

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	2	PROTOTYPE FAB	JD	1-24-14

LBSEL	FLOAT1	FLOAT0	FLOAT	CONNECT	DISCONNECT
0	0	0	3.45V	2.37V	2.04V
0	0	1	4.0V	3.05V	2.70V
0	1	0	4.1V	3.05V	2.70V
0	1	1	4.2V	3.05V	2.70V
1	0	0	3.45V	2.86V	2.51V
1	0	1	4.0V	3.55V	3.20V
1	1	0	4.1V	3.55V	3.20V
1	1	1	4.2V	3.55V	3.20V

OUT2	OUT1	OUT0	VOUT
0	0	0	1.8V
0	0	1	2.5V
0	1	0	2.8V
0	1	1	3.0V
1	0	0	3.3V
1	0	1	3.6V
1	1	0	4.5V
1	1	1	5.0V

IPK2	IPK1	IPK0	ILIM
R3	R5	R7	5mA
R3	R5	R6	10mA
R3	R4	R7	15mA
R3	R4	R6	25mA
R2	R5	R7	50mA
R2	R5	R6	100mA
R2	R4	R7	150mA
R2	R4	R6	250mA

UV3	UV2	UV1	UV0	UVLO RISING	UVLO FALLING
0	0	0	0	4V	3V
0	0	0	1	5V	4V
0	0	1	0	6V	5V
0	0	1	1	7V	6V
0	1	0	0	8V	7V
0	1	0	1	8V	5V
0	1	1	0	10V	9V
0	1	1	1	10V	5V
1	0	0	0	12V	11V
1	0	0	1	12V	5V
1	0	1	0	14V	13V
1	0	1	1	14V	5V
1	1	0	0	16V	15V
1	1	0	1	16V	5V
1	1	1	0	18V	17V
1	1	1	1	18V	5V

CUSTOMER NOTICE


LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.

THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.

APPROVALS

PCB DES.	NC
APP ENG.	JD

SCALE = NONE



1630 McCarthy Blvd.
Milpitas, CA 95035
Phone: (408)432-1900 www.linear.com
Fax: (408)434-0507
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TITLE: SCHEMATIC

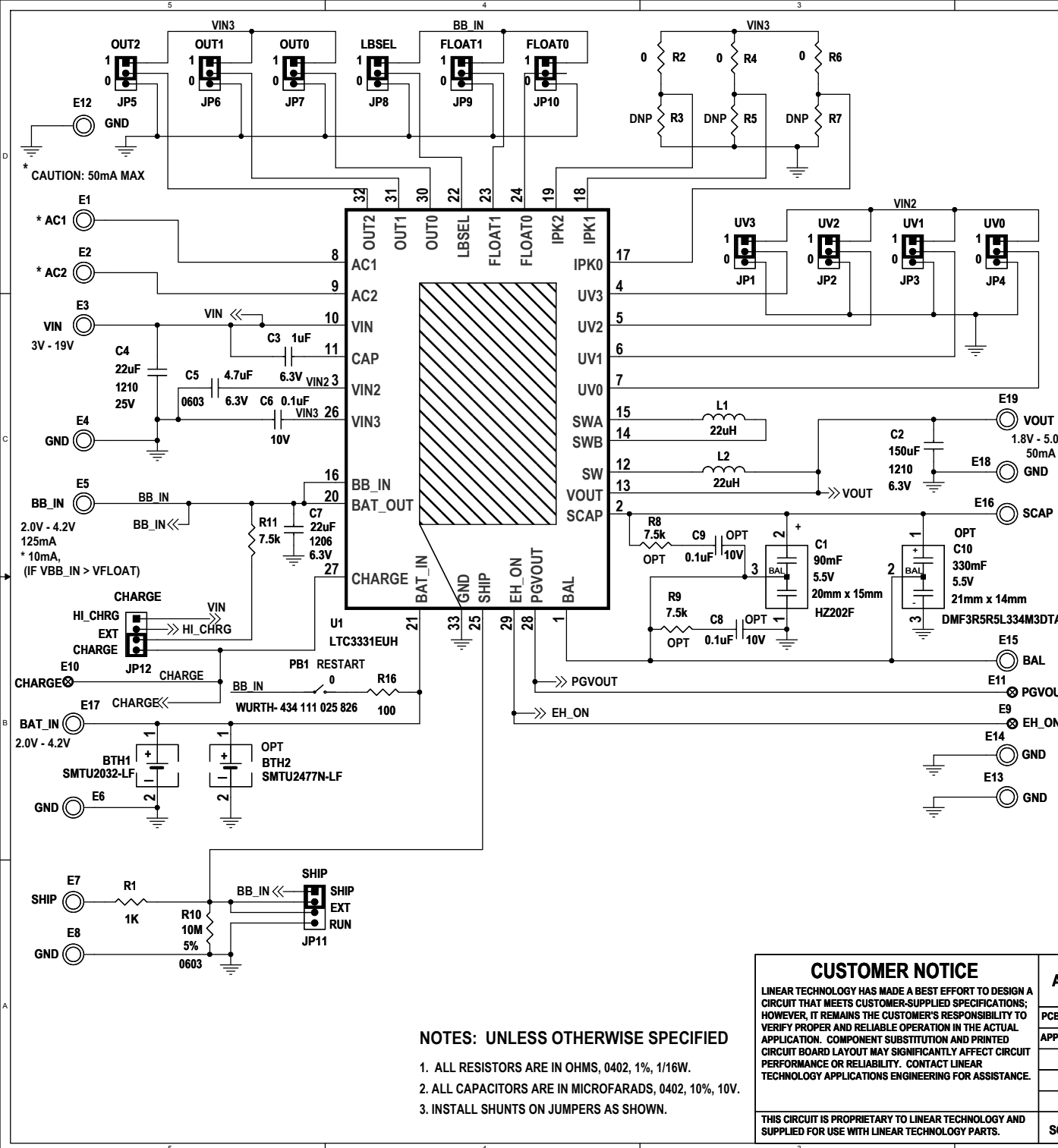
NANOPOWER BUCK - BOOST DC / DC
WITH ENERGY HARVESTING BATTERY CHARGER

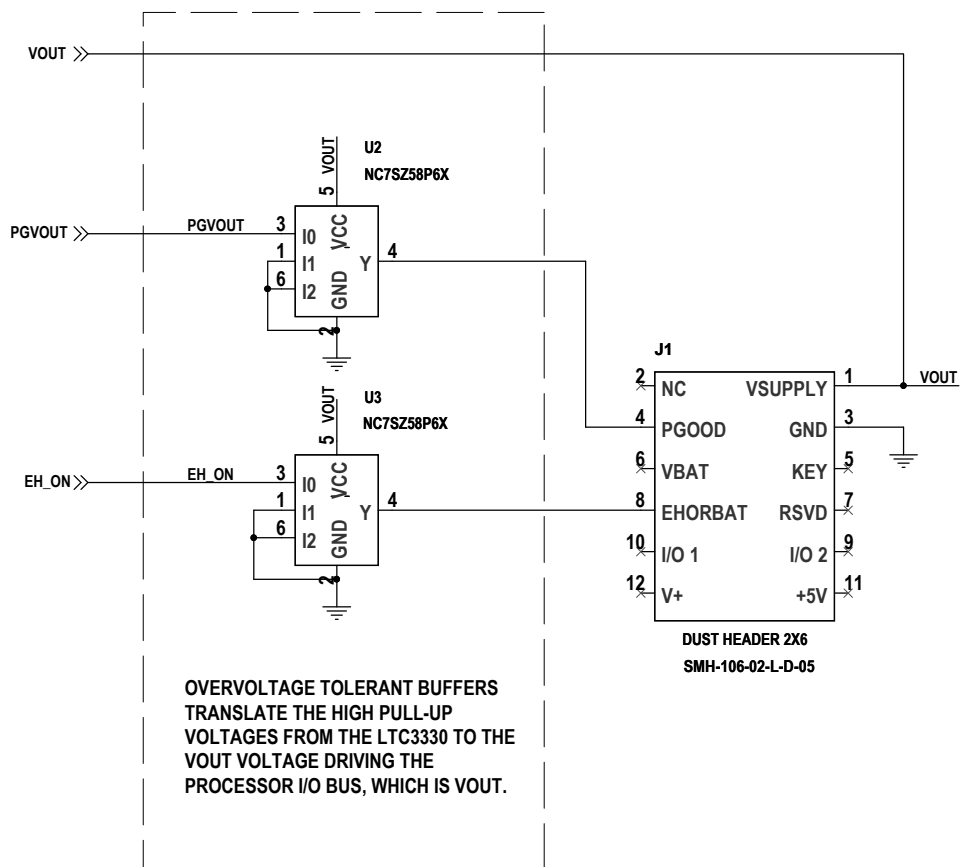
SIZE N/A	IC NO. LTC3331EUH DEMO CIRCUIT 2151A	REV. 2
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DATE: 1-24-14

SHEET 1 OF 2

- ALL RESISTORS ARE IN OHMS, 0402, 1%, 1/16W.
- ALL CAPACITORS ARE IN MICROFARADS, 0402, 10%, 10V.
- INSTALL SHUNTS ON JUMPERS AS SHOWN.

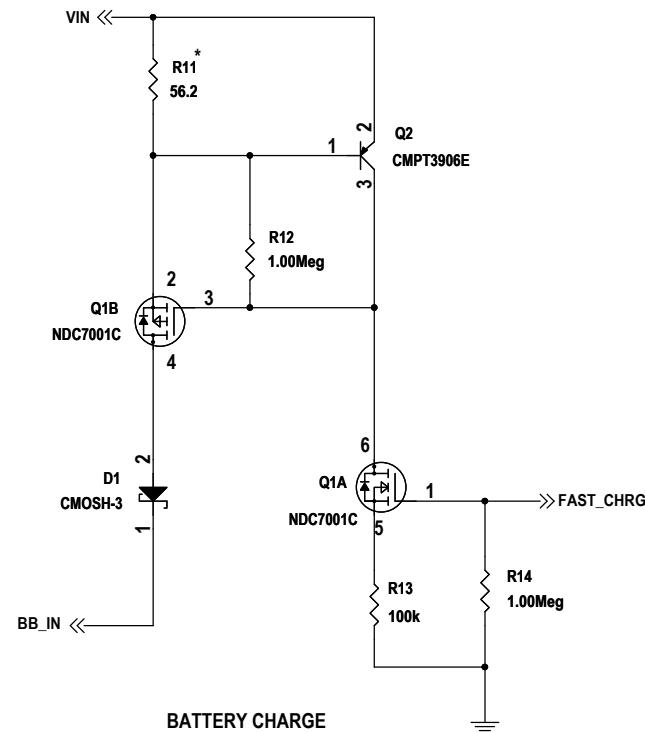




U2, U3, U4 FUNCTION TABLE

I ₂	I ₁	I ₀	Y
L	L	L	L
L	L	H	H

$$Y = (I_0) \cdot \overline{(I_2)} + \overline{(I_1)} \cdot (I_2)$$



BATTERY CHARGE
CURRENT *

R11	I_CHRG
113	5mA
75.0	7.5mA
56.2	10mA

CUSTOMER NOTICE LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		APPROVALS			1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408)432-1900 www.linear.com Fax: (408)434-0507 LTC Confidential-For Customer Use Only	
		PCB DES.	NC		TITLE: SCHEMATIC NANOPOWER BUCK - BOOST DC / DC WITH ENERGY HARVESTING BATTERY CHARGER	
		APP ENG.	JD			
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		SCALE = NONE		SIZE N/A	IC NO. LTC3331EUH DEMO CIRCUIT 2151A	REV. 2
DATE: 2 - 21 - 14				SHEET 2 OF 2		

Linear Technology Corporation

LTC3331EUH

ENGR: J.DREW (011-087)

BILL OF MATERIALS

DEMO BD. #2151A-2 BOM

QTY-400

3/28/2014

Item	Qty	Reference	Part Description	Manufacturer / Part #	Kit Qty
				NUMBER OF BOARDS =	300
1	1	BAT1	COIN LI-ION BATTERY Lir2032	POWERSTREAM, Lir2032	300
2	1	BTH1	BATTERY HOLDER COIN CELL 2032 SMD	MPD INC, BU2032SM-HD-G	300
3	0	BTH2	SMT, CR2477 BATTERY HOLDER	RENATA, SMTU2477-1	0
4	1	C1	SUPERCAP, 90mF, 5.5V, 20mm x 15mm	CAP-XX, HZ202F-1	300
5	1	C2	CAP, CHIP, X5R, 150uF, 20%, 6.3V, 1210	Samsung, CL32A157MQVNNNE	300
6	1	C3	CAP, CHIP, X5R, 1uF, 10%, 6.3V, 0402	Samsung, CL05A105KQ5NNNC	300
7	1	C4	CAP, CHIP, X5R, 22uF, 10%, 25V, 1210	Samsung, CL32A226KAJNNNE	300
8	1	C5	CAP, CHIP, X5R, 4.7uF, 10%, 6.3V, 0603	Samsung, CL10A475KQ8NNNC	300
9	1	C6	CAP, CHIP, X5R, 0.1uF, 10%, 10V, 0402	TDK, C1005X5R1A104K	300
10	1	C7	CAP, CHIP, X5R, 22uF, 20%, 6.3V, 1206	Samsung, CL31A226MQHNNNE	300
11	0	C8,C9 (OPT)	CAP, CHIP, X5R, 0.1uF, 10%, 10V, 0402	TDK, C1005X5R1A104K	0
12	0	C10 (OPT)	SUPERCAP/ULTRACAPACITOR, 330mF 5.5V 60mOHM DOUBLE CELL	MURATA,DMF3R5R5L334M3DTA0	0
13	1	D1	DIODE, SCHOTTKY, 30V, 0.1A, SOD-523	CENTRAL, CMOSH-3	300
14	13	E1-E6,E10-E17	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0	3900
15	3	E7-E9	TURRET, 0.061 DIA	MILL MAX, 2308-2-00-80-00-00-07-0	900
16	1	J1	HEADER, 12 PIN, DUST HEADER 2X6	SAMTEC, SMH-106-02-L-D-05	300
17	10	JP1-JP10	HEADER, 3 PIN 0.079 SINGLE ROW	WURTH, 62000311121	3000
18	2	JP11,JP12	HEADER, 4 PIN 0.079 SINGLE ROW	WURTH, 62000411121	600
19	12	JP1-JP12	SHUNT 2MM	WURTH, 60800213421	3600
20	1	PB1	SWITCH TACTILE SPST-NO 0.05A 12V	WURTH, 434111025826	50
21	1	L1	INDUCTOR, 22UH , 0.800A, 0.36Ω, 3.9mm x 3.9mm	COILCRAFT, LPS4018-223MLB	300
22	1	L2	INDUCTOR, 22UH , 0.75A, 0.19Ω, 4.8mm x 4.8mm	COILCRAFT, LPS5030-223MLB	300
23	1	R1	RES,CHIP, 100 OHM, 1/16W,1%, 0402	VISHAY, CRCW0402100RFKED	300
24	3	R2,R4,R6	RES,CHIP, 0, 0603	VISHAY, CRCW06030000Z0EA	900
25	0	R3,R5,R7 (DNP)	RES,CHIP, 0603	VISHAY, CRCW06030000Z0EA	0
26	0	R8,R9	RES,CHIP, 7.5K, 1/16W,1%, 0402	VISHAY, CRCW04027K50FKED	0
27	1	R10	RES,CHIP, 3.01K, 1/16W,1%, 0402	VISHAY, CRCW04023K01FKED	300
28	1	R11	RES,CHIP, 56.2 OHM, 1/16W,1%, 0402	VISHAY, CRCW040256R2FKED	300
29	2	R12,R14	RES,CHIP, 1.00MEG, 1/16W,1%, 0402	VISHAY, CRCW04021M00FKED	600
30	1	R13	RES,CHIP, 100K, 1/16W,1%, 0402	VISHAY, CRCW0402100KFKED	300
31	1	Q1	SMT, DUAL MOSFET, NCHANNET/PCHANNET ,60V, SuperSOT-6	FAIRCHILD, NDC7001C	300
32	1	Q2	SMT,BIPOLAR, PNP ,40V, SOT-23	CENTRAL, CMPT3906E	300
33	1	U1	NANOPOWER BUCK-BOOST DC/DC WITH EH BATTERY CHARGER	LINEAR TECH, LTC3331EUH#TRPBF	300
34	2	U2, U3	IC, UHS UNIV. CONFIG. TWO-INPUT GATES, SC70-6	FAIRCHILD, NC7SZ58P6X	600

Linear Technology Corporation

LTC3331EUH

ENGR: J.DREW (011-087)

BILL OF MATERIALS
DEMO BD. #2151A-2 BOM

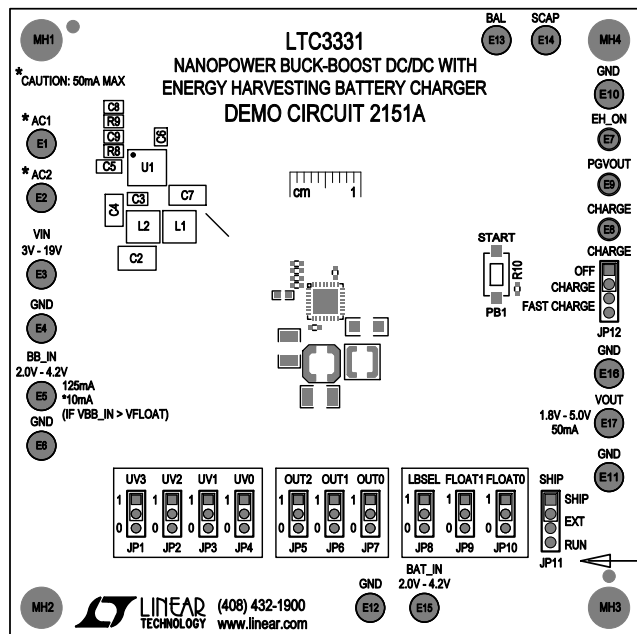
QTY-400

3/28/2014

<i>Item</i>	<i>Qty</i>	<i>Reference</i>	<i>Part Description</i>	<i>Manufacturer / Part #</i>	<i>Kit Qty</i>
				NUMBER OF BOARDS =	300
35	4		STAND-OFF, NYLON 0.625" tall (SNAP ON)	WURTH, 702 936 000	1200
36	1		FAB, PRINTED CIRCUIT BOARD	DEMO CIRCUIT 2151A-2	300
37	2		STENCILS - TOP & BOTTOM	DC2151A-2	2

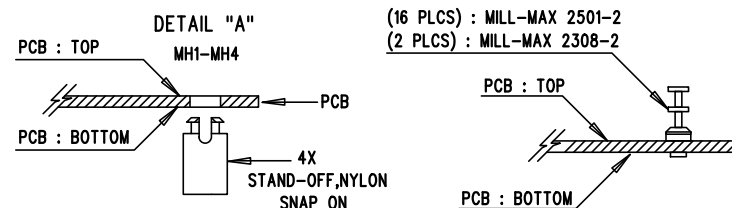
Item	Qty	Reference - Des	Part Description	Manufacturer, Part #
REQUIRED CIRCUIT COMPONENTS:				
1	1	BAT1	CR2032 COIN LI-ION BATTERY	POWERSTREAM, Lir2032
2	1	BTH1	BATTERY HOLDER COIN CELL 2032 SMD	MPD INC, BU2032SM-HD-G
3	1	C1	SUPERCAP, 90mF, 5.5V, 20mm x 15mm	CAP-XX, HZ202F-1
4	1	C2	CAP, CHIP, X5R, 150uF, 20%, 6.3V, 1210	Samsung, CL32A157MQVNNNE
5	1	C3	CAP, CHIP, X5R, 1uF, 10%, 6.3V, 0402	Samsung, CL05A105KQ5NNNC
6	1	C4	CAP, CHIP, X5R, 22uF, 10%, 25V, 1210	Samsung, CL32A226KAJNNNE
7	1	C5	CAP, CHIP, X5R, 4.7uF, 10%, 6.3V, 0603	Samsung, CL10A475KQ8NNNC
8	1	C6	CAP, CHIP, X5R, 0.1uF, 10%, 10V, 0402	TDK, C1005X5R1A104K
9	1	C7	CAP, CHIP, X5R, 22uF, 20%, 6.3V, 1206	Samsung, CL31A226MQHNNNE
10	1	L1	INDUCTOR, 22UH , 0.800A, 0.36Ω, 3.9mm x 3.9mm	COILCRAFT, LPS4018-223MLB
11	1	L2	INDUCTOR, 22UH , 0.75A, 0.19Ω, 4.8mm x 4.8mm	COILCRAFT, LPS5030-223MLB
12	3	R2,R4,R6	RES,CHIP,0.0603	VISHAY, CRCW06030000Z0EA
13	1	R10	RES,CHIP, 3.01K, 1/16W,1%, 0402	VISHAY, CRCW04023K01FKED
14	1	U1	NANOPOWER BUCK-BOOST DC/DC WITH EH BATTERY CHARGER	LINEAR TECH, LTC3331EUH#TRPBF
ADDITIONAL DEMO BOARD CIRCUIT COMPONENTS:				
1	0	C8,C9	CAP, CHIP, X5R, 0.1uF, 10%, 10V, 0402 (OPT)	TDK, C1005X5R1A104K
2	0	C10	SUPERCAP/ULTRACAPACITOR, 330mF 5.5V 60mOHM DOUBLE CELL	MURATA,DMF3R5R5L334M3DTA0
3	1	D1	DIODE, SCHOTTKY, 30V, 0.1A, SOD-523	CENTRAL, CMOSH-3
4	0	BTH2	SMT, CR2477 BATTERY HOLDER	RENATA, SMTU2477-1
5	1	R1	RES,CHIP,100 OHM,1/16W,1%,0402	VISHAY, CRCW0402100RFKED
6	0	R3,R5,R7	RES,CHIP, 0 , 0603 (DNP)	VISHAY, CRCW06030000Z0EA
7	0	R8,R9	RES,CHIP,7.5K,1/16W,1%,0402	VISHAY, CRCW04027K50FKED
8	1	R11	RES,CHIP, 56.2 OHM, 1/16W,1%, 0402	VISHAY, CRCW040256R2FKED
9	2	R12,R14	RES,CHIP, 1.00MEG, 1/16W,1%, 0402	VISHAY, CRCW04021M00FKED
10	1	R13	RES,CHIP, 100K, 1/16W,1%, 0402	VISHAY, CRCW0402100KFKED
11	1	Q1	SMT, DUAL MOSFET, NCHANNEL/PCHANNEL ,60V, SuperSOT-6	FAIRCHILD, NDC7001C
12	1	Q2	SMT,BIPOLAR, PNP ,40V, SOT-23	CENTRAL, CMPT3906E
13	2	U2, U3	IC, UHS UNIV. CONFIG. TWO-INPUT GATES, SC70-6	FAIRCHILD, NC7SZ58P6X
1	13	E1-E6,E10-E17	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0
2	3	E7-E9	TURRET, 0.061 DIA	MILL MAX, 2308-2-00-80-00-00-07-0
3	1	J1	HEADER, 12 PIN, DUST HEADER 2X6	SAMTEC, SMH-106-02-L-D-05
4	10	JP1-JP10	HEADER, 3 PIN 0.079 SINGLE ROW	WURTH, 62000311121
5	2	JP11,JP12	HEADER, 4 PIN 0.079 SINGLE ROW	WURTH, 62000411121
6	12	JP1-JP12	SHUNT 2MM	WURTH, 60800213421

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	2	PRODUCTION FAB	JD	2-21-14



NOTES: UNLESS OTHERWISE SPECIFIED

1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH IPC-A-610.
2. ASSEMBLY PROCESS SHALL INCLUDE: REFLOW SOLDER TOP SIDE SMD. MAXIMUM SOLDER TEMPERATURE IS 240 DEGREES CELCIUS.
3. PARTS TO OMIT WILL BE SPECIFIED ON THE BILL OF MATERIALS. LOCATIONS OF OMITTED PARTS SHALL BE FREE OF SOLDER. MASK THE SOLDER STENCIL WHERE SMT PARTS ARE OMITTED.
4. INSTALL SHUNTS AS SHOWN ON ASSY DRAWING.
5. DEPANELIZE BOARDS AFTER ASSEMBLY AND ROUTE-OUT THE BREAKOUT TABS ON FOUR SIDES OF THE BOARD EDGE.
7. INSTALL TURRETS AND 4 STAND-OFFS AT FOUR CORNERS AS SHOWN BELOW:



8. PLACE JP11 IN SHIP POSITION WHEN BOARD IS NOT IN USE.

UVLO SELECTION					
UV3	UV2	UV1	UV0	UVLO RISING	UVLO FALLING
0	0	0	0	4V	3V
0	0	0	1	5V	4V
0	0	1	0	6V	5V
0	0	1	1	7V	6V
0	1	0	0	8V	7V
0	1	0	1	8V	5V
0	1	1	0	10V	9V
0	1	1	1	10V	5V
1	0	0	0	12V	11V
1	0	0	1	12V	5V
1	0	1	0	14V	13V
1	0	1	1	14V	5V
1	1	0	0	16V	15V
1	1	0	1	16V	5V
1	1	1	0	18V	17V
1	1	1	1	18V	5V


FLOAT SELECTION AND BATTERY DISCONNECT THRESHOLDS OUTPUT VOLTAGE SELECTION

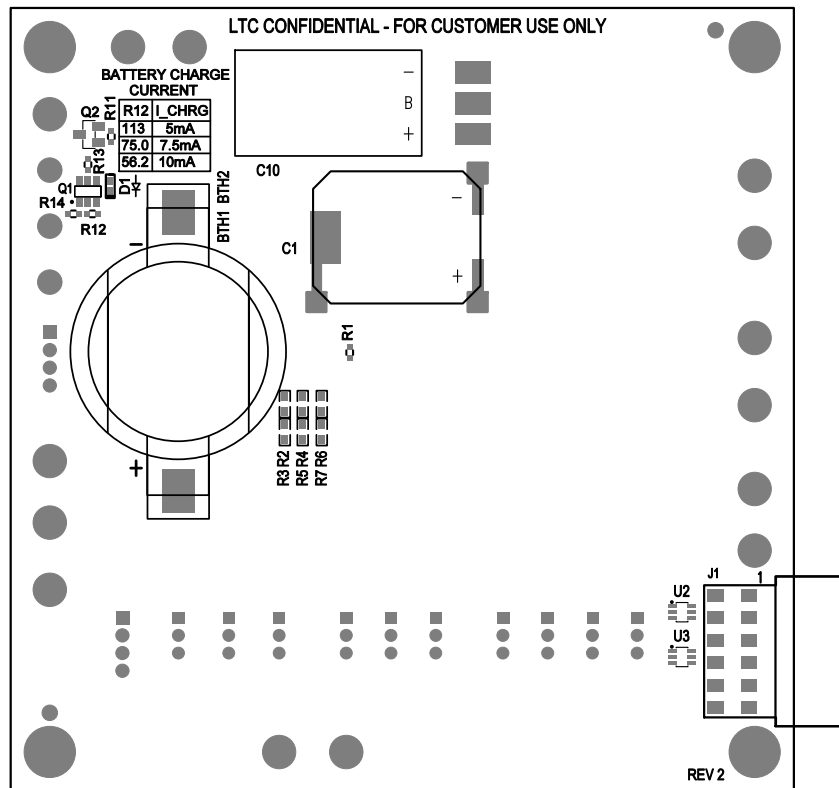
LBSEL	FLOAT1	FLOAT0	FLOAT	CONNECT	DISCONNECT
0	0	0	3.45V	2.37V	2.04V
0	0	1	4.0V	3.05V	2.70V
0	1	0	4.1V	3.05V	2.70V
0	1	1	4.2V	3.05V	2.70V
1	0	0	3.45V	2.86V	2.51V
1	0	1	4.0V	3.55V	3.20V
1	1	0	4.1V	3.55V	3.20V
1	1	1	4.2V	3.55V	3.20V

OUT2	OUT1	OUT0	VOUT
0	0	0	1.8V
0	0	1	2.5V
0	1	0	2.8V
0	1	1	3.0V
1	0	0	3.3V
1	0	1	3.6V
1	1	0	4.5V
1	1	1	5.0V

ILIM SELECTION INSTALL

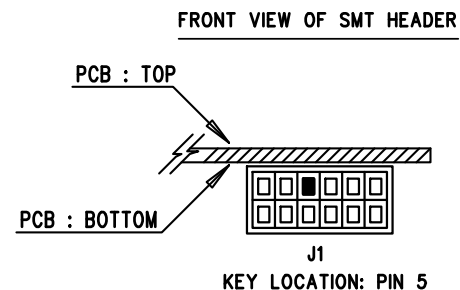
IPK2	IPK1	IPK0	ILIM
R3	R5	R7	5mA
R3	R5	R6	10mA
R3	R4	R7	15mA
R3	R4	R6	25mA
R2	R5	R7	50mA
R2	R5	R6	100mA
R2	R4	R7	150mA
R2	R4	R6	250mA


APPROVALS		 LINEAR TECHNOLOGY		1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 www.linear.com LTC CONFIDENTIAL- FOR CUSTOMER USE ONLY	
PCB DES.	NC				
APP ENG.	JD	TITLE: TOP ASSEMBLY DRAWING: NANOPOWER BUCK-BOOST DC/DC WITH ENERGY HARVESTING BATTERY CHARGER			
		SIZE	IC NO.	LTC3331EUH	REV.
		N/A		DEMO CIRCUIT 2151A	2
SCALE = NONE		FILENAME: DC2151A-2.PCB			SHT 1 of 2



NOTES: UNLESS OTHERWISE SPECIFIED

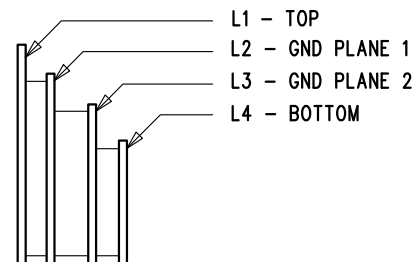
1. C1 AND C10 ARE NOT TO BE SOLDERED USING RE-FLOW AND FLOW PROFILES.
2. FOR C10 SOLDERING IRON TEMP NEEDS TO BE 350 DEG C +/-10 DEG C.
SOLDERING IRON TIME = 3.0+1/-0 SECONDS.
3. ASSEMBLE C1 AND C10 AFTER BOARDS ARE CLEANED. DO NOT WASH C1 AND C10.
4. ENSURE HEADER KEY FOR J1 IS INSTALLED AND LOCATED AS SHOWN BELOW:



APPROVALS		 LINEAR TECHNOLOGY 1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 www.Linear.com LTC CONFIDENTIAL - FOR CUSTOMER USE ONLY	
PCB DES.	NC		
APP ENG.	JD	TITLE: BOTTOM ASSEMBLY DRAWING: NANOPOWER BUCK-BOOST DC/DC WITH ENERGY HARVESTING BATTERY CHARGER	
		SIZE	IC NO. LTC3331EUH
		N/A	DEMO CIRCUIT 2151A
SCALE = NONE		FILENAME: DC2151A-2.PCB	REV. 2
		SHT 2 of 2	

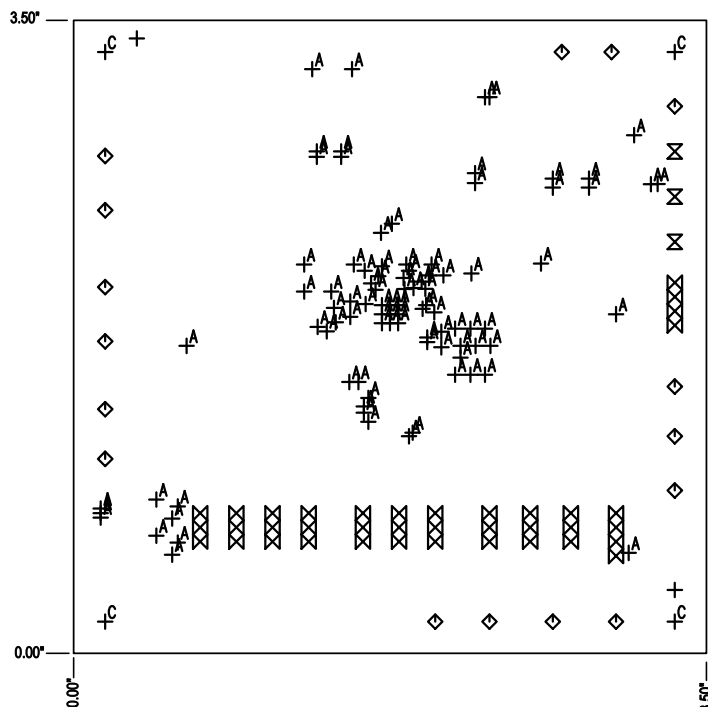
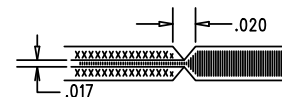
REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	2	PROTOTYPE FAB	JD	1-24-14

LAYER STRUCTURE

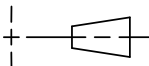

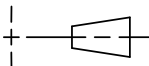


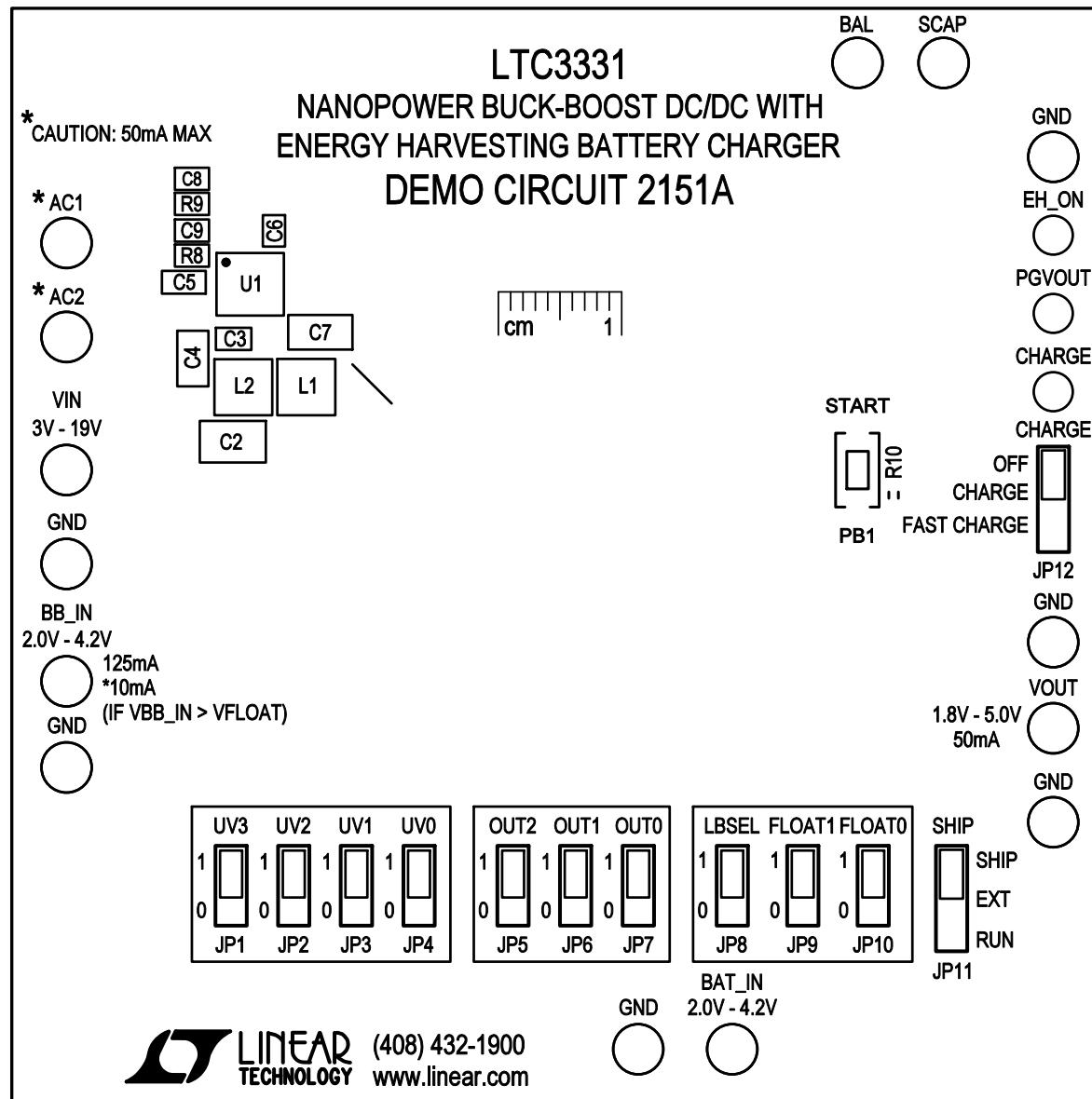
NOTES: UNLESS OTHERWISE SPECIFIED

- FAB PER IPC-A-600.
- MATERIAL: -LEAD FREE ASSEMBLY COMPLIANT, ISOLA FR-370HR OR EQUIVALENT.
-FINISHED THICKNESS TO BE 0.062" +/- .005"
-TOTAL OF 4 LAYERS WITH 1 OZ. CU ON THE OUTER LAYERS
AND 1 OZ. CU ON THE INNER LAYERS.
-FLAMMABILITY RATING: 94 V-0 MINIMUM.
- SIZE: CUT TO DIMENSIONS AND TOLERANCES SHOWN.
0.00 ARE PRIMARY DATUMS.
- DRILLING: -DRILL HOLES PER SCHEDULE. PLATE THROUGH
HOLES WITH COPPER, 0.001" THICK MIN.
-ALL HOLE SIZES ARE SPECIFIED AFTER PLATING.
-HOLE LOCATION TOLERANCES ARE +/-0.003"
IN RELATION TO CENTER
- FINISH: -SMOBC USING LPI BOTH SIDES, COLOR GREEN.
-GOLD IMMERSION BOTH SIDES.
(LEAD FREE SOLDER CAN BE USED FOR PROTOTYPE)
-FOR SILKSCREEN: BOTH SIDES USE WHITE NON-CONDUCTIVE INK.
- DO NOT ALTER ARTWORK e.g. TO ADD LOGO OR DATE CODE.
PAD SIZE CAN BE MODIFIED TO MEET END FINISH.
- PCBS ARE TO BE RoHS COMPLIANT.
- DO NOT ALTER SOLDER MASK MAINTAIN .0018" OVERSIZE
ON SMT PADS. A .005" WEBBING IS REQUIRED BETWEEN SMD PADS.
- SCORING FOR PANELIZED PCB: "PRODUCTION FAB ONLY"



SIZE	QTY	SYM	PLATED	TOL
0.07	2	+	NO	+/-0.003
0.094	16	◇	YES	+/-0.003
0.063	3	⊗	YES	+/-0.003
0.035	38	⊕	YES	+/-0.003
0.01	93	⊖	YES	+/-0.003
0.19	4	⊕	YES	+/-0.003

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON ANGLE ±1 0.XX" = ±0.01" 0.XXX" = ±0.005" INTERPRET DIM AND TOL PER ASME Y14.5M-1994 THIRD ANGLE PROJECTION 	APPROVALS		 <div>1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 www.linear.com LTC CONFIDENTIAL- FOR CUSTOMER USE ONLY</div>		
	PCB DES.	NC			
	APP ENG.	JD			
	TITLE: FABRICATION DRAWING: NANOPOWER BUCK-BOOST DC/DC WITH ENERGY HARVESTING BATTERY CHARGER		SIZE N/A	IC NO. LTC3331EUH DEMO CIRCUIT 2151A	REV. 2
	DO NOT SCALE DRAWING				
	SCALE: NONE				
		FILENAME: DC2151A-2.PCB		SHT 1 of 1	



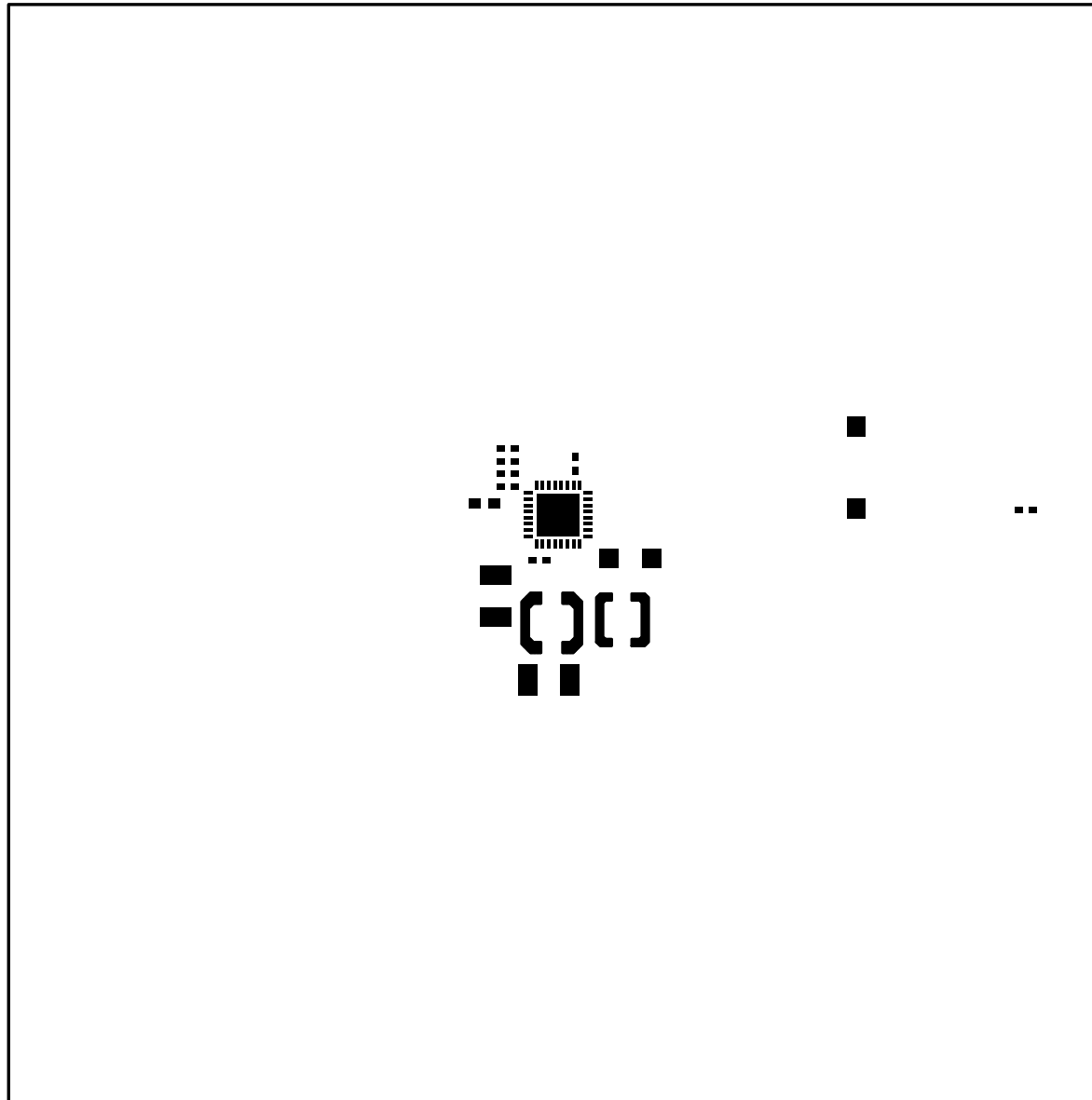
SILKSCREEN TOP

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
 ENERGY HARVESTING BATTERY CHARGER

DATE: 2-21-14



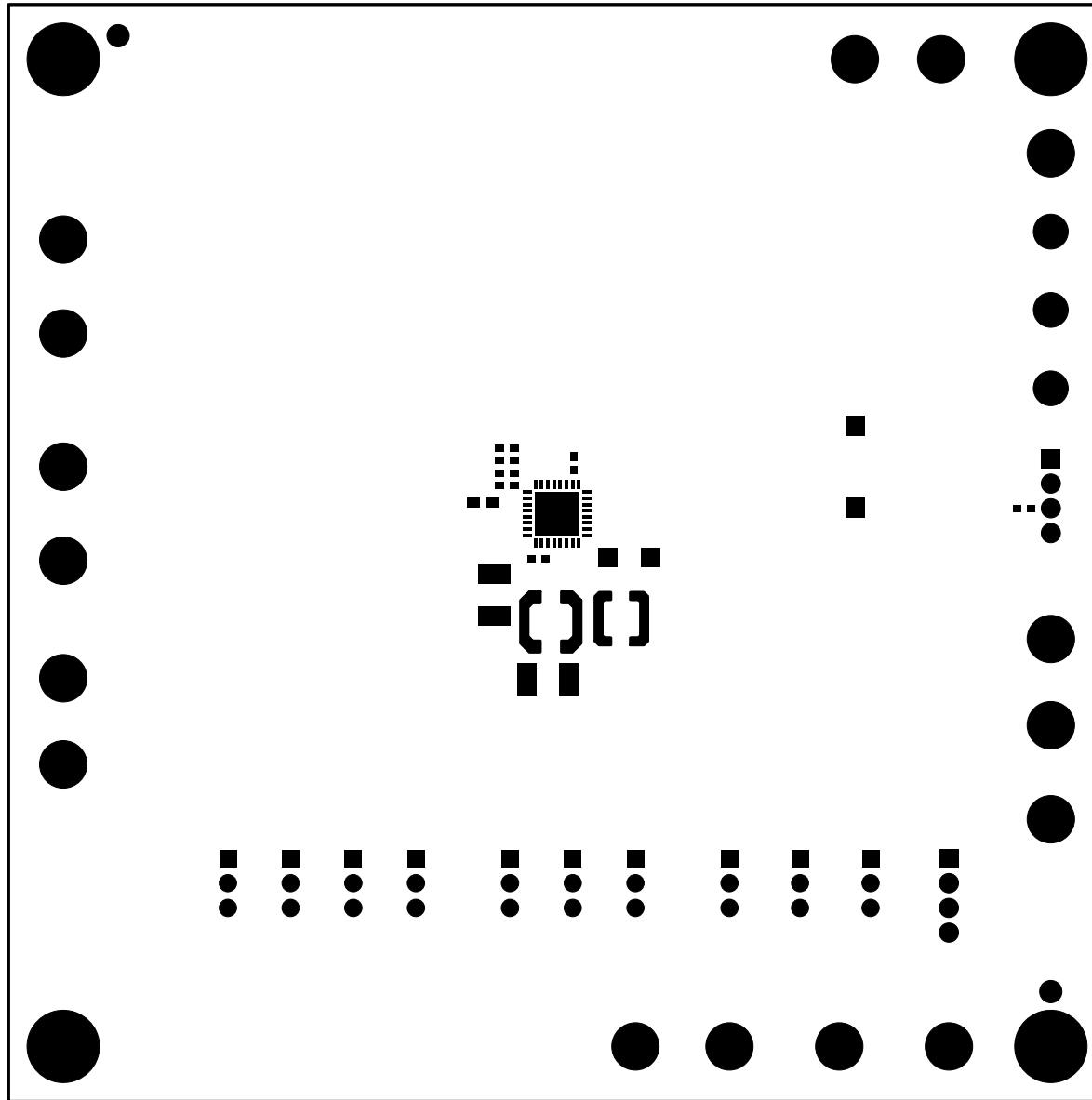
PASTEMASK TOP

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



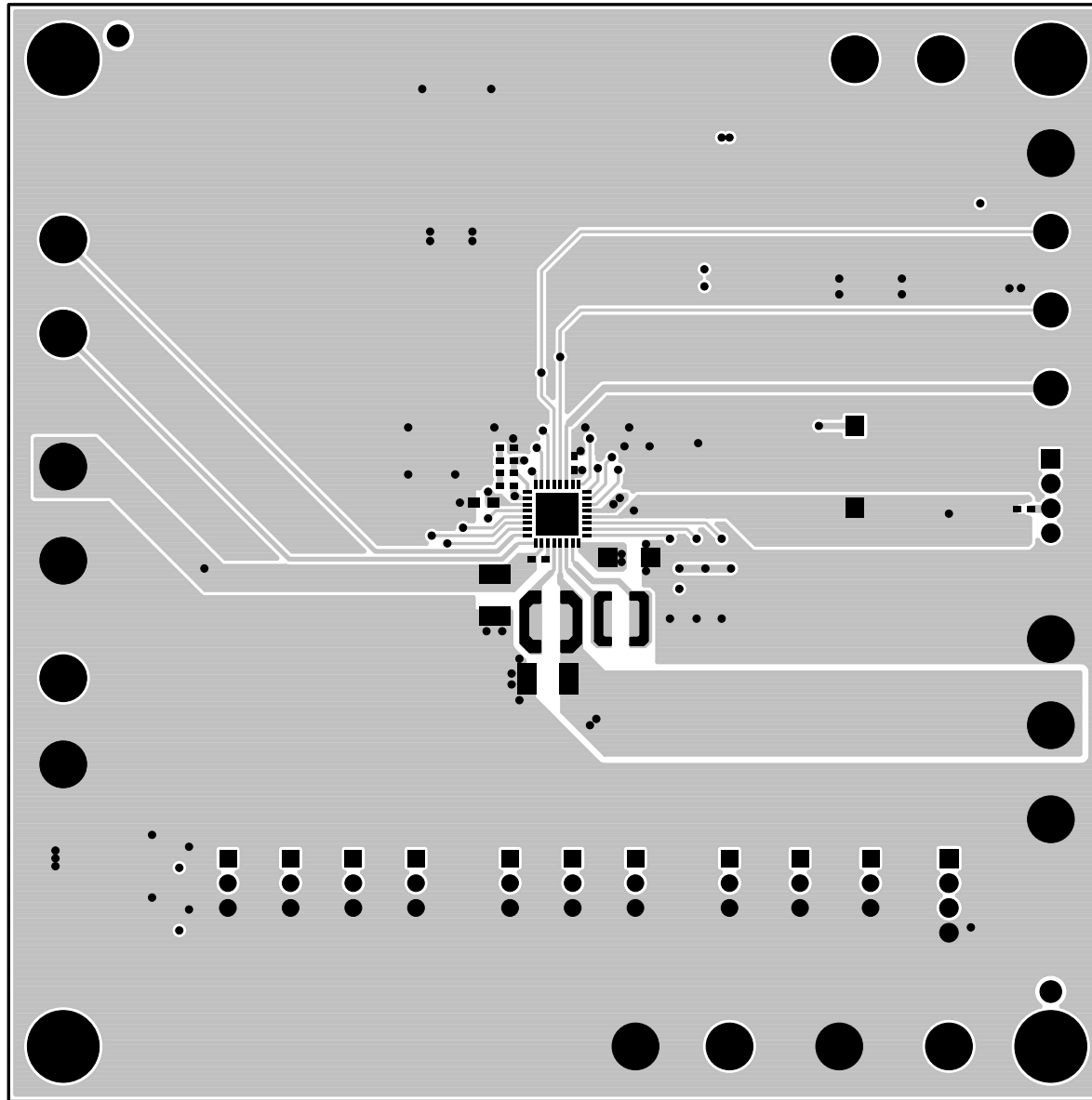
SOLDERMASK TOP

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



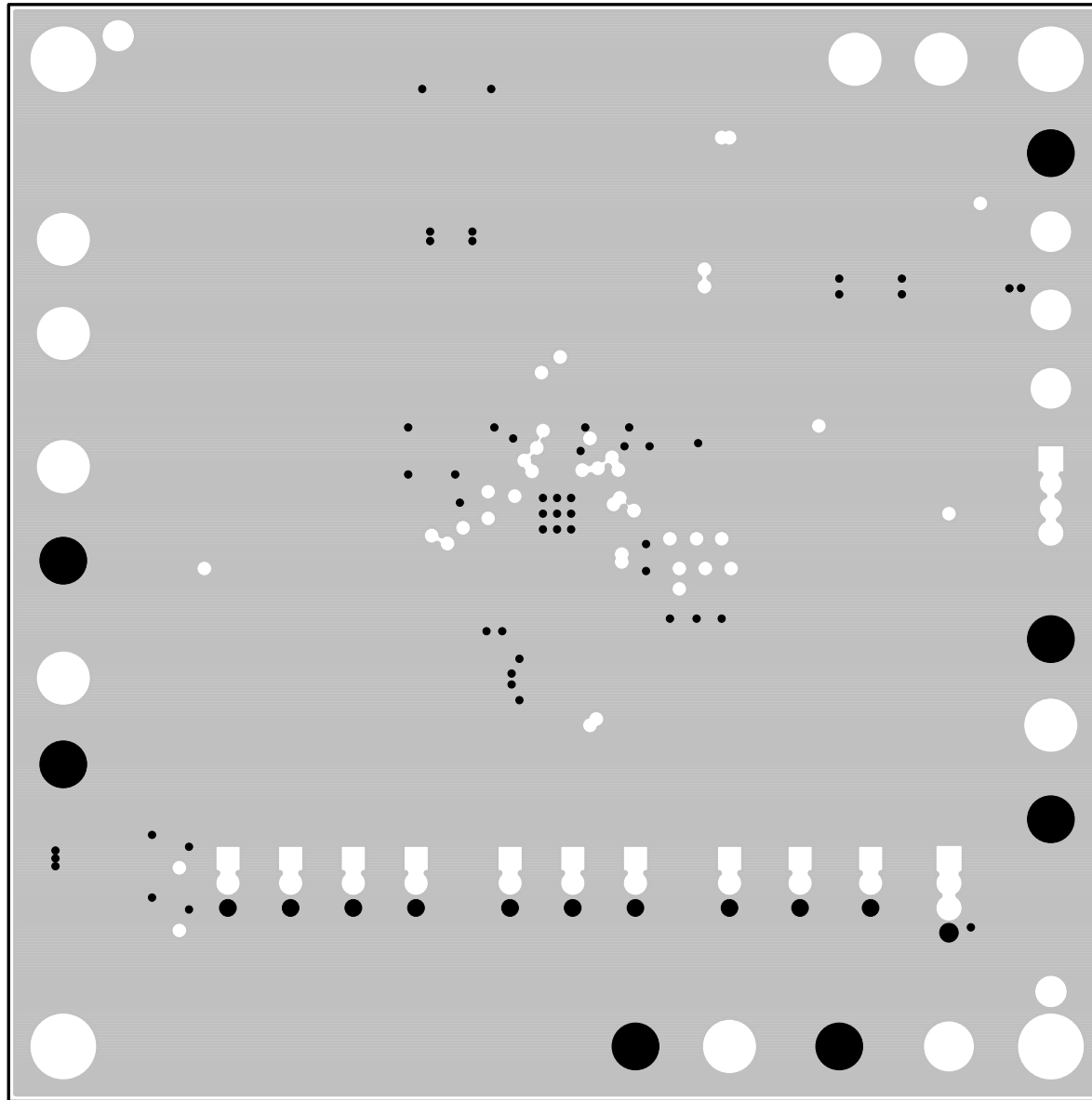
TOP LAYER

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



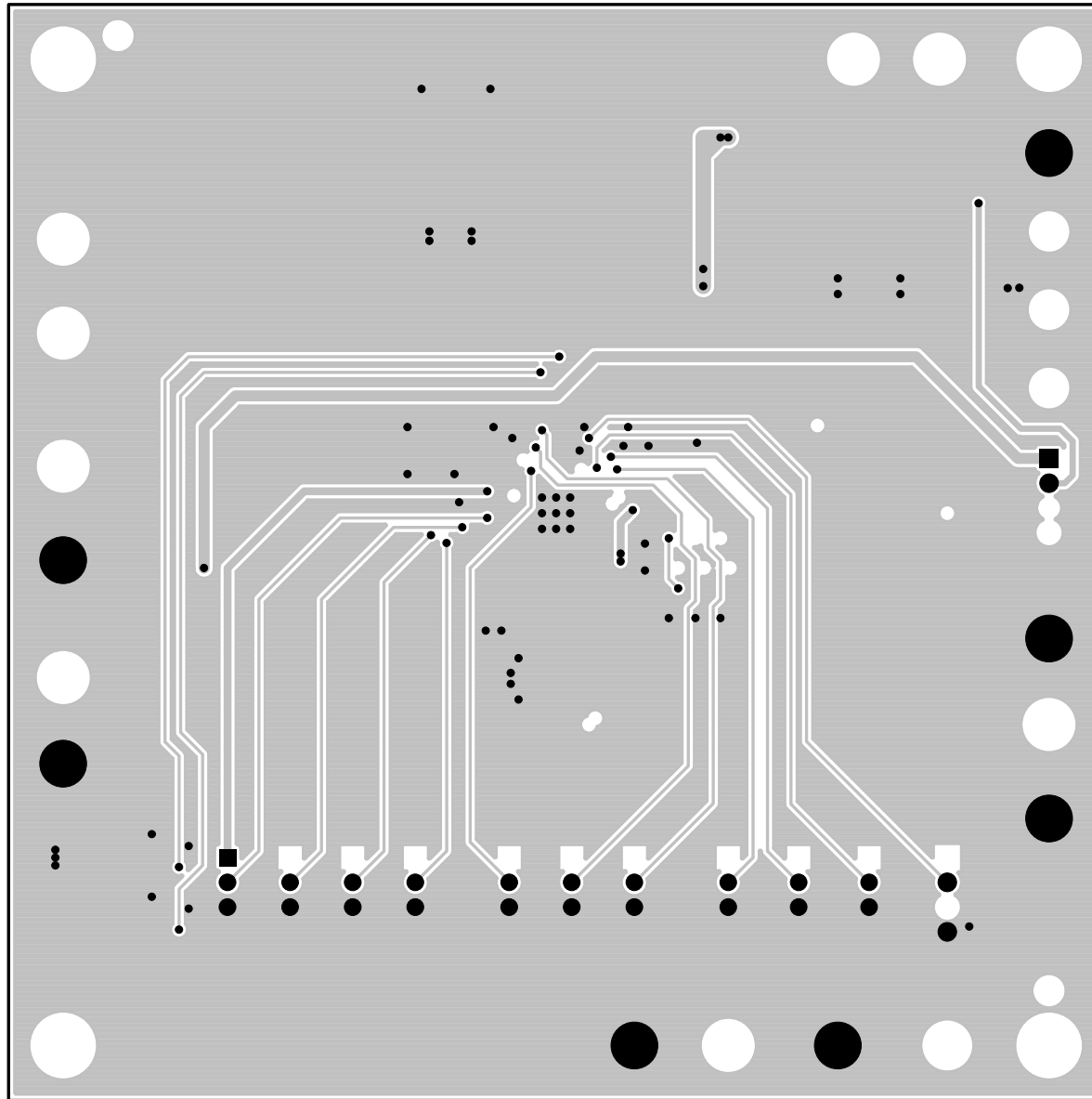
LAYER 2 GND PLANE

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



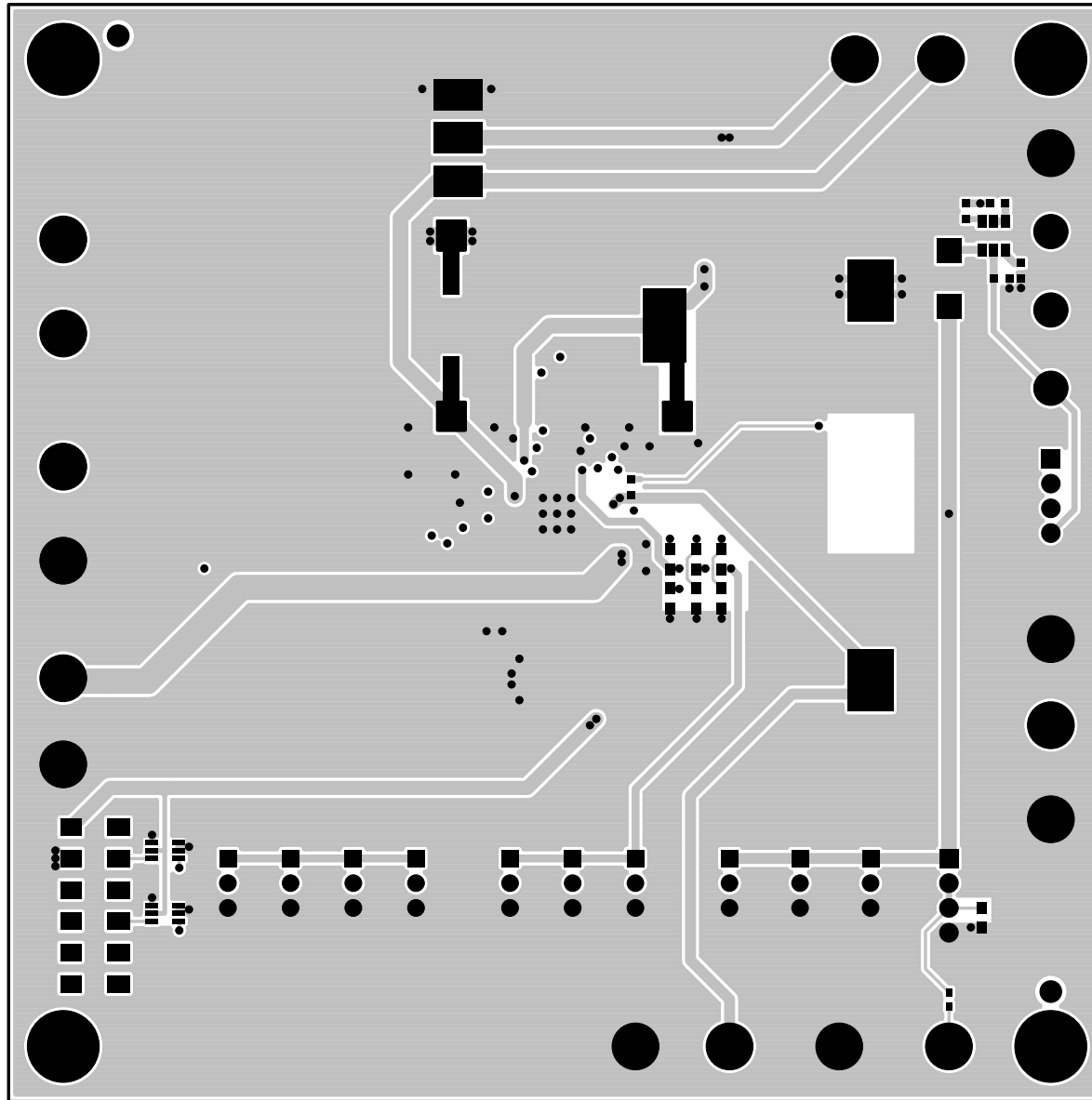
LAYER 3 GND PLANE

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



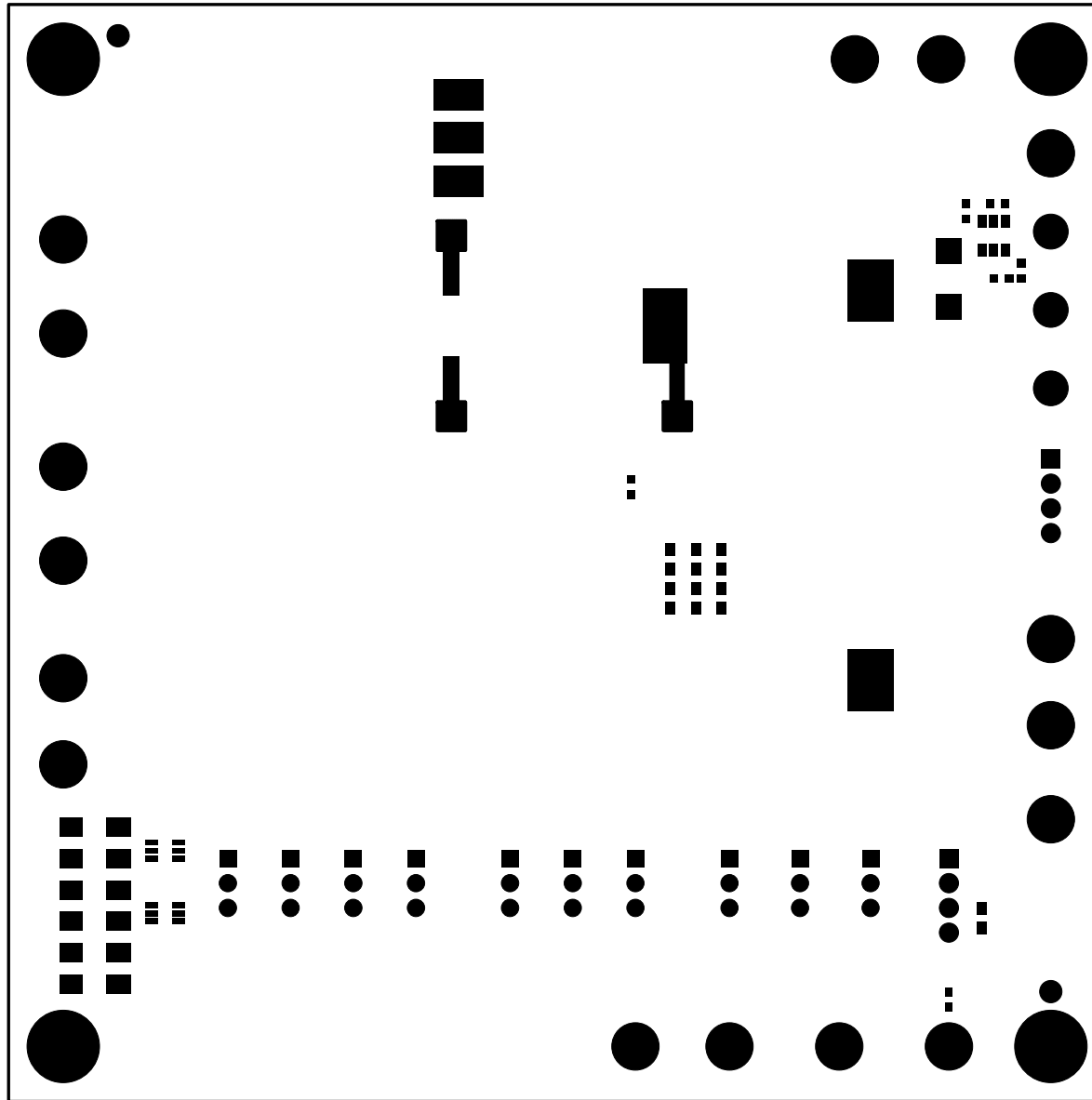
BOTTOM SIDE

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



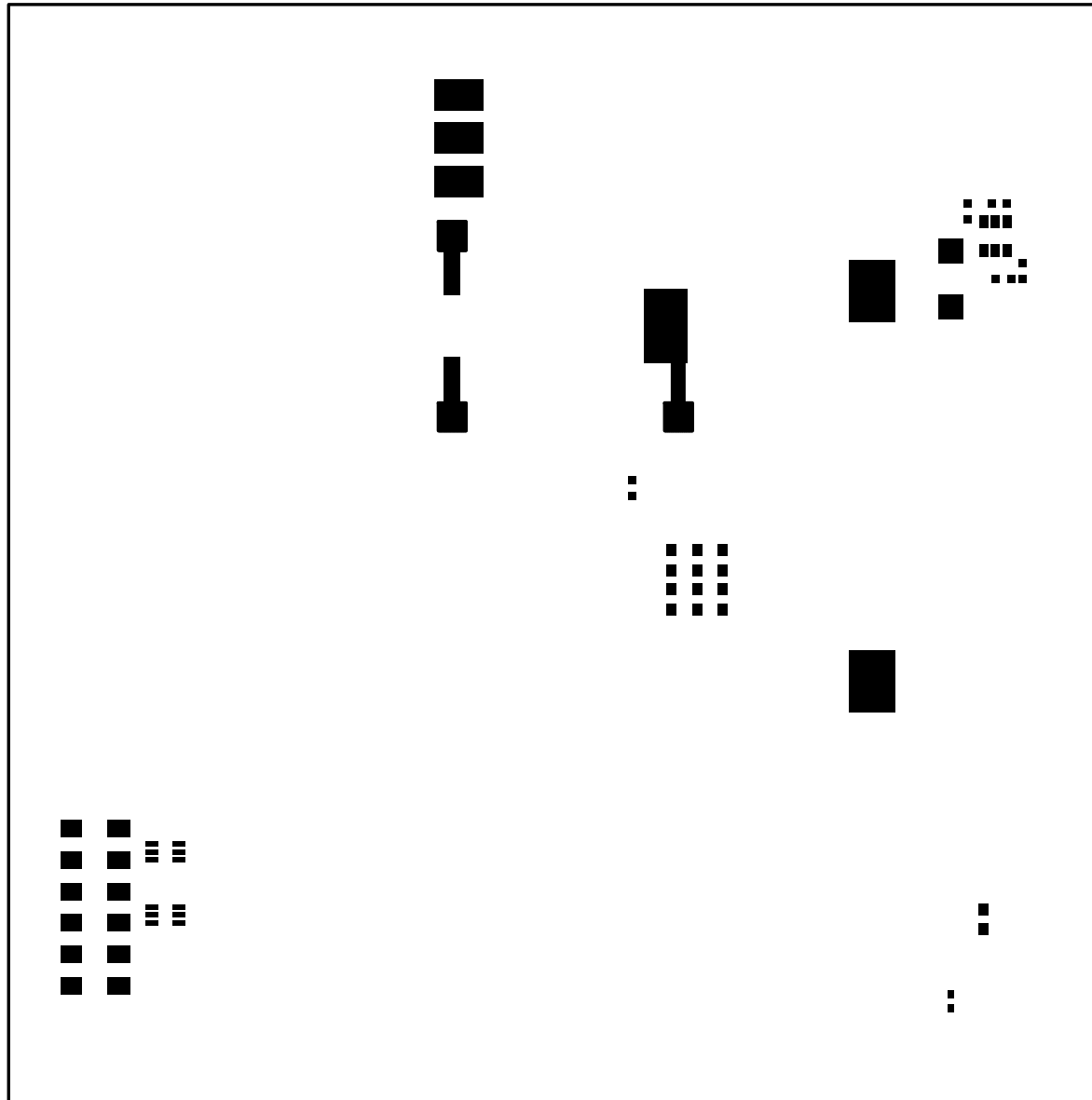
SOLDERMASK BOTTOM

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



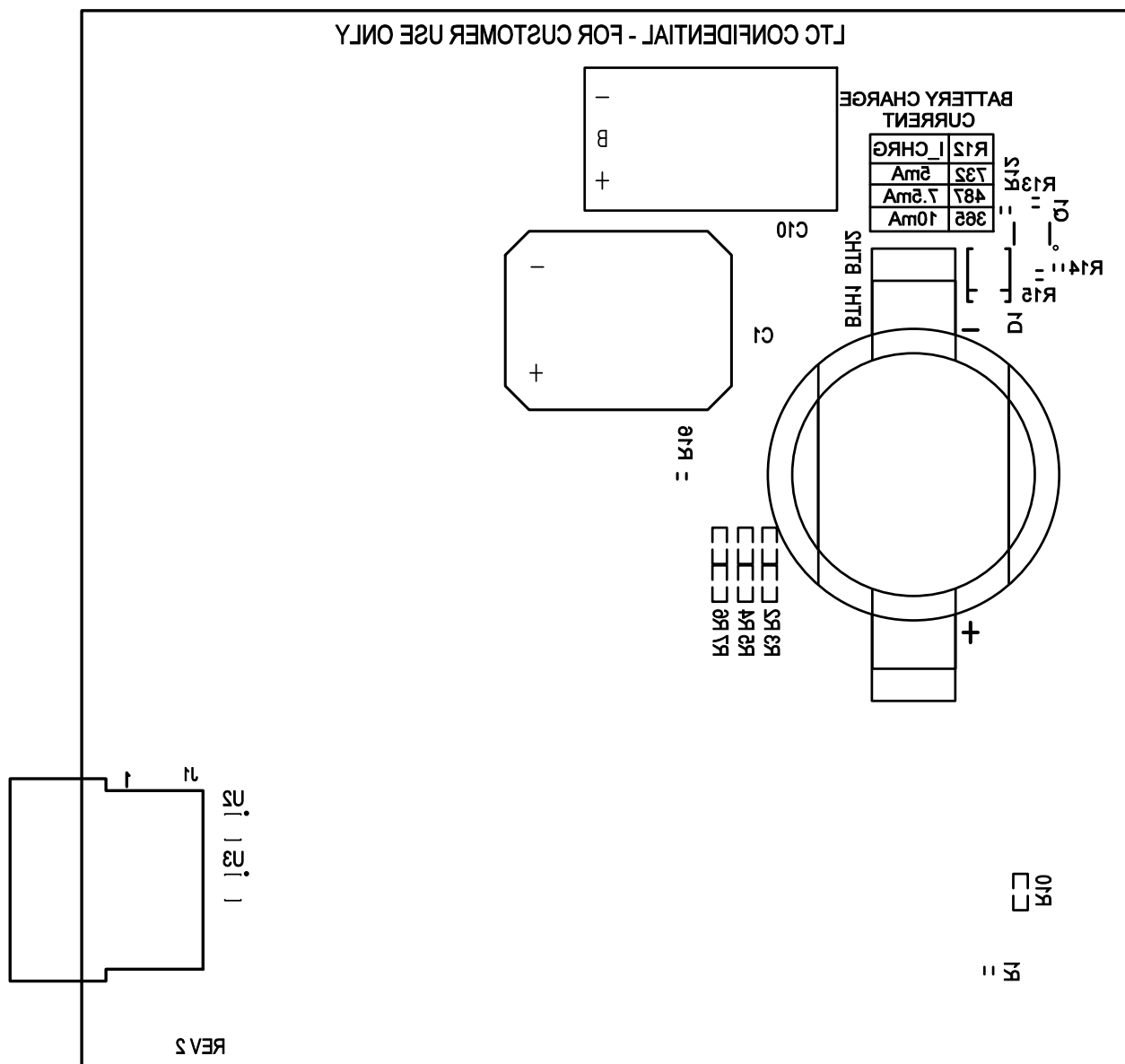
PASTEMASK BOTTOM

LINEAR TECH CORP.

DEMO CIRCUIT 2151-2 * LTC3331

NANOPOWER BUCK - BOOST DC / DC WITH
ENERGY HARVESTING BATTERY CHARGER

DATE: 1 - 24 - 14



SILKSCREEN BOTTOM
 LINEAR TECH CORP.
 DEMO CIRCUIT 2151-2 * LTC3331
 NANOPOWER BUCK - BOOST DC / DC WITH
 ENERGY HARVESTING BATTERY CHARGER
 DATE: 1 - 24 - 14