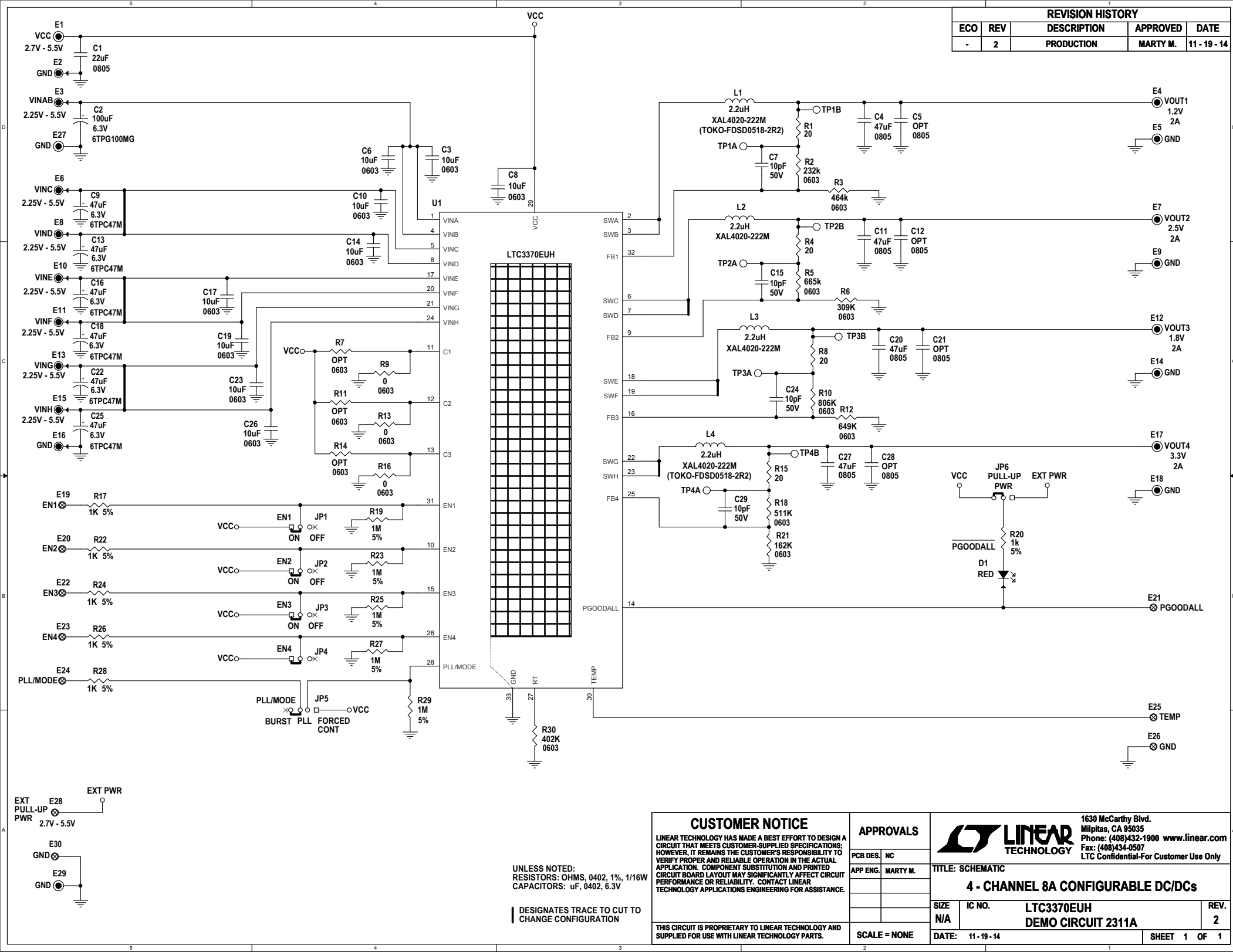


REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	2	PRODUCTION	MARTY M.	11 - 19 - 14



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.	MARTY M.
SCALE = NONE	

1630 McCarthy Blvd.
 Milpitas, CA 95035
 Phone: (408)432-1900 www.linear.com
 Fax: (408)434-0507
 LTC Confidential-For Customer Use Only

TITLE: SCHEMATIC

4 - CHANNEL 8A CONFIGURABLE DC/DCs

SIZE	IC NO.	LTC3370EUH	REV.
N/A		DEMO CIRCUIT 2311A	2

DATE: 11 - 19 - 14

SHEET 1 OF 1

Linear Technology Corporation

LTC3370EUH

ENGR: M. Merchant (011-087)

4 CHANNEL 8A CONFIGURABLE BUCK DC-DCS

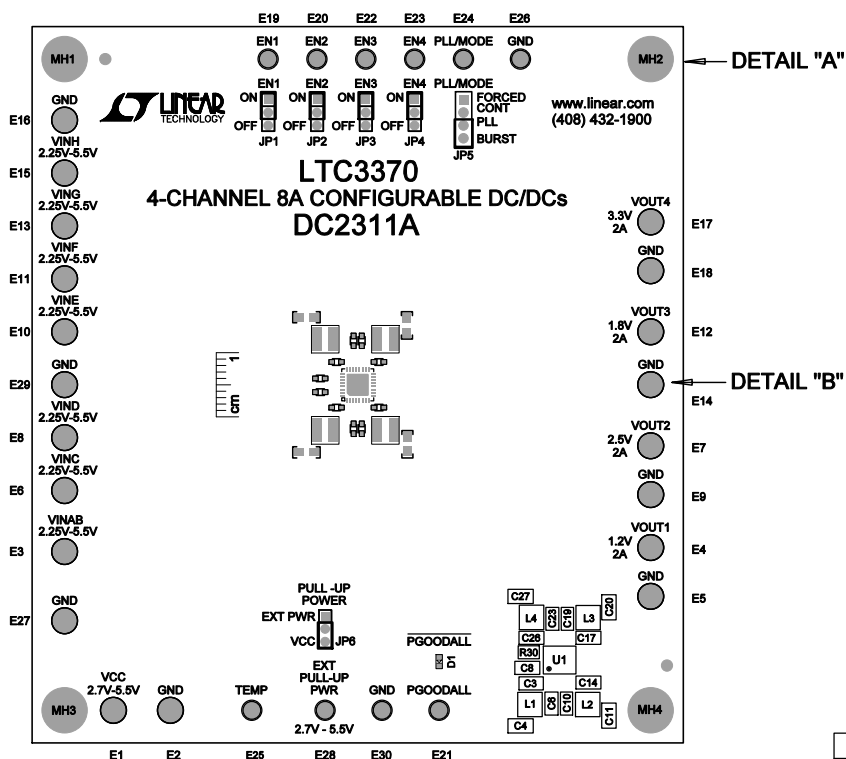
BILL OF MATERIALS**DC2311A-2**

12/11/2014

Item	Qty	Reference	Part Description	Manufacturer / Part #
				NUMBER OF BOARDS =
1	1	C1	CAP, CHIP, X5R, 22 μ F, \pm 20%, 6.3V, 0805	TAIYO YUDEN, JMK212BJ226MG-T
2	1	C2	CAP, POSCAP, 100 μ F, \pm 20%, 6.3V, SMT	PANASONIC, 6TPG100MG
3	9	C3,C6,C8,C10,C14,C17,C19,C23,C26	CAP, CHIP, X5R, 10 μ F, \pm 20%, 6.3V, 0603	TDK, C1608X5R0J106M
4	4	C4,C11,C20,C27	CAP, CHIP, X5R, 47 μ F, \pm 20%, 6.3V, 0805	TAIYO YUDEN, JMK212BJ476MG
5	0	C5,C12,C21,C28 (OPT)	CAP, CHIP, 0805	
6	4	C7,C15,C24,C29	CAP, CHIP, NPO, 10pF, \pm 5%, 50V, 0402	AVX, 04025A100JAT2A
7	6	C9,C13,C16,C18,C22,C25	CAP, POSCAP, 47 μ F, \pm 20%, 6.3V, SMT	PANASONIC, 6TPC47M
8	1	D1	DIODE, LED, SUPER RED DIFF, 0603 SMD	LUMEX, SML-LX0603SRW-TR
9	20	E1-E18,E27,E29	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0
10	10	E19-E26,E28, E30	TURRET, 0.061 DIA	MILL-MAX, 2308-2-00-80-00-00-07-0
11	5	JP1-JP4,JP6	2mm to HEADER 1X3 , 2mm	SAMTEC, TMM-103-02-L-S
12	1	JP5	2mm to HEADER 1X4 , 2mm	SAMTEC, TMM-104-02-L-S
13	6	JP1-JP6	SHUNT, 2mm	SAMTEC, 2SN-KB-G
14	4	L1-L4	IND, SMT, 2.2 μ H, 38m Ω , \pm 20%, 5.5A, 4mmX4mm	COILCRAFT, XAL4020-222MEB
15	4	R1,R4,R8,R15	RES, CHIP, 20 Ω , \pm 1%, 1/16W, 0402	VISHAY, CRCW040220R0FKED
16	1	R2	RES, CHIP, 232K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603232KFKEDA
17	1	R3	RES, CHIP, 464K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603464KFKEDA
18	1	R5	RES, CHIP, 665K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603665KFKEDA
19	1	R6	RES, CHIP, 309K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603309KFKEDA
20	0	R7,R11,R14 (OPT)	RES, CHIP, 1/10W, 0603	
21	3	R9,R13,R16	RES, CHIP, 0 Ω JUMPER, 1/10W, 0603	VISHAY, CRCW06030000Z0EC
22	1	R10	RES, CHIP, 806K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603806KFKEA
23	1	R12	RES, CHIP, 649K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603649KFKEA
24	6	R17,R20,R22,R24,R26,R28	RES, CHIP, 1K Ω , \pm 5%, 1/16W, 0402	VISHAY, CRCW04021K00JNED
25	1	R18	RES, CHIP, 511K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603511KFKEA
26	5	R19,R23,R25,R27,R29	RES, CHIP, 1.00M Ω , \pm 5%, 1/16W, 0402	VISHAY, CRCW04021M00JNED
27	1	R21	RES, CHIP, 162K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603162KFKEA
28	1	R30	RES, CHIP, 402K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603402KFKEA
29	1	U1	4-CHANNEL 8A CONFIGURABLE BUCK DC -DCs	LINEAR TECH., LTC3370EUH#PBF
30	4		STAND-OFF NYLON, 0.375" TALL (SNAP-ON)	KEYSTONE, 8832 (SNAP ON)
31	1		FAB,PRINTED CIRCUIT BOARD	DEMO CIRCUIT DC2311A-2

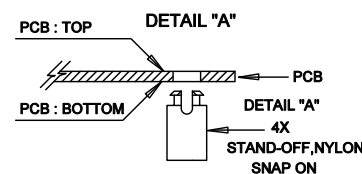
Item	Qty	Reference	Part Description	Manufacturer / Part #
REQUIRED CIRCUIT COMPONENTS:				
1	1	C1	CAP, CHIP, X5R, 22 μ F, \pm 20%, 6.3V, 0805	TAIYO YUDEN, JMK212BJ226MG-T
2	9	C3,C6,C8,C10,C14,C17, C19,C23,C26	CAP, CHIP, X5R, 10 μ F, \pm 20%, 6.3V, 0603	TDK, C1608X5R0J106M
3	4	C4,C11,C20,C27	CAP, CHIP, X5R, 47 μ F, \pm 20%, 6.3V, 0805	TAIYO YUDEN, JMK212BJ476MG
4	4	C7,C15,C24,C29	CAP, CHIP, NPO, 10pF, \pm 5%, 50V, 0402	AVX, 04025A100JAT2A
5	4	L1-L4	IND, SMT, 2.2 μ H, 38m Ω , \pm 20%, 5.5A, 4mmX4mm	COILCRAFT, XAL4020-222MEC
6	2	R2	RES, CHIP, 232K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603232KFKEA
7	1	R3	RES, CHIP, 464K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603464KFKEA
8	1	R5	RES, CHIP, 665k Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603665KFKEA
9	1	R6	RES, CHIP, 309K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603309KFKEA
10	1	R10	RES, CHIP, 806K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603806KFKEA
11	1	R12	RES, CHIP, 649K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603649KFKEA
12	1	R18	RES, CHIP, 511K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603511KFKEA
13	1	R21	RES, CHIP, 162K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603162KFKEA
14	1	R30	RES, CHIP, 402K Ω , \pm 1%, 1/10W, 0603	VISHAY, CRCW0603402KFKEA
15	1	U1	4-CHANNEL 8A CONFIGURABLE BUCK DC-DCs, TSSOP	LINEAR TECH., LTC3370EUH#PBF
ADDITIONAL DEMO BOARD CIRCUIT COMPONENTS:				
16	1	C2	CAP, POSCAP, 100 μ F, \pm 20%, 6.3V, SMT	PANASONIC, 6TPG100MG
17	0	C5,C12,C21,C28 (OPT)	CAP, CHIP, 0805	
18	6	C6,C10,C14,C17,C19, C23	CAP, POSCAP, 47 μ F, \pm 20%, 6.3V, SMT	PANASONIC, 6TPC47M
19	6	C9,C13,C16,C18,C22, C25	CAP, POSCAP, 47 μ F, \pm 20%, 6.3V, SMT	PANASONIC, 6TPC47M
20	1	D1	DIODE, LED, SUPER RED DIFF, 0603 SMD	LUMEX, SML-LX0603SRW-TR
21	4	R1,R4,R8,R15	RES, CHIP, 20 Ω , \pm 1%, 1/16W, 0402	VISHAY, CRCW040220R0FKED
22	0	R7,R11,R14 (OPT)	RES, CHIP, 1/10W, 0603	
23	3	R9,R13,R16	RES, CHIP, 0 Ω JUMPER, 1/10W, 0603	VISHAY, CRCW06030000Z0EA
24	6	R17,R20,R22,R24,R26,R 28	RES, CHIP, 1K Ω , \pm 5%, 1/16W, 0402	VISHAY, CRCW04021K00JNED
25	5	R19,R23,R25,R27,R29	RES, CHIP, 1.00M Ω , \pm 5%, 1/16W, 0402	VISHAY, CRCW04021M00JNED
HARDWARE				
26	20	E1-E18,E27,E29	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0
27	10	E19-E26,E28,E30	TURRET, 0.061 DIA	MILL-MAX, 2308-2-00-80-00-00-07-0
28	5	JP1-JP4,JP6	2mm to HEADER 1X3, 2mm	SAMTEC, TMM-103-02-L-S
29	1	JP5	2mm to HEADER 1X4, 2mm	SAMTEC, TMM-104-02-L-S
30	6	JP1-JP6	SHUNT, 2mm	SAMTEC, 2SN-KB-G
31	4		STAND-OFF NYLON, 0.375" TALL (SNAP-ON)	KEYSTONE, 8832 (SNAP ON)

REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	2	PRODUCTION FAB	MARTY M.	11-19-14

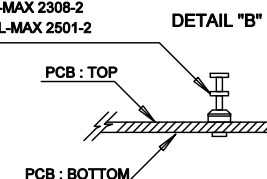


NOTES: UNLESS OTHERWISE SPECIFIED

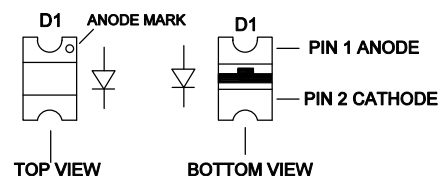
1. WORKMANSHIP SHALL BE IN ACCORDANCE WITH IPC-A-610.
2. ASSEMBLY REFLOW PROFILE SHALL BE IN ACCORDANCE WITH J-STD-020 WITH MAXIMUM SOLDER TEMPERATURE OF 250 DEGREES CELSIUS.
3. PARTS TO OMIT WILL BE SPECIFIED ON THE BILL OF MATERIALS. LOCATIONS OF OMITTED PARTS SHALL BE FREE OF SOLDER. MASK THE SOLDER 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.
6. DO NOT APPLY ANY KIND OF ASSEMBLY STAMP OR QA STAMP TO ANY BOARD.
7. INSTALL TURRETS, STAND-OFFS AND BANANA JACKS AS SHOWN BELOW:




(9 PLCS) : MILL-MAX 2308-2
(20 PLCS) : MILL-MAX 2501-2

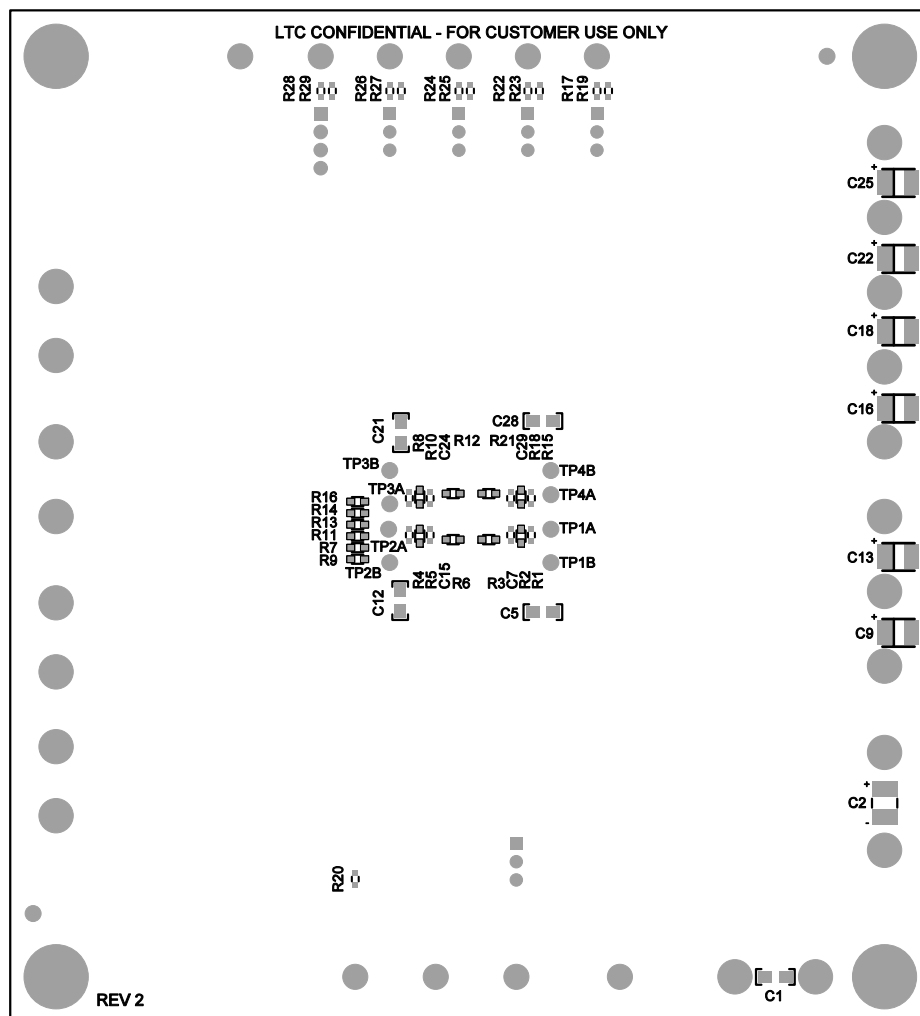



8. INSTALL LED D1-D4 AS SHOWN:



E

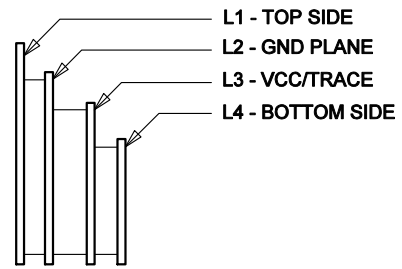
APPROVALS		 LINEAR TECHNOLOGY		1630 MCCARTHY BLVD MILPITAS, CA 95038 PH: (408)432-1900 www.Linear.com NOT FOR CUSTOMER USE ONLY	
PCB DES.	NC	TITLE: TOP ASSEMBLY DRAWING: 4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs			
APP ENG.	MARTY M.				
		SIZE	IC NO.	LTC3370	REV.
		N/A	DEMO CIRCUIT 2311A		2
SCALE = NONE		FILENAME:		DC2311A-2.PCB	SHT 1 of 2



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.	MARTY M.	TITLE: BOTTOM ASSEMBLY DRAWING: 4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs	
		SIZE	IC NO.
		N/A	LTC3370
			DEMO CIRCUIT 2311A
			REV. 2
SCALE = NONE		FILENAME:DC2311A-2.PCB	
		SHT 2 of 2	

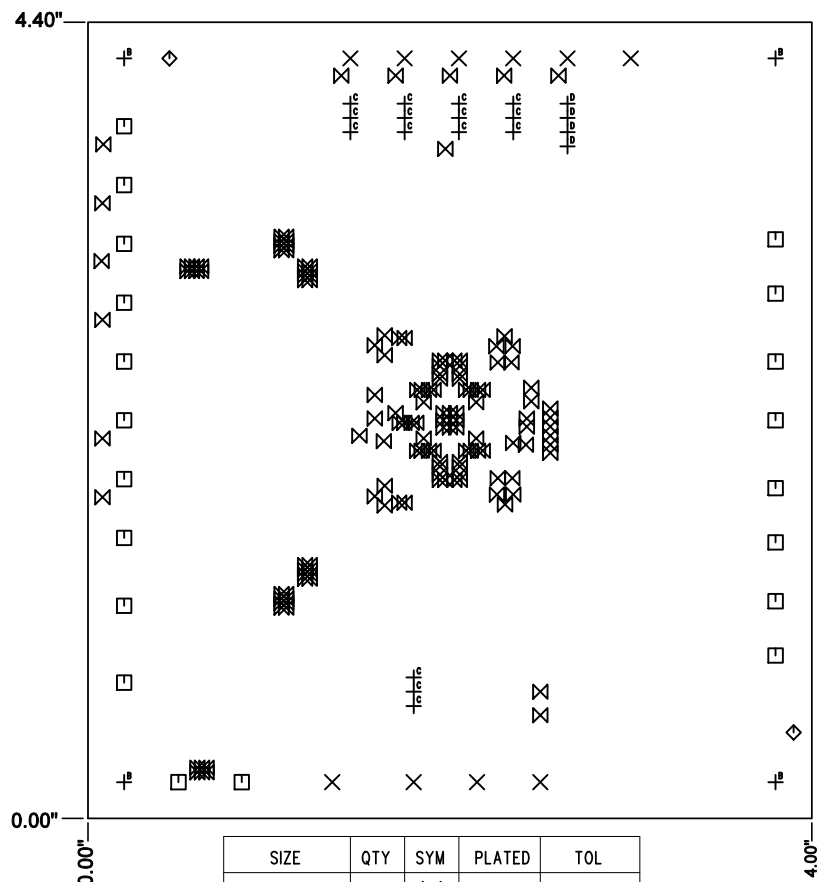
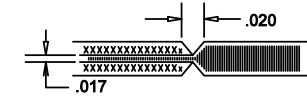
REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	2	PRODUCTION FAB	MARTY M.	11-19-14

LAYER STRUCTURE



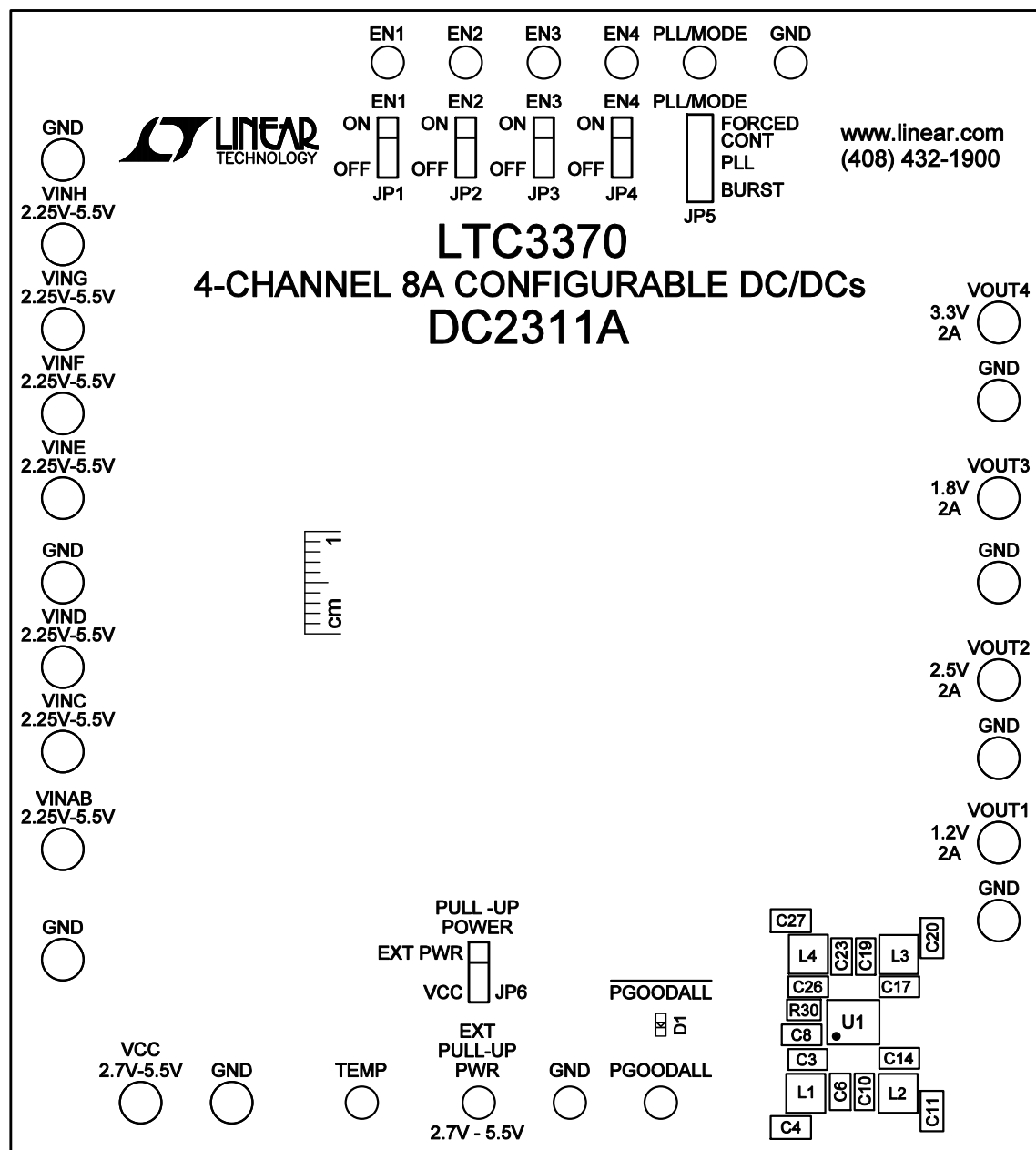
NOTES: UNLESS OTHERWISE SPECIFIED

- FAB PER IPC-A-600.
- MATERIAL: -EPOXY FIBERGLASS, NEMA GRADE FR-4
-FINISHED THICKNESS TO BE 0.062" +/- .005"
-TOTAL OF 4 LAYERS WITH 2 OZ. CU ON THE OUTER LAYERS
AND 2 OZ. CU ON THE INNER LAYERS.
-FLAMMABILITY RATING: 94 V-O 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
0.063	10	X	YES	+/- .003"
0.094	20	□	YES	+/- .003"
0.07	2	◇	NO	+/- .003"
0.01	150	⊗	YES	+/- .003"
0.187	4	⊥ ^B	YES	+/- .003"
0.031	15	⊥ ^C	YES	+/- .003"
0.037	4	⊥ ^D	YES	+/- .003"

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON ANGLE: ±1° 0.XXX" = ±0.005" INTERPRET DIM AND TOL PER ASME Y14.5M-1994	APPROVALS		 1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 www.Linear.com LTC CONFIDENTIAL- FOR CUSTOMER USE ONLY
	PCB DES.	NC	
	APP ENG.	MARTY M.	
	THIRD ANGLE PROJECTION		
			TITLE: FABRICATION DRAWING: 4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
			SIZE: N/A IC NO. LTC3370 DEMO CIRCUIT 2311A REV. 2
DO NOT SCALE DRAWING	SCALE: NONE		FILENAME: DC2311A-2.PCB SHT 1 of 1



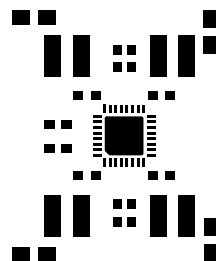
TOP SILKSCREEN

LINEAR TECHNOLOGY

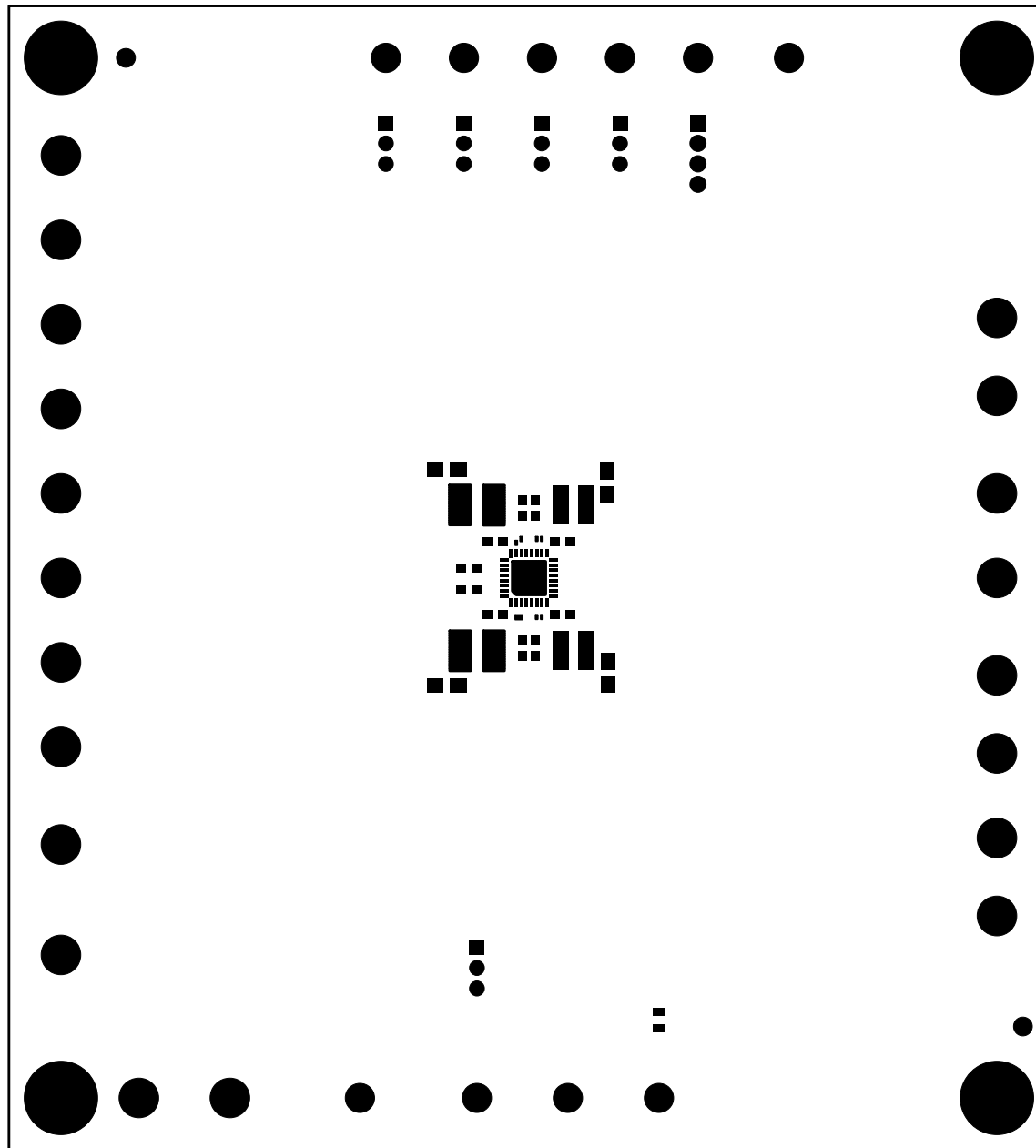
DC2311A-2 * LTC3370

4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs

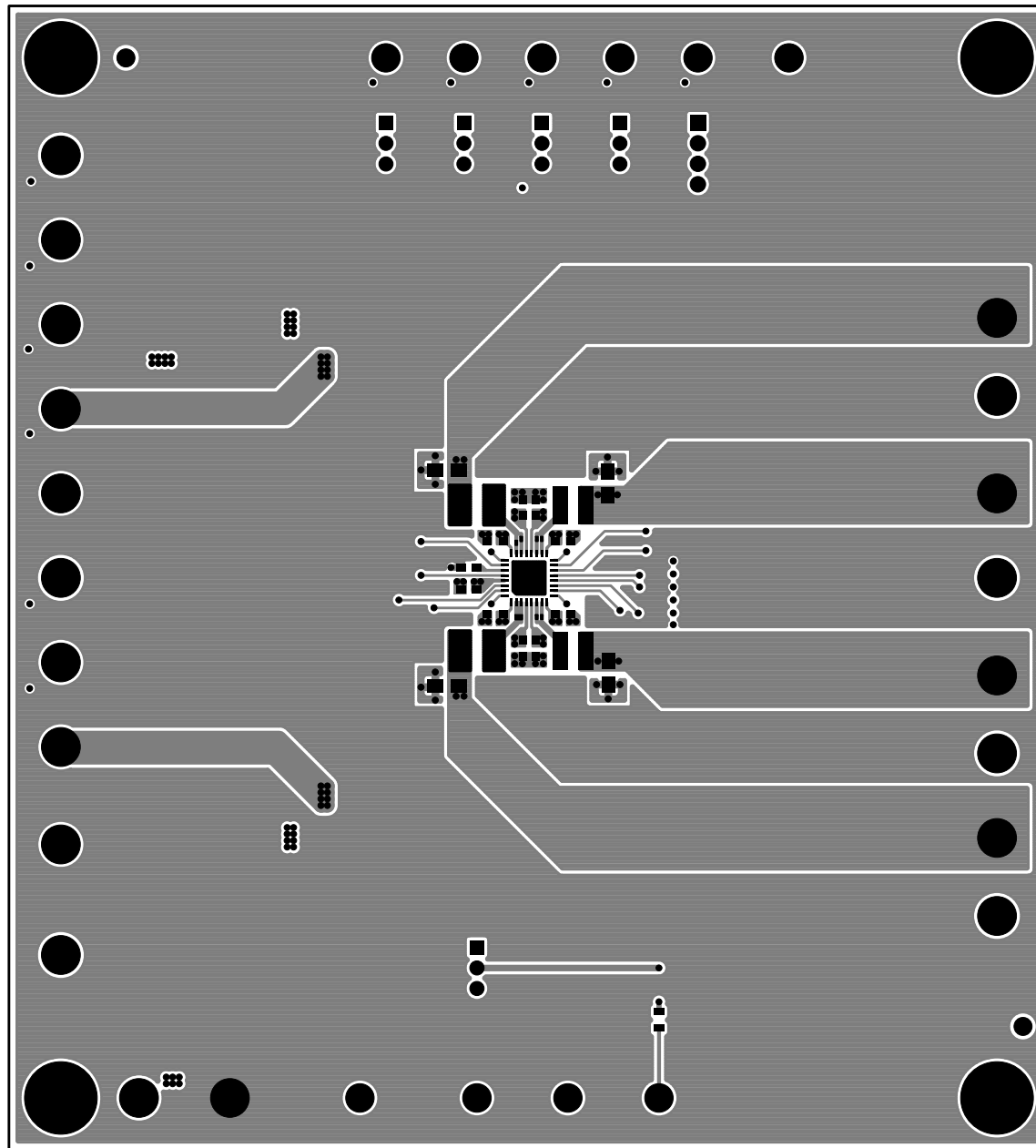
11-19-14



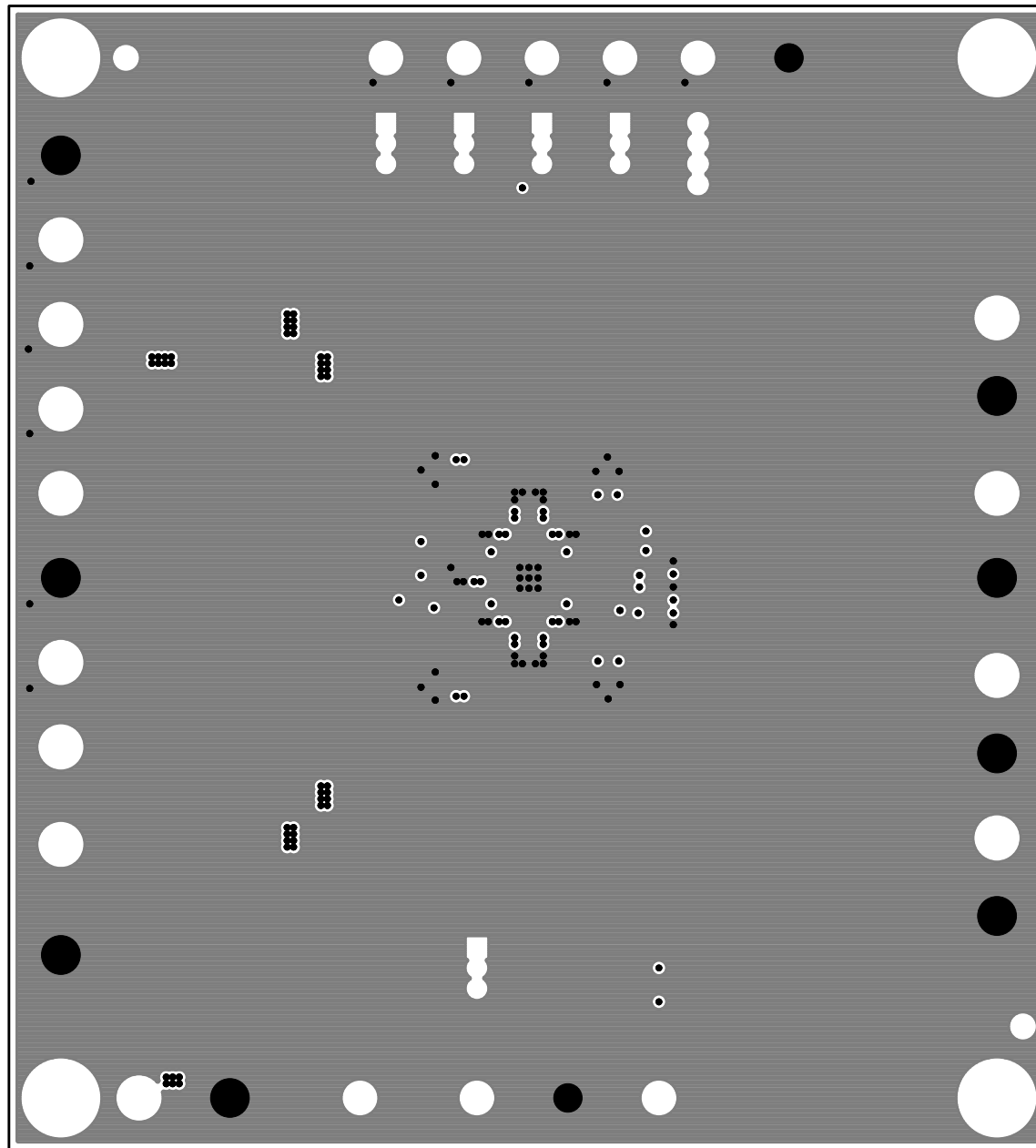
TOP SOLDER PASTE
LINEAR TECHNOLOGY
DC2311A-2 * LTC3370
4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
11-19-14



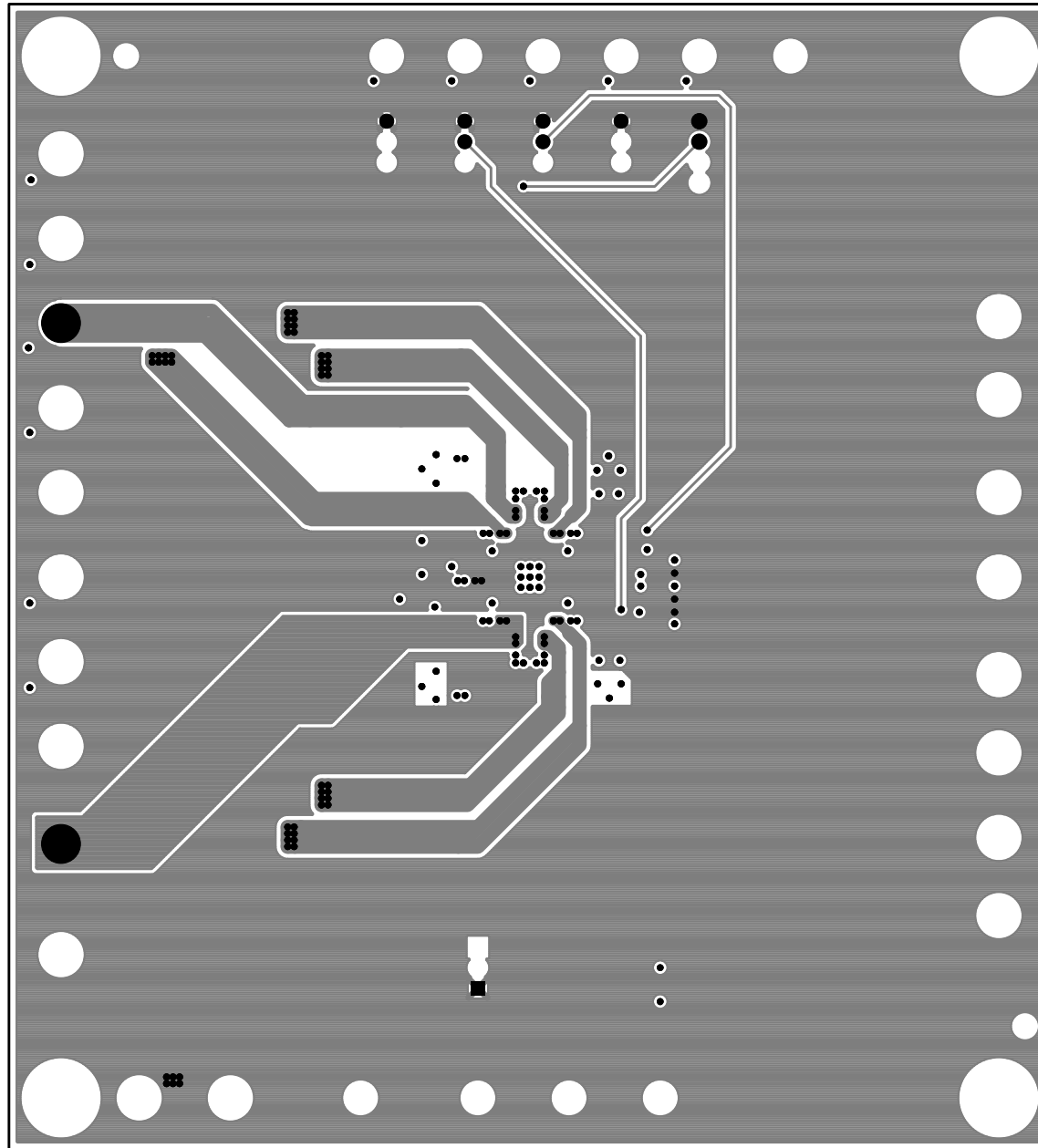
TOP SOLDER MASK
LINEAR TECHNOLOGY
DC2311A-2 * LTC3370
4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
11-19-14



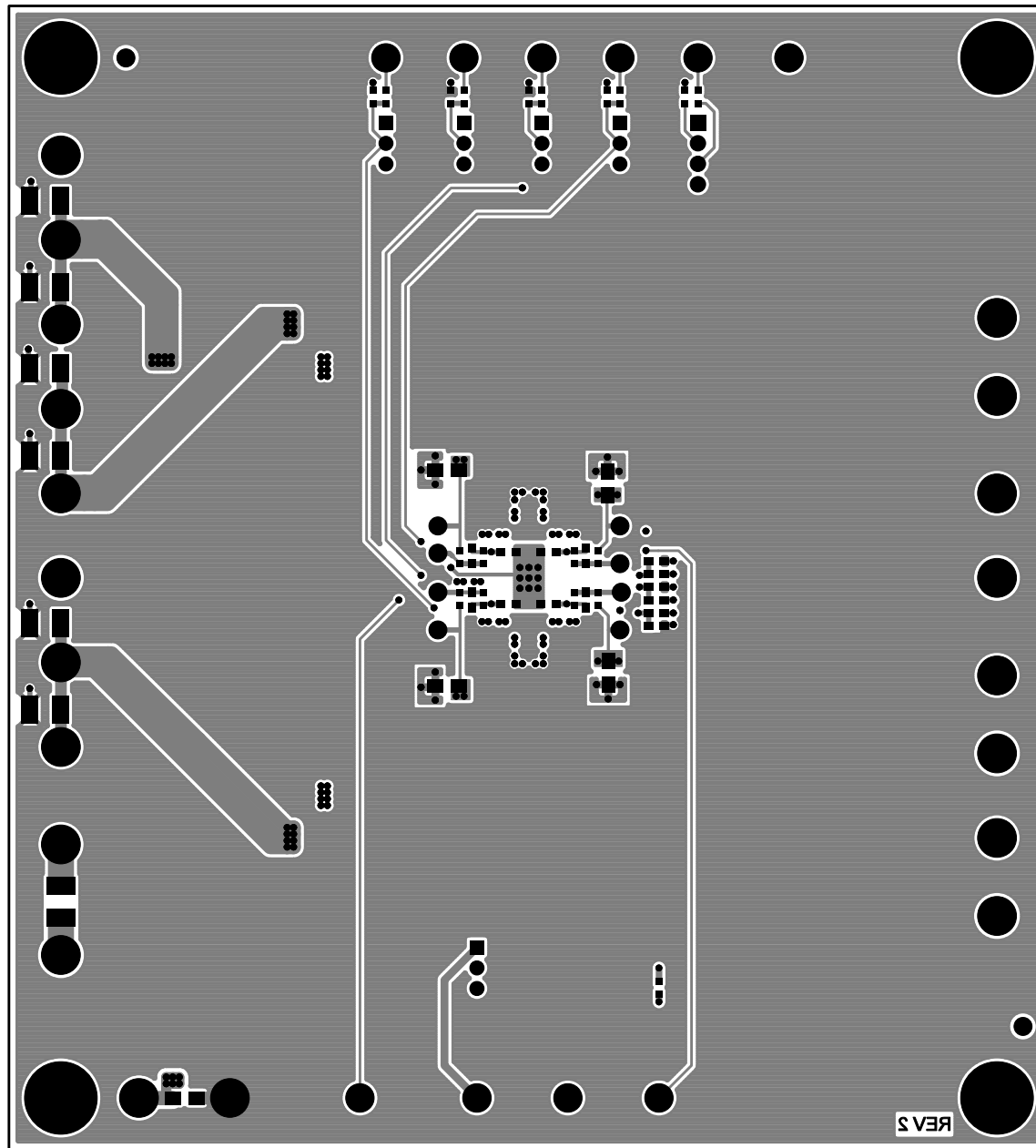
LAYER 1 - TOP SIDE
LINEAR TECHNOLOGY
DC2311A-2 * LTC3370
4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
11-19-14



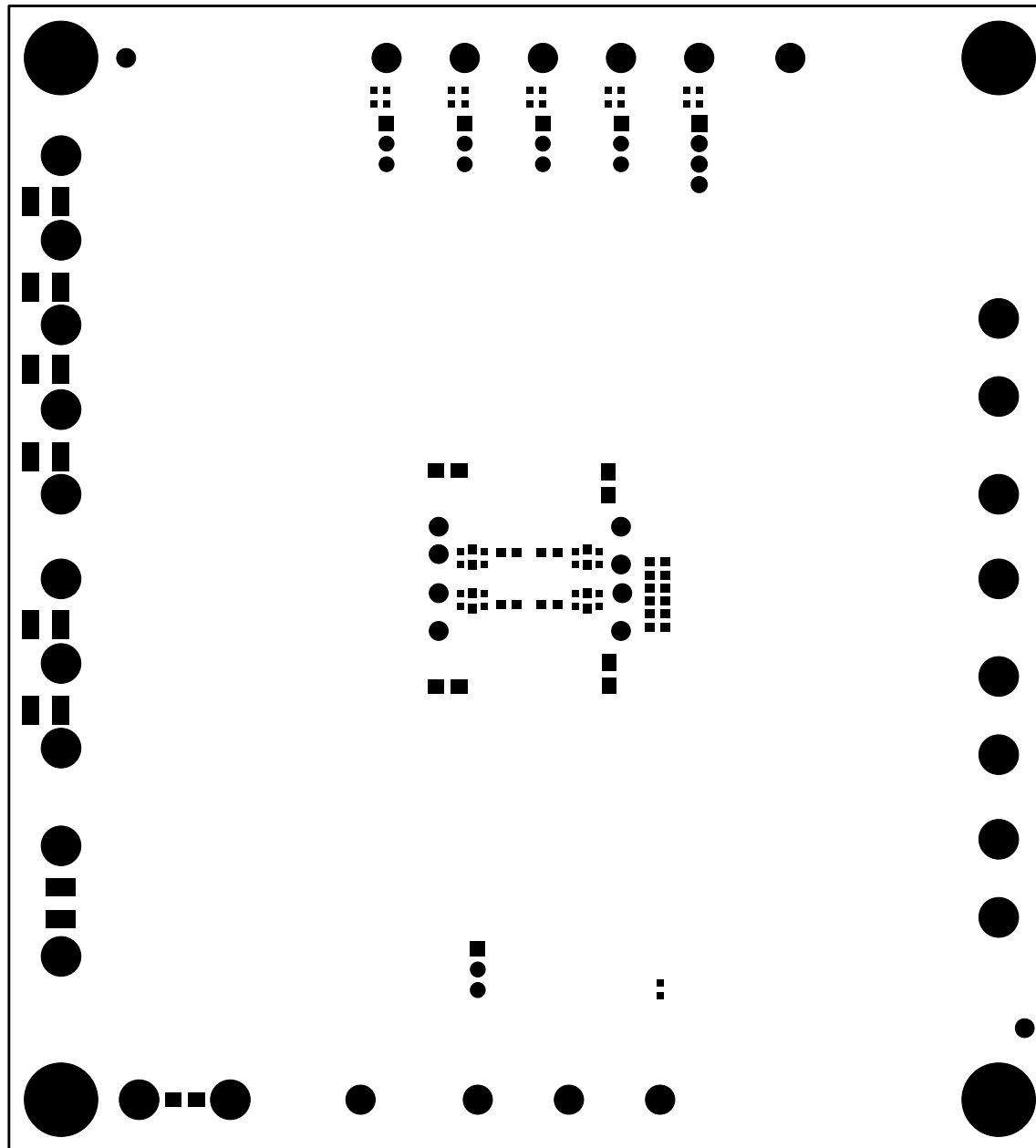
LAYER 2 - GND PLANE
LINEAR TECHNOLOGY
DC2311A-2 * LTC3370
4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
11-19-14



LAYER 3 - VINA-VINH / VCC PLANE
LINEAR TECHNOLOGY
DC2311A-2 * LTC3370
4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
11-19-14



LAYER 4 - BOTTOM SIDE
LINEAR TECHNOLOGY
DC2311A-2 * LTC3370
4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs
11-19-14



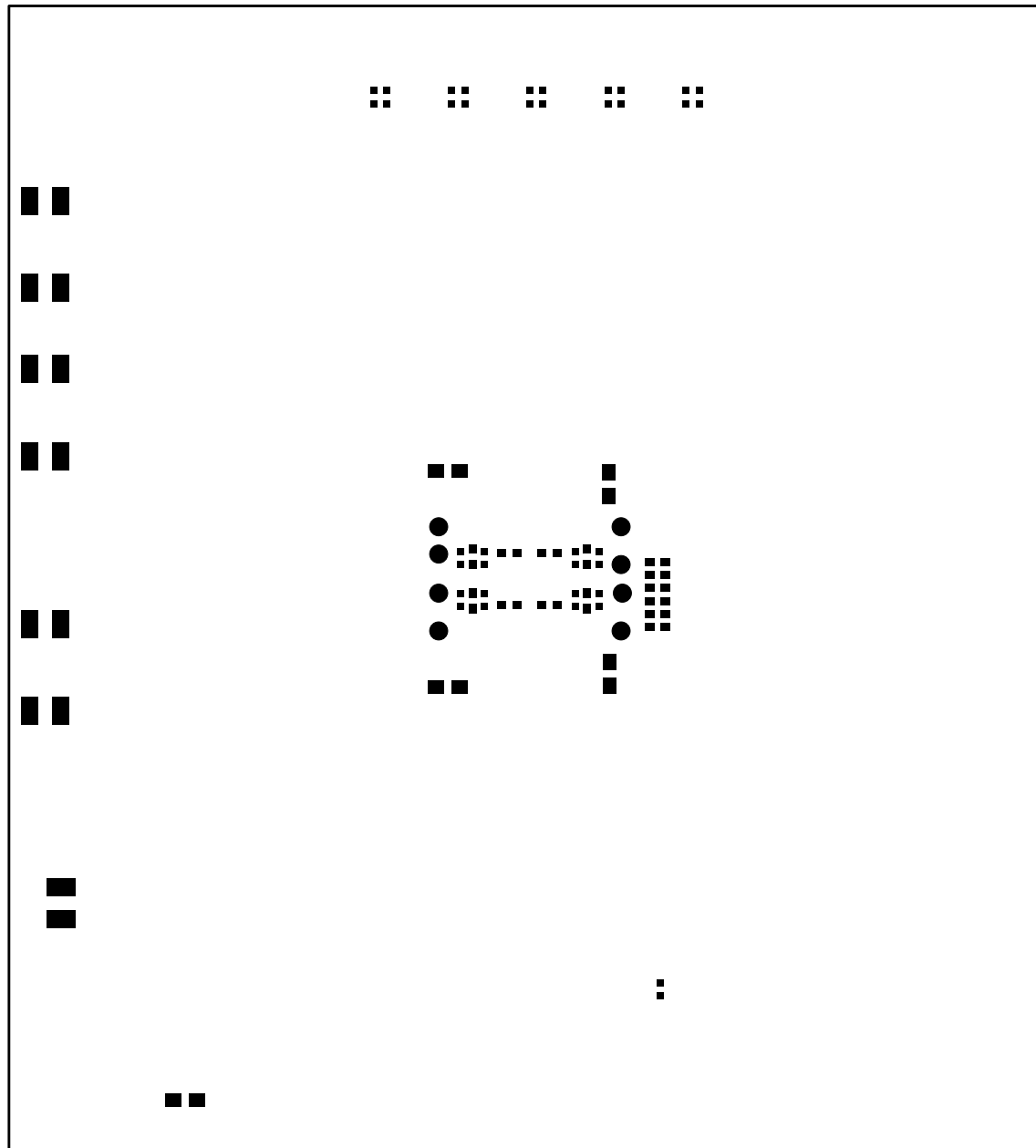
BOTTOM SOLDER MASK

LINEAR TECHNOLOGY

DC2311A-2 * LTC3370

4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs

11-19-14



BOTTOM SOLDER PASTE

LINEAR TECHNOLOGY

DC2311A-2 * LTC3370

4-CHANNEL 8A CONFIGURABLE BUCK DC/DCs

11-19-14

