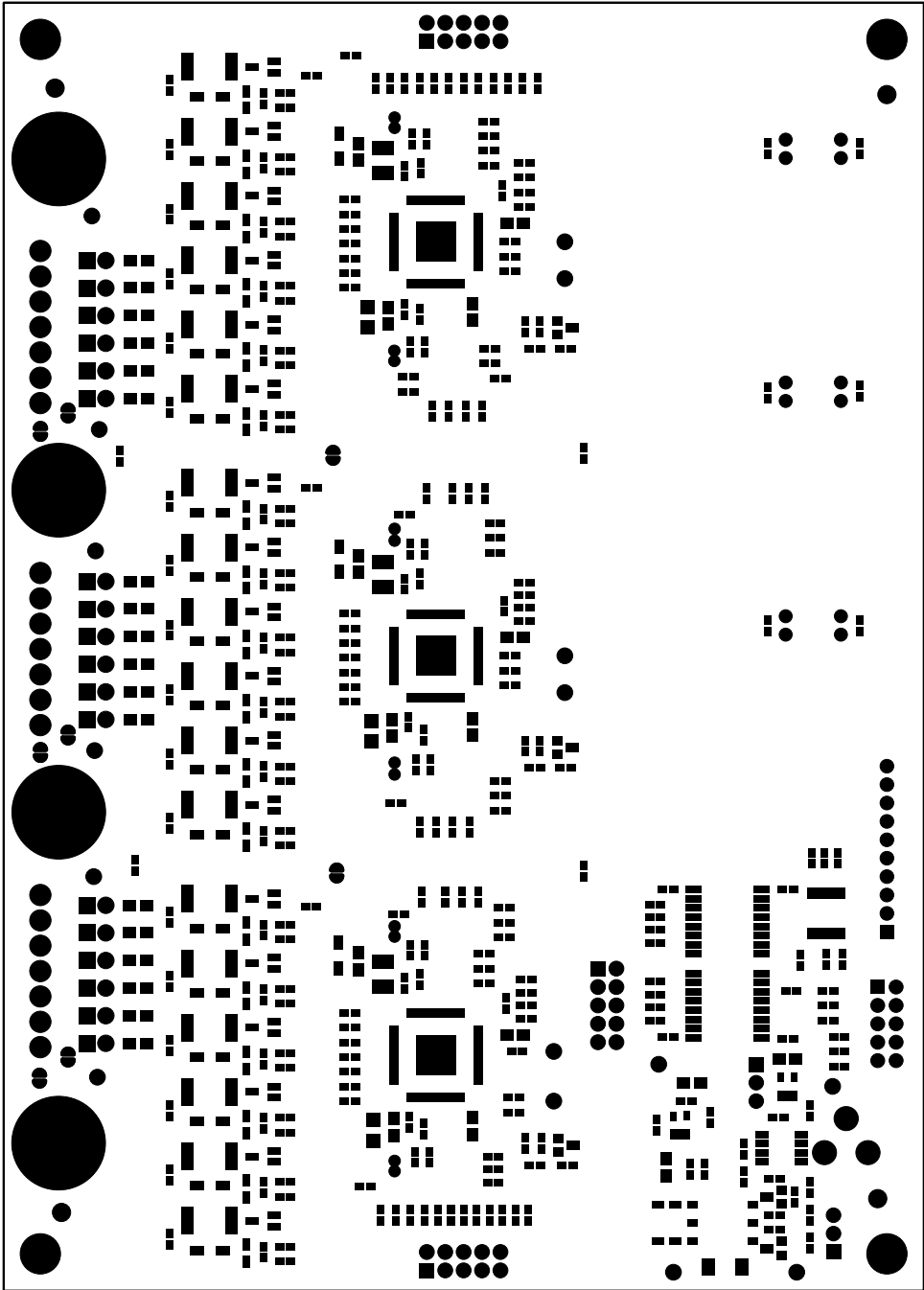
1. MATERIAL: ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE: PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK: SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING: HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH: PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND: IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS: BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP: BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION: PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES: HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES: UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
PCB THICKNESS TOLERANCE = +/- .10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER  
PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER: ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES: NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.



NOTES: UNLESS OTHERWISE SPECIFIED

- |                      |  |
|----------------------|--|
| 3. MATERIAL:         | ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0  |
| 2. BASE LAMINATE:    | PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES,<br>BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C<br>OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C.<br>GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS  |
| 3. SOLDERMASK:       | SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.  |
| 4. PLATING:          | HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE   |
| 5. FINISH:           | PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu,<br>WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS<br>WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS  |
| 6. LEGEND:           | IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.   |
| 7. MARKINGS:         | BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.   |
| 8. WORKMANSHIP:      | BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER   |
| 9. DOCUMENTATION:    | PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER   |
| 10. DRILL SIZES:     | HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.  |
| 11. TOLERANCES:      | UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:<br>PCB THICKNESS TOLERANCE = +/- 10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER<br>PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.<br>FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE TO THE DRILL TABLE DIMENSIONS. |
| 12. PANEL BORDER:    | ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.  |
| 13. PROCESS CHANGES: | NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.   |

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO:  HPA507		REV:  A		TOP										FB
DATE: 06/15/2010		FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB		ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney				MODIFIED DATE: 06/29/2010		TIME STAMP:		



FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125	<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input checked="" type="checkbox"/> LAYER 1 <input checked="" type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____

NOTES: UNLESS OTHERWISE SPECIFIED

1. MATERIAL:

ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE:

PLASTIC SHEET, LAMINIATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK:

SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING:

HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH:

PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND:

IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS:

BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP:

BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION:

PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES:

HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES:

UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
PCB THICKNESS TOLERANCE = +/- 10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER  
PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER:

ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES:

NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY	FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	
BOARD NO: HPA507		REV: A						SMT					FB
DATE: 06/15/2010	FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB		ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney		MODIFIED DATE: 06/29/2010		TIME STAMP:				

FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031	<input checked="" type="checkbox"/> LAYER 1	<input checked="" type="checkbox"/> LAYER 1	<input type="checkbox"/> 1 OZ.
<input checked="" type="checkbox"/> 0.062	<input type="checkbox"/> LAYER 2	<input type="checkbox"/> LAYER 2	<input checked="" type="checkbox"/> 2 OZ.
<input type="checkbox"/> 0.093	<input type="checkbox"/> NONE	<input type="checkbox"/> NONE	<input type="checkbox"/> OTHER _____
<input type="checkbox"/> 0.125			
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD	<input type="checkbox"/> 0.010/0.010		<input type="checkbox"/> SINGLE SIDED
<input type="checkbox"/> THRU-HOLE	<input checked="" type="checkbox"/> 0.008/0.007		<input type="checkbox"/> 2 LAYER
<input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.006/0.006		<input checked="" type="checkbox"/> 4 LAYER
	<input type="checkbox"/> OTHER _____		<input type="checkbox"/> OTHER _____

This abstract pattern is composed of various geometric shapes arranged in a structured yet irregular manner. On the left side, there is a vertical column of four large, solid black circles. To the right of this column, there is a vertical column of small, solid black circles. The central area of the image is filled with a sparse distribution of dots and squares, some of which are arranged in small clusters. The overall composition is balanced and visually appealing, with a high contrast between the black shapes and the white background.

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	
BOARD NO: HPA507		REV: A								SMB				FB
DATE: 06/15/2010	FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB			ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney			MODIFIED DATE: 06/29/2010		TIME STAMP:			

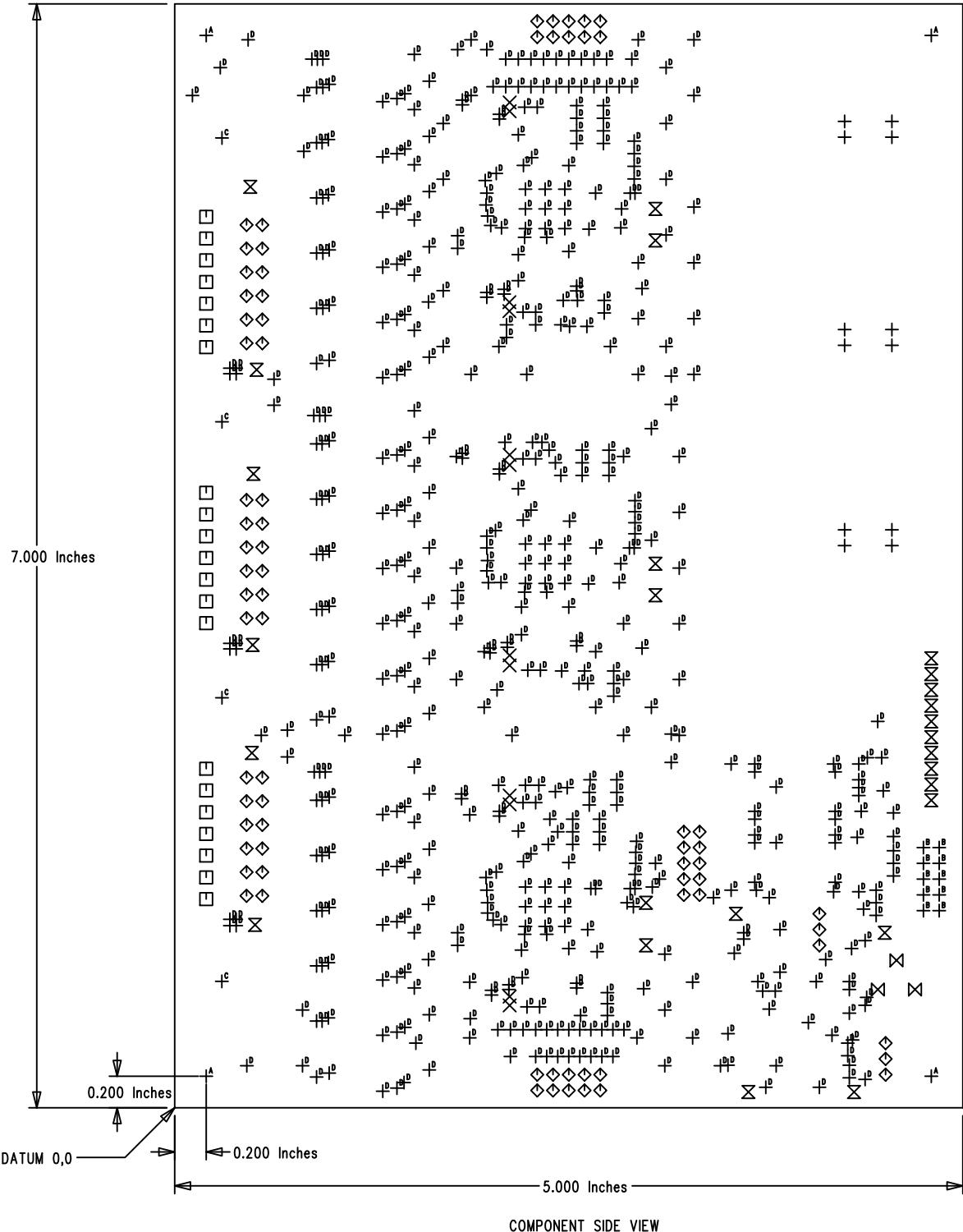
NOTES: UNLESS OTHERWISE SPECIFIED	
1. MATERIAL:	ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE:	PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK:	SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840, COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING:	HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH:	PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND:	IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS:	BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP:	BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION:	PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES:	HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES:	UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE: PCB THICKNESS TOLERANCE = +/- .10% RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS. FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE TO THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER:	ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES:	NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.



\*HOLE CHART IS IN MILS

FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
<input type="checkbox"/> 0.031 <input checked="" type="checkbox"/> 0.062 <input type="checkbox"/> 0.093 <input type="checkbox"/> 0.125	<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input checked="" type="checkbox"/> LAYER 1 <input type="checkbox"/> LAYER 2 <input type="checkbox"/> NONE	<input type="checkbox"/> 1 OZ. <input checked="" type="checkbox"/> 2 OZ. <input type="checkbox"/> OTHER _____
DESIGN	TRACE/GAP SPACING		LAYER COUNT
<input type="checkbox"/> SMD <input type="checkbox"/> THRU-HOLE <input checked="" type="checkbox"/> MIX	<input type="checkbox"/> 0.010/0.010 <input checked="" type="checkbox"/> 0.008/0.007 <input type="checkbox"/> 0.006/0.006 <input type="checkbox"/> OTHER _____		<input type="checkbox"/> SINGLE SIDED <input type="checkbox"/> 2 LAYER <input checked="" type="checkbox"/> 4 LAYER <input type="checkbox"/> OTHER _____

SIZE	QTY	SYM	PLATED	TOL
32	12	⊕	YES	+/-0.0
20	12	⊗	YES	+/-0.0
48.03	21	□	YES	+/-0.0
37	72	◇	YES	+/-0.0
40	26	⊗	YES	+/-0.0
78.74	3	⊗	YES	+/-0.0
187	4	⊕ <sup>A</sup>	YES	+/-0.0
39	10	⊕ <sup>B</sup>	YES	+/-0.0
335	4	⊕ <sup>C</sup>	YES	+/-0.0
12	579	⊕ <sup>D</sup>	YES	+/-0.0

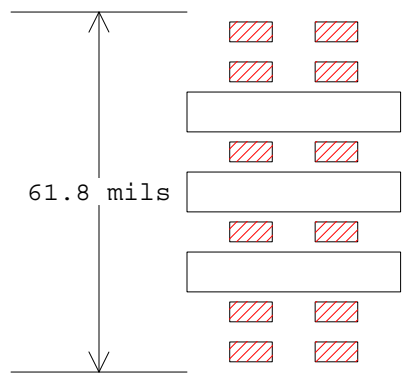


NOTES: UNLESS OTHERWISE SPECIFIE

1. MATERIAL: ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0
2. BASE LAMINATE: PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NE A TYPE FR-4 OR EQUIVALENT, W/Tg = 180 Deg C OR HIGHER MINIMUM COMPOSITION TEMP (Td) OF 340 Deg C. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS
3. SOLDERMASK: SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB OR ASSEMBLY ARE ALLOWED PROVIDED NO DEFECTS ARE CREATED AS A RESULT.
4. PLATING: HOLES REQUIRING PLATING SHALL HAVE .001 MIL MIN THICK COPPER PLATE
5. FINISH: PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS
6. LEGEND: IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS: BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK) LOCATION OPTIONAL.
8. WORKMANSHIP: BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER
9. DOCUMENTATION: PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER
10. DRILL SIZES: HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. TOLERANCES: UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE:  
PCB THICKNESS TOLERANCE = +/- .10X RELATIVE TO FINISHED THICKNESS, MEASURED FROM COPPER TO COPPER  
PCB DIMENSIONAL TOLERANCE = +/- .005 INCHES RELATIVE TO BOARD PROFILE AND DRILL TO EDGE DIMENSIONS.  
FINISHED HOLE DIAMETERS SHALL BE +/- .003 INCHES RELATIVE TO THE DRILL TABLE DIMENSIONS.
12. PANEL BORDER: ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES: NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.

TEXAS INSTRUMENTS		COPPER LAYER NAME				SILKSCREEN		SOLDER MASK		PASTE MASK		ASSEMBLY		FAB DRAWING	
		TOP 1	INNER 2	INNER 3	BOT 4	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT		
BOARD NO: HPA507		REV: A		TOP										FB	
DATE: 06/15/2010		FILENAME: HPA507A bq76PL536EVM-3 Stack Design.PCB				ENGINEER: Gordon Varney		PCB DESIGNER: Gordon Varney				MODIFIED DATE: 06/29/2010		TIME STAMP:	

Number of layers: 9  
Total thickness = 61.8 mils



NN	Layer Name	Type	Usage	Thickness mils, oz	Technology	Metal
1	Plating	Metal	Signal	1		Copper
2	Top	Metal	Signal	1		Copper
3	Substrate	Dielectric	Substrate	15	Prepreg	
4	Inner_Layer_2	Metal	Signal	2		Copper
5	Substrate	Dielectric	Substrate	21	Prepreg	
6	Inner_Layer_3	Metal	Signal	2		Copper
7	Substrate	Dielectric	Substrate	15	Prepreg	
8	Bottom	Metal	Signal	1		Copper
9	Plating	Metal	Signal	1		Copper