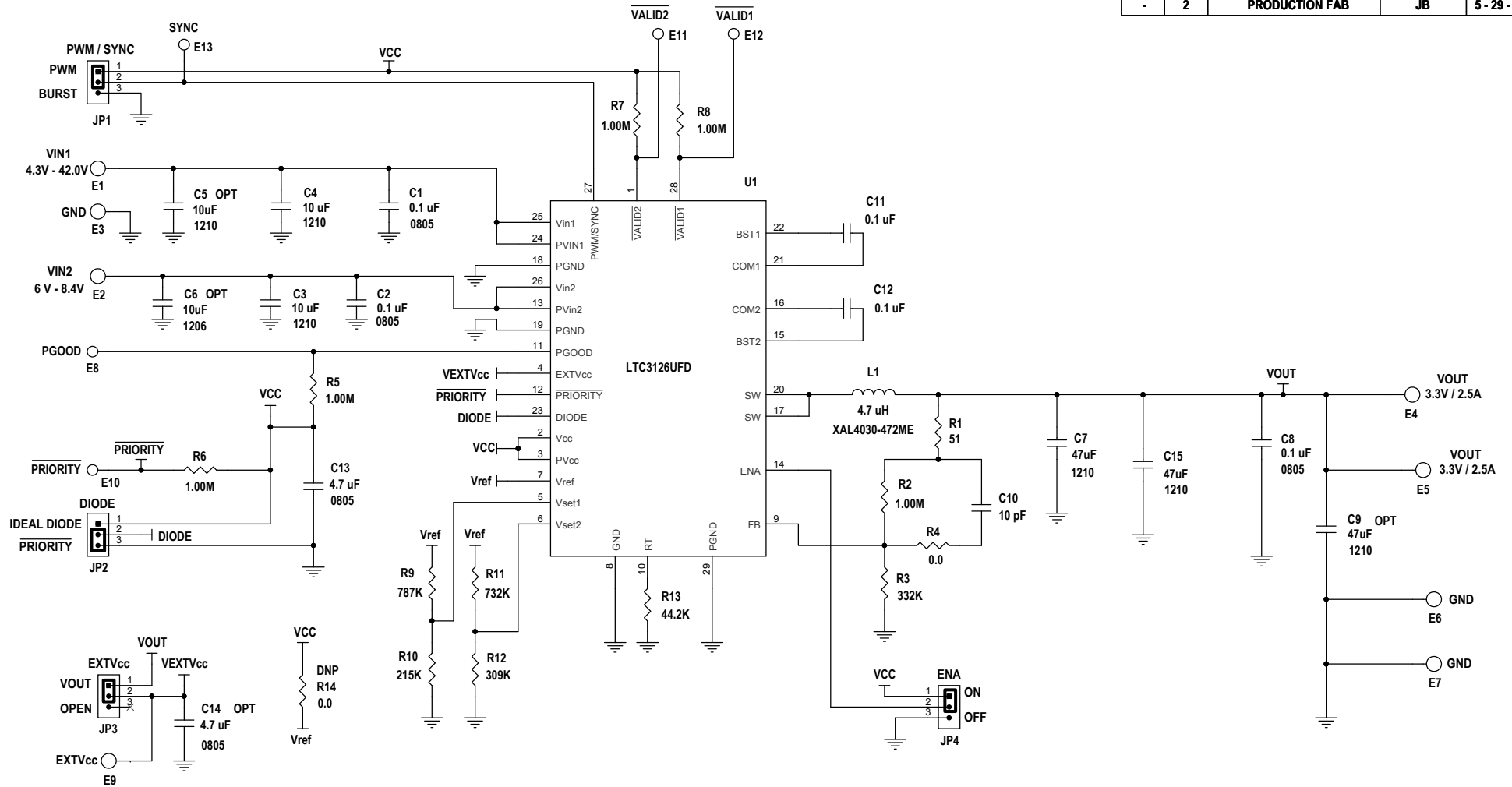


REVISION HISTORY				
ECO	REV	DESCRIPTION	APPROVED	DATE
-	2	PRODUCTION FAB	JB	5 - 29 - 15



PIN 8 (QUIET GROUND) MUST BE CONNECTED TO PINS 18, 19 AND 29 (POWER GROUND) DIRECTLY UNDER THE LTC3126. COMPONENTS CONNECTED TO THE QUIET GROUND PIN8 (R4, R7, R9, R12, C9, C14, JP1-3, JP2-3, JP4-3) SHOULD BE ON THE QUIET GROUND PLANE WHICH SHOULD ALSO BE UNDER R1, R2, R5, R6, R8, AND JP3.

NOTE: UNLESS OTHERWISE SPECIFIED

1. ALL RESISTORS ARE IN OHMS, 0402.
2. ALL CAPACITORS ARE 0402 UNLESS OTHERWISE NOTED
3. INSTALL SHUNTS AS SHOWN.

CUSTOMER NOTICE		APPROVALS		LINEAR TECHNOLOGY	
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.		PCB DES.	NC	1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408)432-1900 www.linear.com Fax: (408)434-0507 LTC Confidential-For Customer Use Only	
		APP ENG.	JB		
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		SCALE = NONE		TITLE: SCHEMATIC	
				42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR WITH LOSSLESS POWERPATH	
		SIZE	N/A	IC NO.	LTC3126UFD
		DEMO CIRCUIT 2215A			REV. 2
		DATE: 5 - 29 - 15			SHEET 1 OF 1

# Linear Technology Corporation

LTC3126UFD

ENGR: J. BOTTRILL(011-086)

**BILL OF MATERIALS**

**DEMO BD. #2215A-2**

**QTY-300**

**7/7/2015**

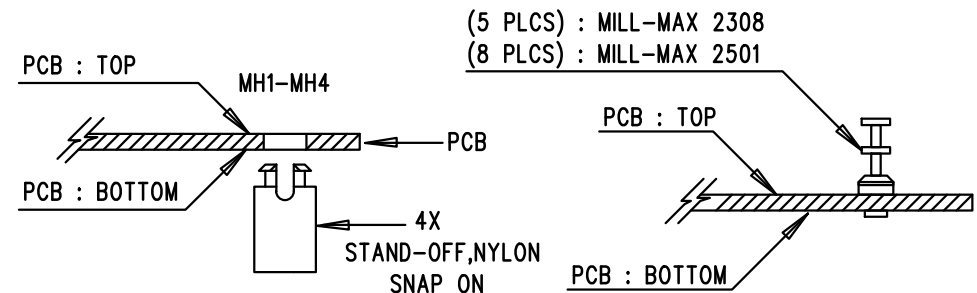
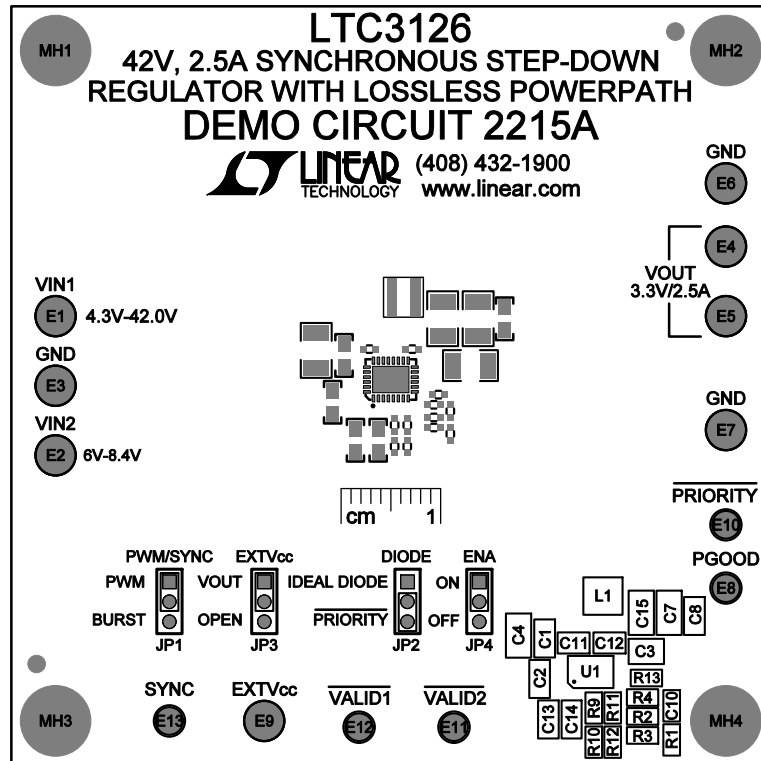
Item	Qty	Reference	Part Description	Manufacturer / Part #	Kit Qty	Pkg Qty	Balance	Parts/Purch.
				<b>NUMBER OF BOARDS =</b>	<b>300</b>			
1	3	C1,C2,C8	CAP CER 0.1uF 50V 10% X7R 0805	TDK, C2012X7R1H104K085AA	900			
2	2	C3,C4	CAP CER 10uF 50V 10% X7R 1210	TAIYO YUDEN UMK325AB7106KM-T	600			
3	0	C5,C6	CAP CER 10uF 50V 10% X7R 1210	TAIYO YUDEN UMK325AB7106KM-T	0			
4	2	C7,C15	CAP CER 47uF 10V 10% X7R 1210	MURATA, GRM32ER71A476KE15L	600			
5	0	C9	CAP CER 47uF 10V 10% X7R 1210	MURATA, GRM32ER71A476KE15L	0			
6	1	C10	CAP CER 10pF 25V 2.5% NPO 0402	KEMET C0402C100K8GACTU	300			
7	2	C11, C12	CAP CER 0.1uF 16V 10% X7R 0402	MURATA, GRM155R71C104KA88D	600			
8	1	C13	CAP CER 4.7uF 10V 10% X7R 0805	TAIYO YUDEN LMK212B7475KG-T	300			
9	0	C14	CAP CER 4.7uF 10V 10% X7R 0805	TAIYO YUDEN LMK212B7475KG-T	0			
10	1	L1	INDUCTOR, 4.7uH	COILCRAFT, XAL4030-472ME	300			
11	1	R1	RES 51 OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF51R0X	300			
12	5	R2, R5, R6, R7, R8	RES 1.00M OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF1004X	1500			
13	1	R3	RES 332K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF3323X	300			
14	1	R4	RES 0.0 OHM 1% JUMPER 1/10W 0402	PANASONIC, ERJ-2GE0R00X	300			
15	1	R9	RES 787K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF7873X	300			
16	1	R10	RES 215K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF2153X	300			
17	1	R11	RES 732K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF7323X	300			
18	1	R12	RES 309K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF3093X	300			
19	1	R13	RES 44K2 OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF4422X	300			
20	0	R14	RES 0.0 OHM 1% JUMPER 1/10W 0402	PANASONIC, ERJ-2GE0R00X	0			
21	1	U1	42V, 2.5A SYNCHRONOUS BUCK WITH LOSSLESS POWERPATH	LINEAR TECH, LTC3126EUFD #TRBPF	300			
22	8	E1-E7, E9	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0	2400			
23	5	E8, E10-E13	TURRET, 0.061 DIA	MILL-MAX, 2308-2-00-80-00-00-07-0	1500			
24	4	JP1, JP2, JP3, JP4	JMP, 3PIN 1 ROW .079CC	Würth Elektronik, 62000311121	1200			
25	4	XJP1, XJP2, XJP3,	SHUNT, .079" CENTER	Würth Elektronik, 60800213421	1200			
26	4	STAND OFF	STAND-OFF, NYLON 0.375" TALL	Würth Elektronik, 702933000	1200			
27	1		FAB, PRINTED CIRCUIT BOARD	DEMO CIRCUIT 2215A-2	300			
28	2		STENCILS TOP & BOTTOM	DC2215A-2	2			
							<b>TOTAL</b>	<b>\$ -</b>


Item	Qty	Reference	Part Description	Manufacturer / Part #
<b>REQUIRED CIRCUIT COMPONENTS:</b>				
1	3	C1, C2, C8	CAP CER 0.1uF 50V 10% X7R 0805	TDK C2012X7R1H104K085AA
2	2	C3, C4	CAP CER 10uF 50V 10% X7R 1210	TAIYO YUDEN UMK325AB7106KM-T
3	2	C7, C15	CAP CER 47uF 10V 20% X7R 1210	MURATA, GRM32ER71A476KE15L
4	1	C10	CAP CER 10pF 25V 2.5% NPO 0402	KEMET C0402C100K8GACTU
5	2	C11, C12	CAP CER 0.1uF 16V 10% X7R 0402	MURATA, GRM155R71C104KA88D
6	1	C13	CAP CER 4.7uF 10V 10% X7R 0805	TAIYO YUDEN LMK212B7475KG-T
7	1	L1	INDUCTOR, 4.7uH	COILCRAFT, XAL4030-472ME
8	1	R1	RES 51 OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF51R0X
9	5	R2, R5, R6, R7, R8	RES 1.00M OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF1004X
10	1	R3	RES 332K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF3323X
11	1	R4	RES 0.0 OHM 1% JUMPER 1/10W 0402	PANASONIC, ERJ-2GE0R00X
12	1	R9	RES 787K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF7873X
13	1	R10	RES 215K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF2153X
14	1	R11	RES 732K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF7323X
15	1	R12	RES 309K OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF3093X
16	1	R13	RES 44K2 OHM 1% 1/10W 0402	PANASONIC, ERJ-2RKF4422X
17	1	U1	42V, 2.5A SYNCHRONOUS BUCK WITH LOSSLESS POWERPATH	LINEAR TECH, LTC3126EUF #TRBPF
<b>ADDITIONAL DEMO BOARD CIRCUIT COMPONENTS:</b>				
18	0	C5, C6	CAP CER 10uF 50V 10% X7R 1210	TAIYO YUDEN UMK325AB7106KM-T
19	0	C9	CAP CER 47uF 10V 20% X7R 1210	MURATA, GRM32ER71A476KE15L
20	0	C14	CAP CER 4.7uF 10V 10% X7R 0805	TAIYO YUDEN LMK212B7475KG-T
21	0	R14	RES 0.0 OHM 1% JUMPER 1/10W 0402	PANASONIC, ERJ-2GE0R00X
<b>HARDWARE-FOR DEMO BOARD ONLY:</b>				
22	8	E1-E7, E9	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0
23	5	E8, E10-E13	TURRET, 0.061 DIA	MILL-MAX, 2308-2-00-80-00-00-07-0
24	4	JP1, JP2, JP3, JP4	JMP, 3PIN 1 ROW .079CC	Wurth Elektronik, 62000311121
25	4	XJP1, XJP2, XJP3, XJP4	SHUNT, .079" CENTER	Wurth Elektronik, 60800213421
26	4	STAND OFF	STAND-OFF, NYLON 0.375" TALL	Wurth Elektronik, 702933000

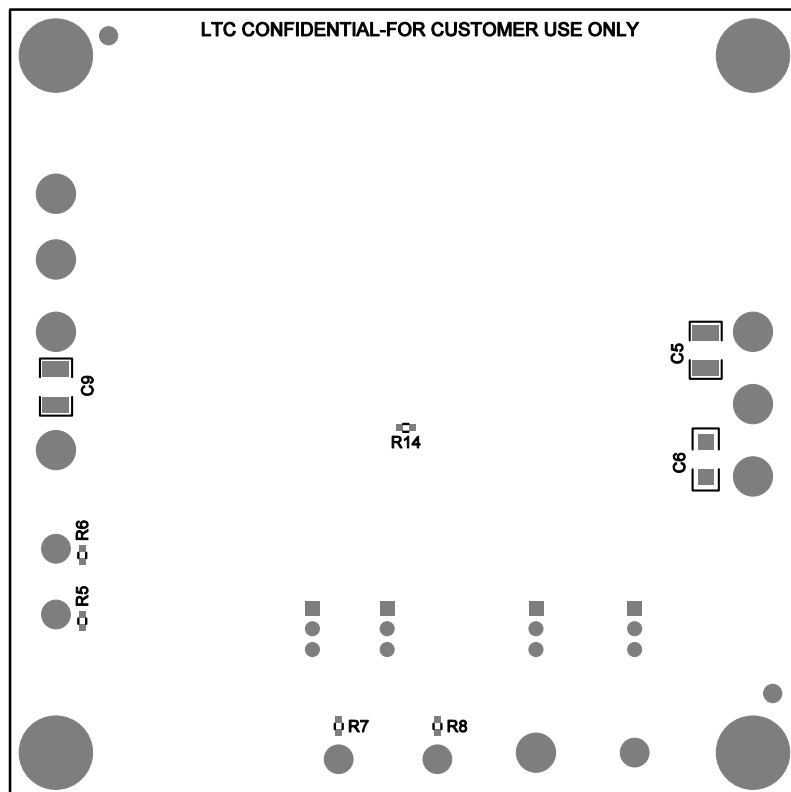
REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	2	PRODUCTION FAB	JB	5-29-15


## 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 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 AND 4 STANDOFFS AT LOCATIONS SHOWN BELOW:



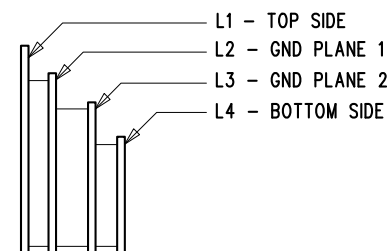
APPROVALS		 1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 www.Linear.com LTC CONFIDENTIAL- FOR CUSTOMER USE ONLY		
PCB DES.	NC			
APP ENG.	JB			
		TITLE: TOP ASSEMBLY DRAWING:		
		42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR WITH LOSSLESS POWERPATH		
		SIZE	IC NO. LTC3126UFD	REV.
		N/A	DEMO CIRCUIT 2215A	2
SCALE = NONE		FILENAME: DC2215A-2.PCB		SHT 1 of 2



APPROVALS		 <b>LINEAR TECHNOLOGY</b> 1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 <a href="http://www.Linear.com">www.Linear.com</a> LTC CONFIDENTIAL-FOR CUSTOMER USE ONLY	
PCB DES.	NC		
APP ENG.	JB	<b>TITLE: BOTTOM ASSEMBLY DRAWING:</b> <b>42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR WITH LOSSLESS POWERPATH</b>	
SIZE	IC NO.	LTC3126UFD	REV.
N/A		DEMO CIRCUIT 2215A	2
SCALE = NONE		FILENAME: DC2215A-2.PCB	SHT 2 of 2

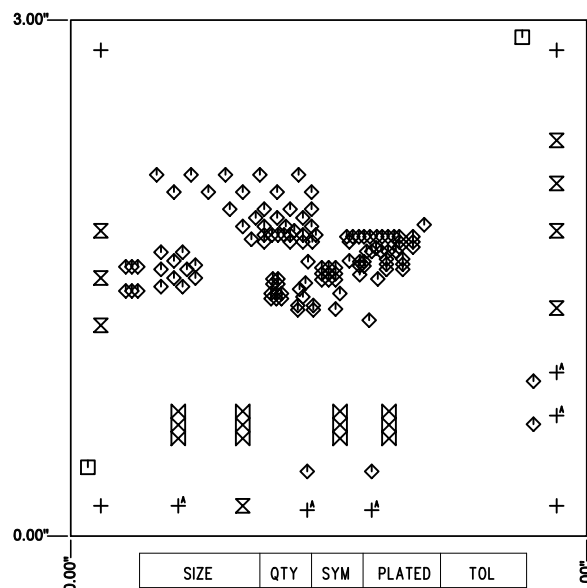
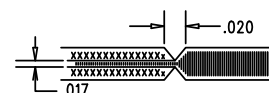
REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	2	PRODUCTION FAB	JB	5-29-15

## 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 2 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. NO TENT.  
-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
190	4	+	YES	+/-0.003
70	2	□	NO	+/-0.003
10	120	◇	YES	+/-0.003
94	8	⊗	YES	+/-0.003
35	12	⊗	YES	+/-0.003
63	5	⊕	YES	+/-0.003

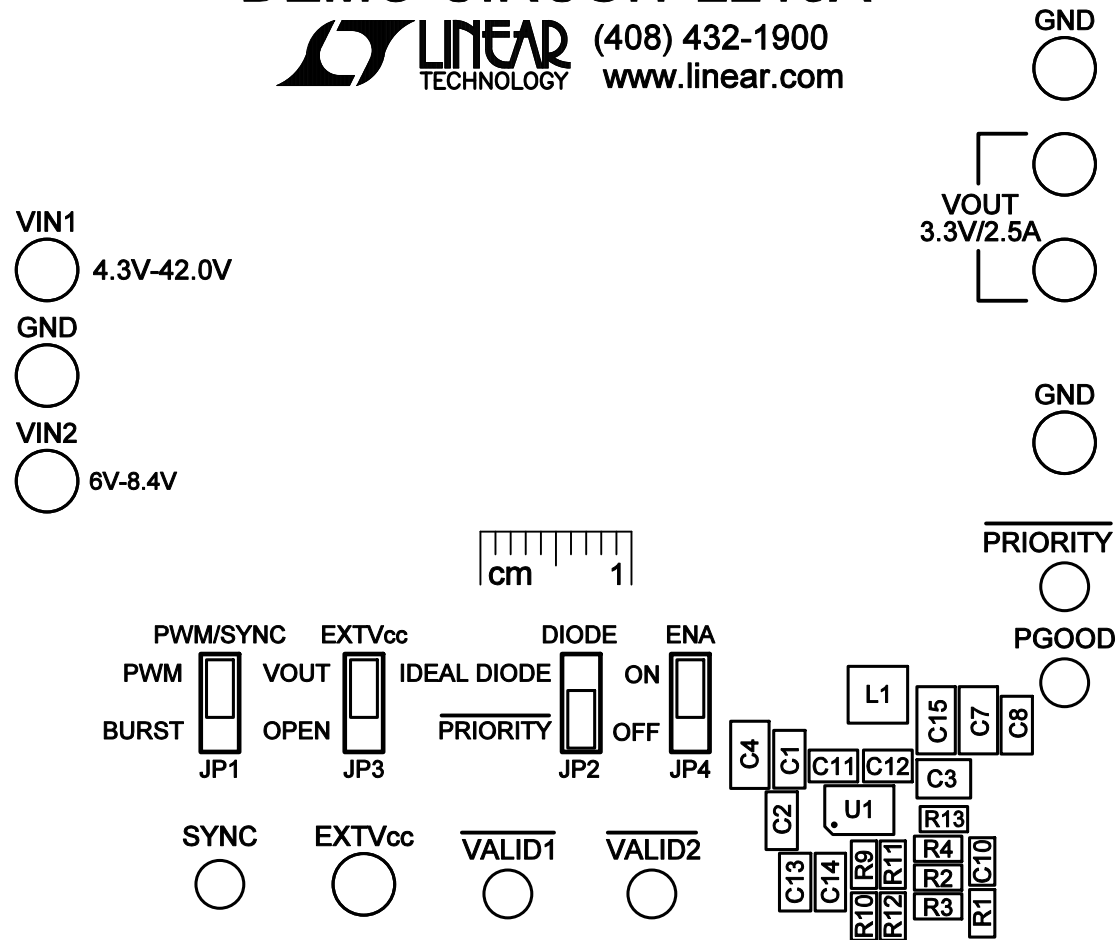
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON ANGLE ±1 0.XX" = ±0.01" 0.XXX" = ±0.005" INTERPRET DIM AND TOL PER ASME Y14.5M-1994  THIRD ANGLE PROJECTION 	APPROVALS		<div>1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 <a href="http://www.linear.com">www.linear.com</a> LTC CONFIDENTIAL- FOR CUSTOMER USE ONLY</div> <div>TECHNOLOGY</div> <div>TITLE: FABRICATION DRAWING: 42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR WITH LOSSLESS POWERPATH</div>	
	PCB DES.	NC		
	APP ENG.	JB		
DO NOT SCALE DRAWING	SCALE: NONE	SIZE	IC NO.	REV.
		N/A	LTC3126UFD DEMO CIRCUIT 2215A	2
FILENAME: DC2215A-2.PCB		SHT 1 of 1		

# LTC3126

## 42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR WITH LOSSLESS POWERPATH DEMO CIRCUIT 2215A



(408) 432-1900  
www.linear.com



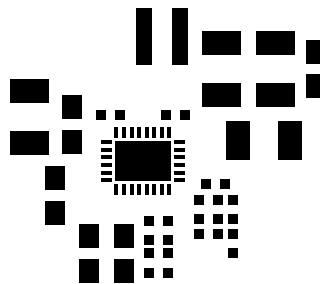
TOP SILKSCREEN

LINEAR TECH CORP.

DEMO CIRCUIT 2215A-2 \* LTC3126UFD

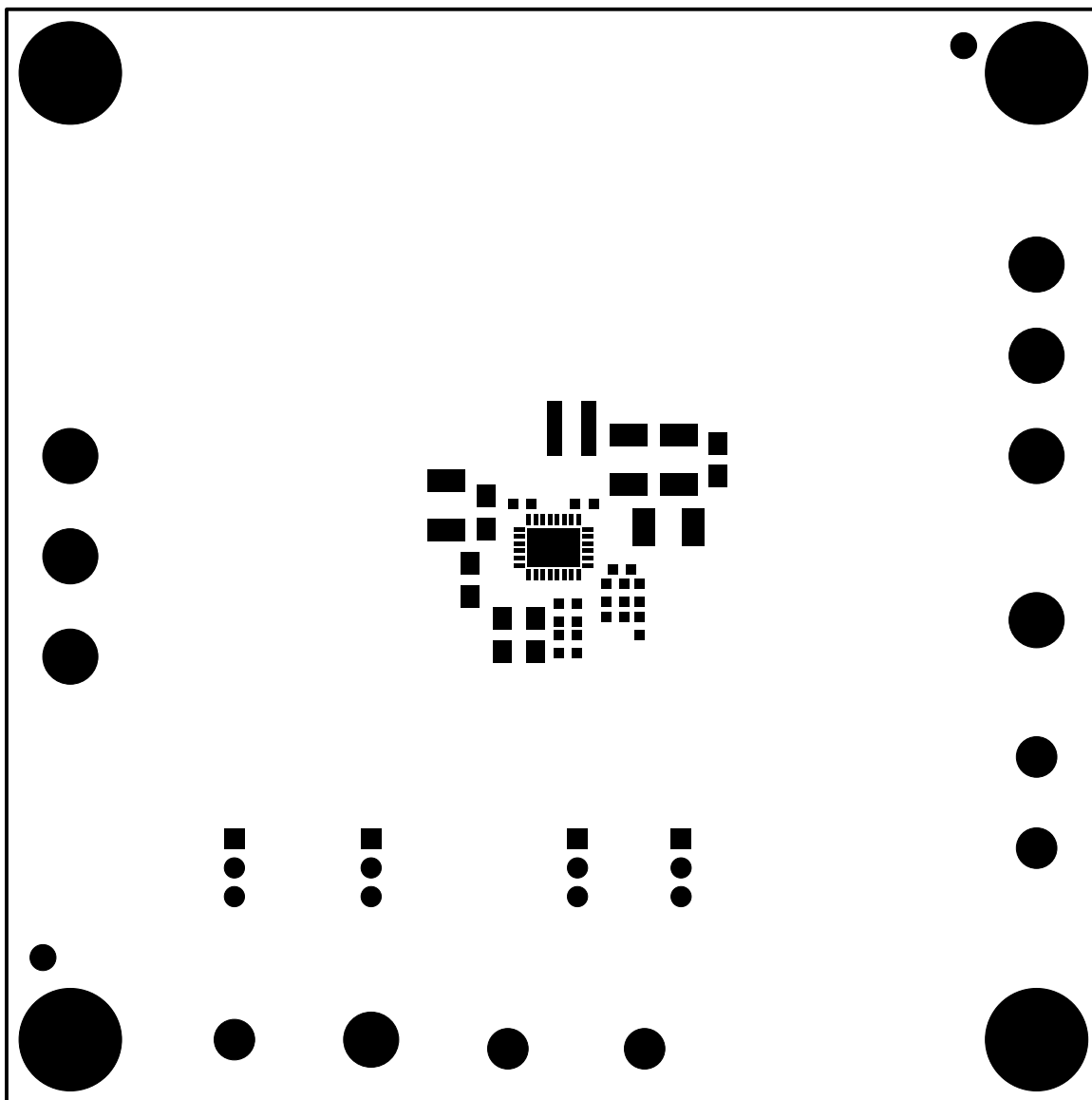
42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR  
WITH LOSSLESS POWERPATH

DATE: 5-29-15



TOP SOLDER PASTE  
LINEAR TECH CORP.  
DEMO CIRCUIT 2215A-2 \* LTC3126UFD  
42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR  
WITH LOSSLESS POWERPATH  
DATE: 5-29-15





TOP SOLDER MASK

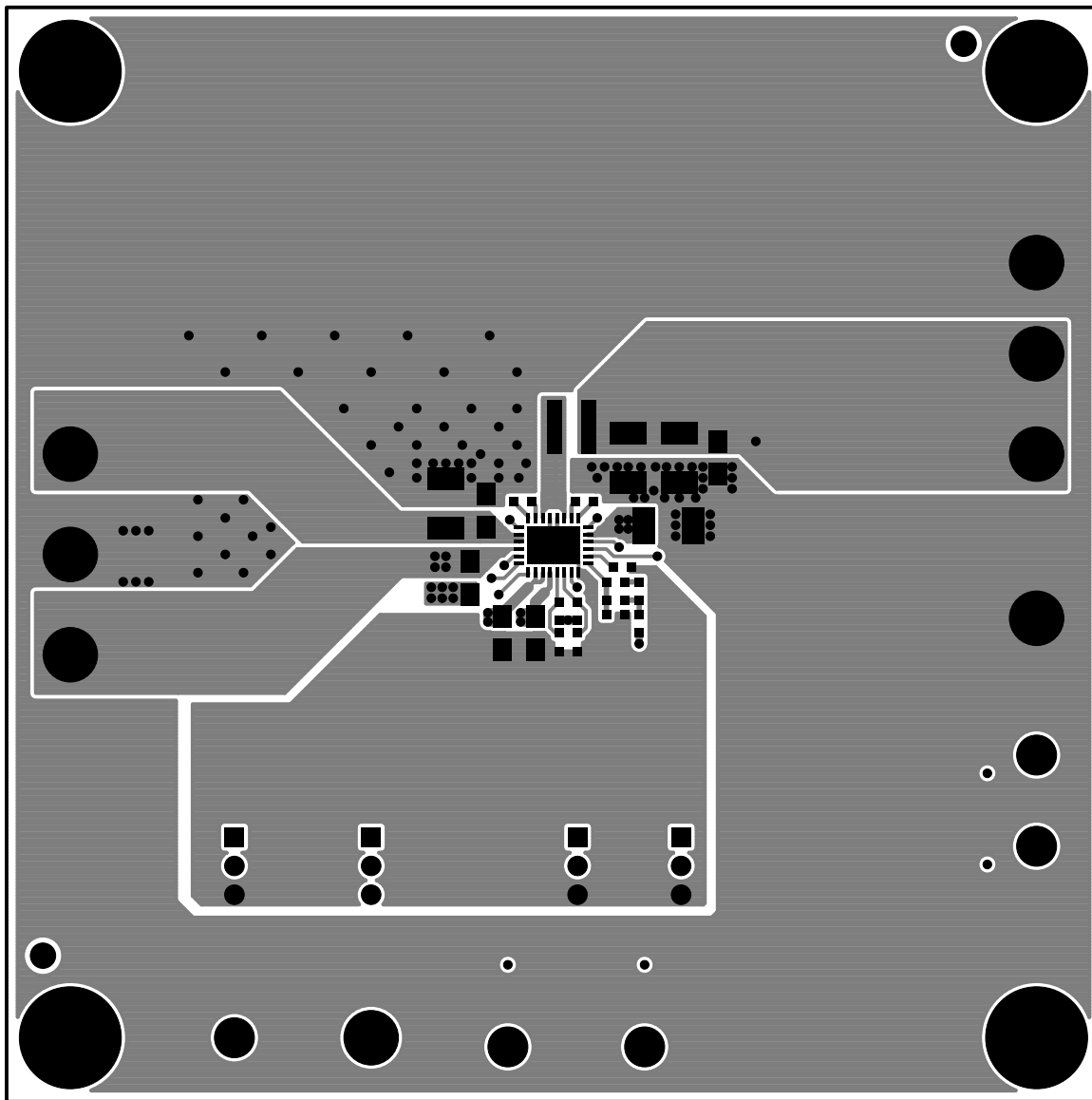
LINEAR TECH CORP.

DEMO CIRCUIT 2215A-2 \* LTC3126UFD

42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR

WITH LOSSLESS POWERPATH

DATE: 5-29-15



LAYER 1 : TOP LAYER

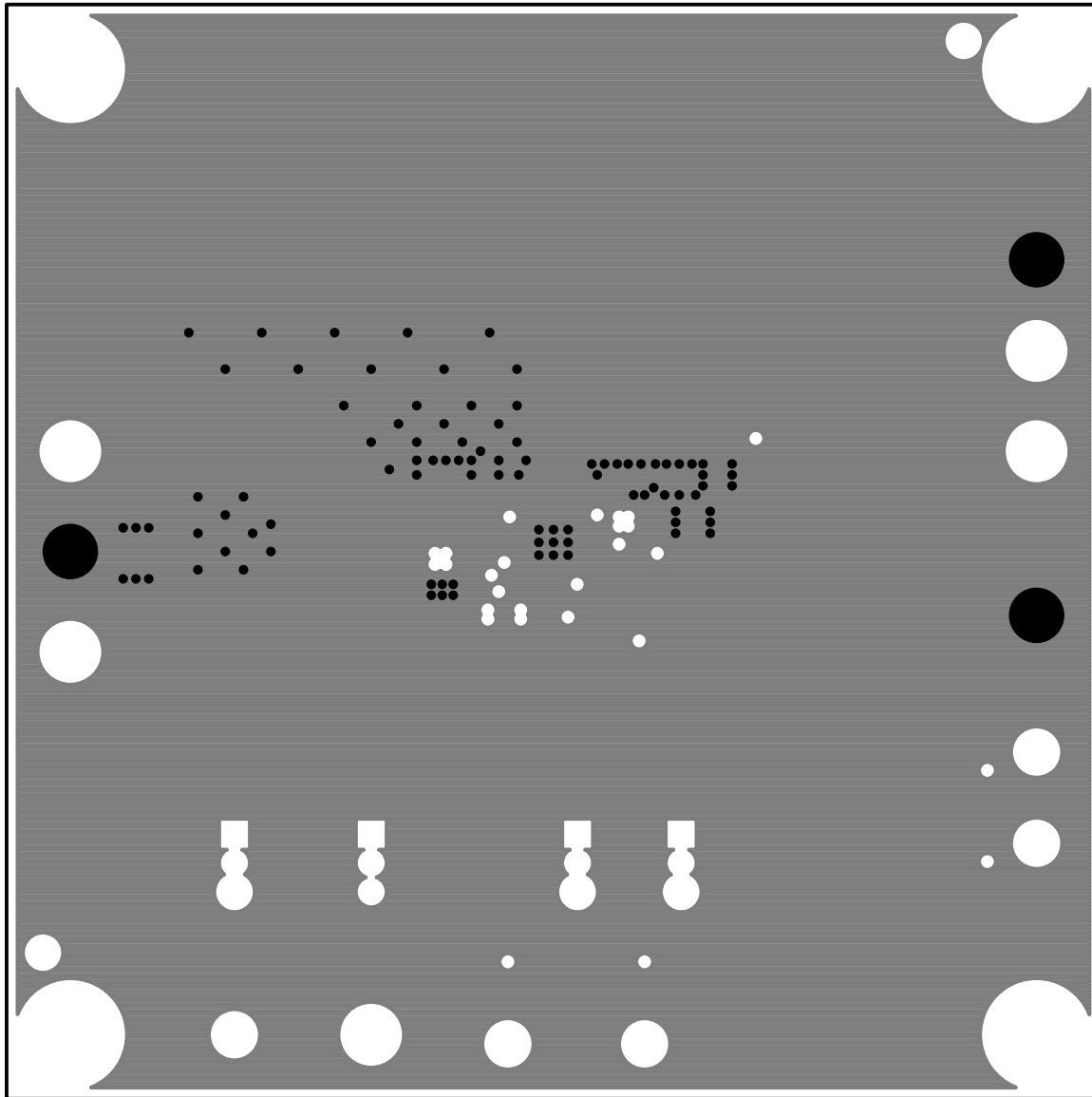
LINEAR TECH CORP.

DEMO CIRCUIT 2215A-2 \* LTC3126UFD

42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR

WITH LOSSLESS POWERPATH

DATE: 5-29-15



**LAYER 2 : - GND 1**

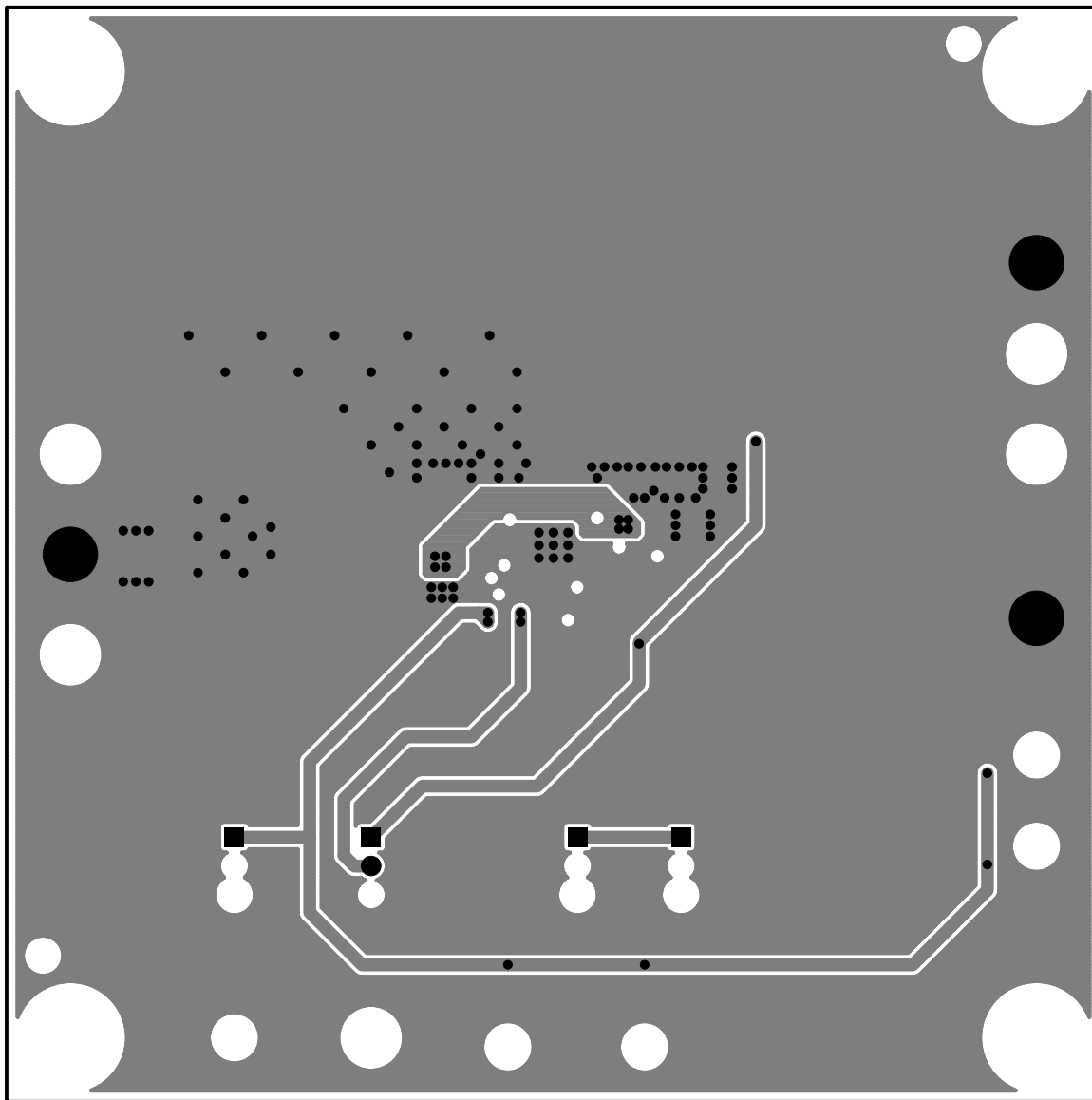
**LINEAR TECH CORP.**

**DEMO CIRCUIT 2215A-2 \* LTC3126UFD**

**42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR**

**WITH LOSSLESS POWERPATH**

**DATE: 5-29-15**



**LAYER 3 : - GND 2**

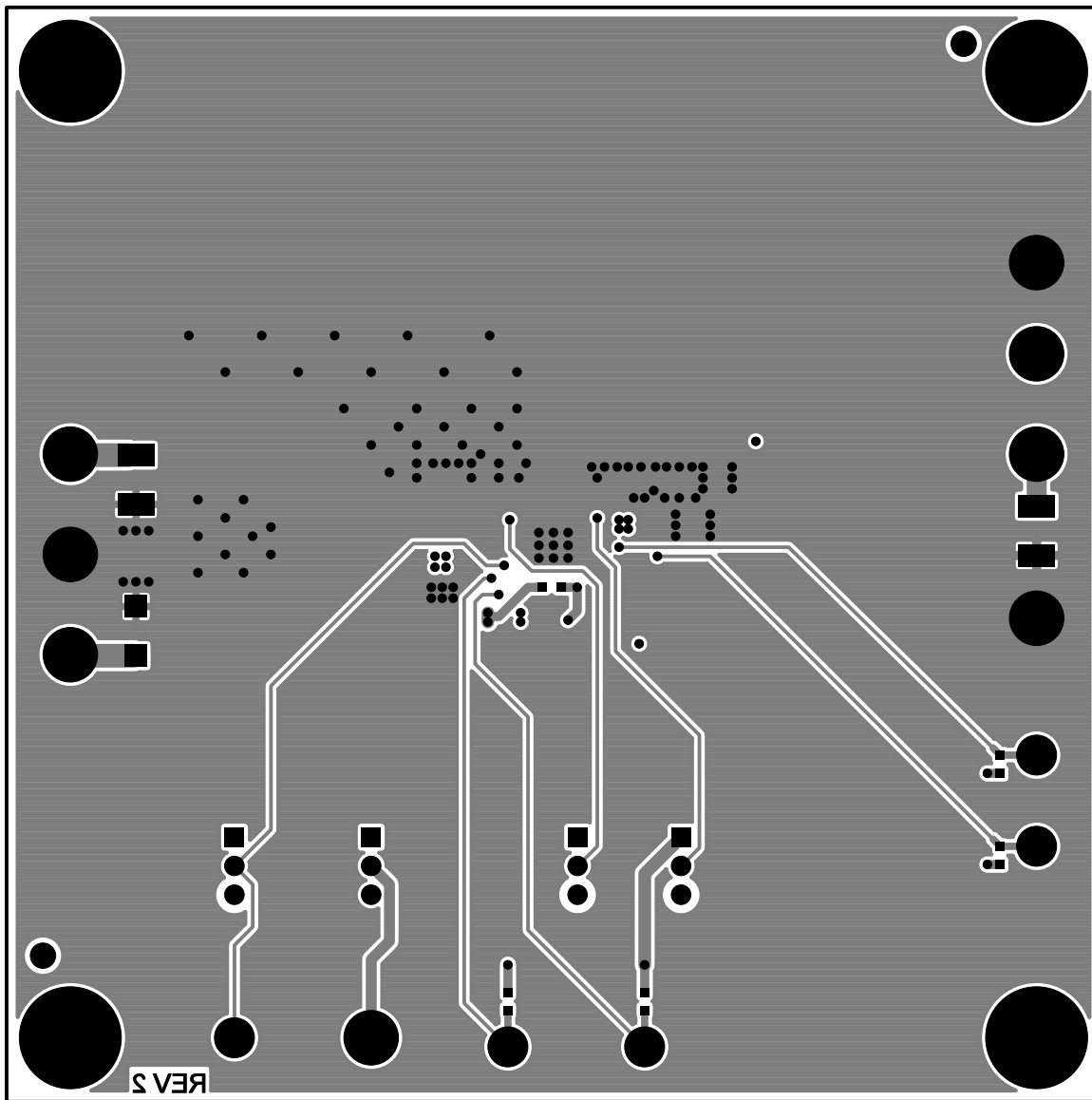
**LINEAR TECH CORP.**

**DEMO CIRCUIT 2215A-2 \* LTC3126UFD**

**42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR**

**WITH LOSSLESS POWERPATH**

**DATE: 5-29-15**



LAYER 4 : BOTTOM LAYER

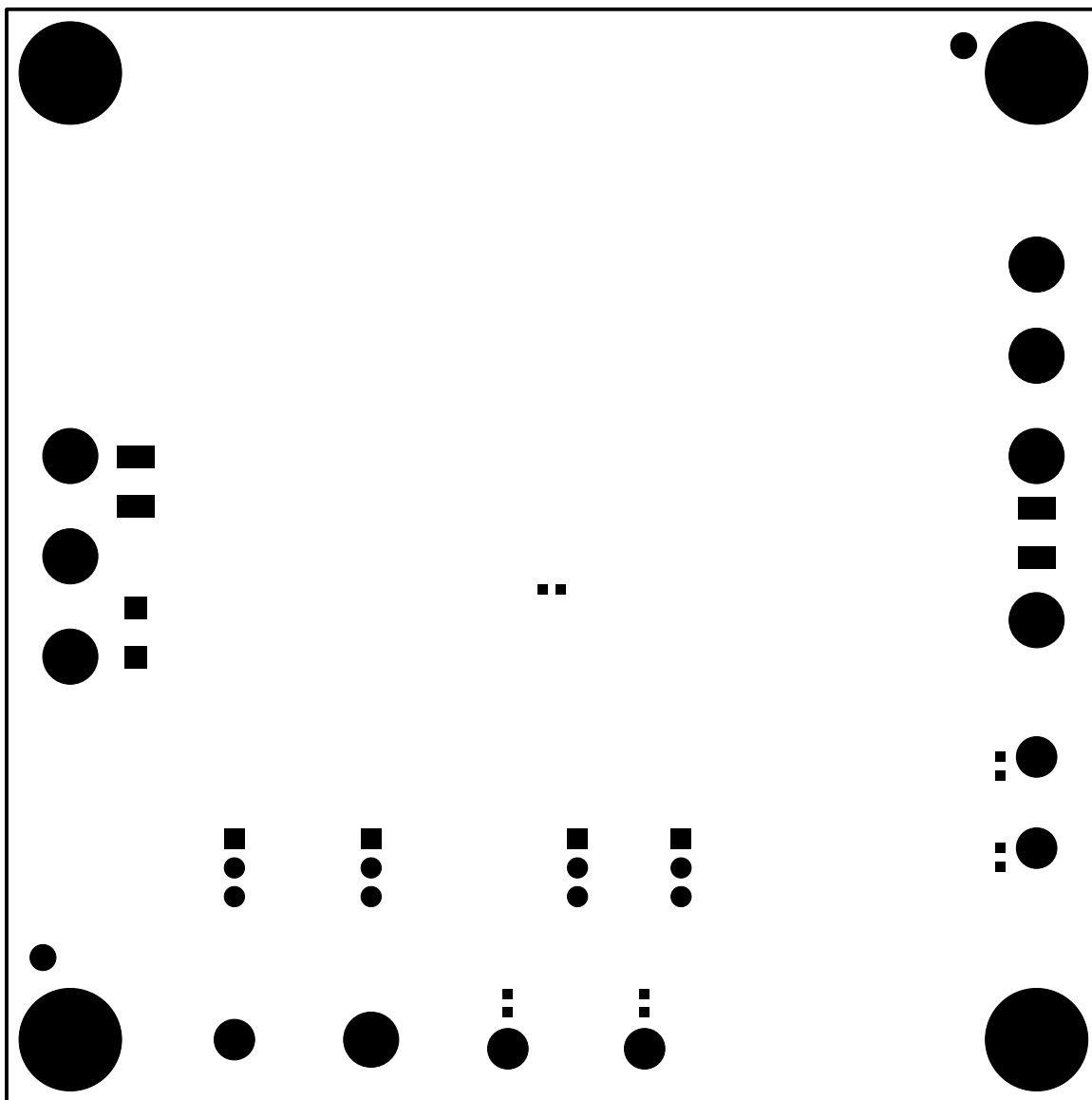
LINEAR TECH CORP.

DEMO CIRCUIT 2215A-2 \* LTC3126UFD

42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR

WITH LOSSLESS POWERPATH

DATE: 5-29-15



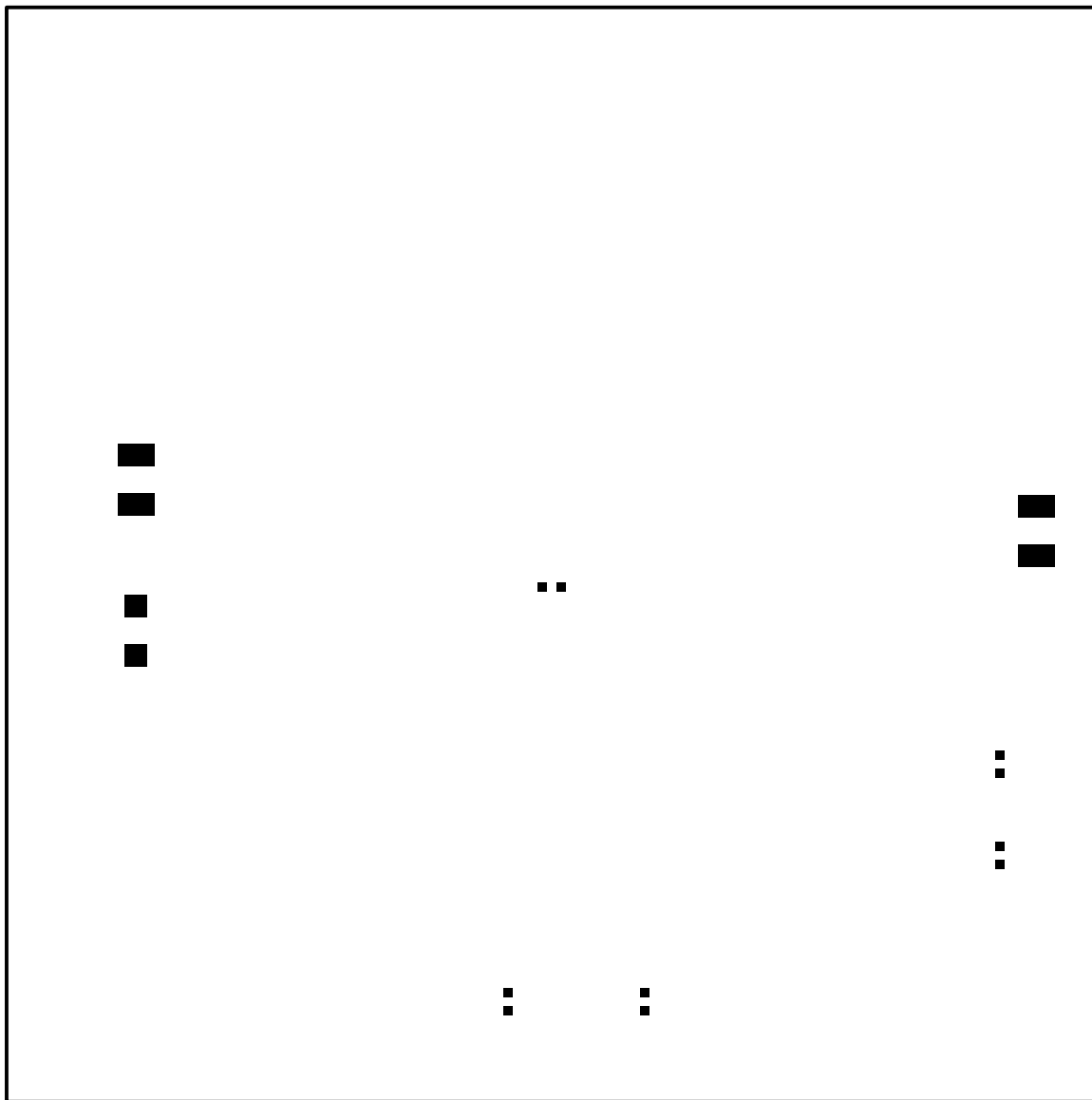
**BOTTOM SOLDER MASK**

**LINEAR TECH CORP.**

**DEMO CIRCUIT 2215A-2 \* LTC3126UFD**

**42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR  
WITH LOSSLESS POWERPATH**

**DATE: 5-29-15**



**BOTTOM SOLDER PASTE**

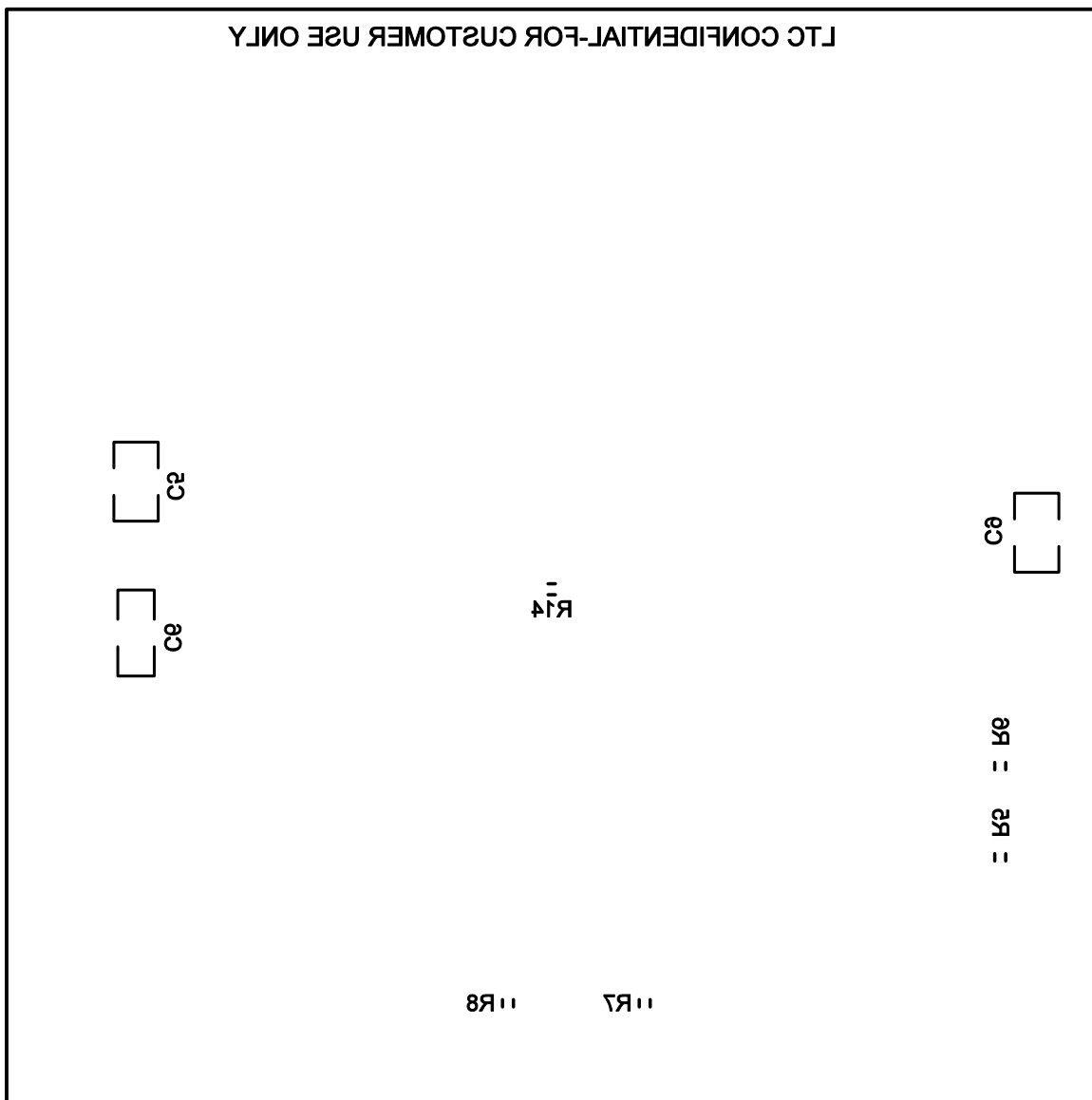
**LINEAR TECH CORP.**

**DEMO CIRCUIT 2215A-2 \* LTC3126UFD**

**42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR**

**WITH LOSSLESS POWERPATH**

**DATE: 5-29-15**



BOTTOM SILKSCREEN

LINEAR TECH CORP.

DEMO CIRCUIT 2215A-2 \* LTC3126UFD

42V, 2.5A SYNCHRONOUS STEP-DOWN REGULATOR

WITH LOSSLESS POWERPATH

DATE: 5-29-15