

Linear Technology Corporation

LTC3114-1EDHC

ENGR: J. NOON (011-086)

BILL OF MATERIALS

DEMO BD. #1821B-1

QTY-300

11/13/2015

Item	Qty	Part Description	Manufacturer / Part #	Kit Qty	Pkg Qty
			NUMBER OF BOARDS =	325	
1	2	C1,C2	CAP CER 0.068UF 16V 10% X7R 0402	TDK, C1005X7R1C683K	650
2	1	C3	CAP CER 4.7uF 6.3V X5R 20% 0603	TDK, C1608X5R0J475M	325
3	2	C4, C13	CAP CER 22uF 25V X7R 20% 1812	TDK, C4532X7R1E226M	650
4	1	C5	CAP CER 1.0uF 25V X5R 0603	TDK, C1608X5R1E105M	325
5	1	C6	CAP CER 10uF 50V 20% X7R 2220	TDK, C5750X7R1H106M230KB	325
6	0	C7 (OPT)	CAP 330uF 63V ELECT MVA SMD	UNITED CHEMI-CON EMVA630ARA331MKG5S	0
7	1	C8	CAP CER 1.0uF 50V X7R 20% 1206	TDK, C3216X7R1H105M	325
8	1	C9	CAP CER 4700PF 25V X7R 10% 0402	TDK, C1005X7R1E472K	325
9	1	C10	CAP CER 10PF 50V C0G 0402	TDK, C1005C0G1H100D	325
10	1	C11	CAP CER 10000PF 25V 20% X7R 0402	TDK, C1005X7R1E103M	325
11	0	C12	DNP		0
12	0	C14	DNP		0
13	1	D1	DIODE SCHOTTKY 20V	NXP, PMEG2010AEH	325
14	1	D2	DIODE SCHOTTKY 60V, 2A	NXP, PMEG6020ER,115	325
15	4	E1,E2,E3,E4	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0	800
16	2	JP2,JP1	HEADERS, 3 PINS, 2mm CTRs	SULLINS, NRPN031PAEN-RC	650
17	2	XJP1,XJP2	SHUNT, 2mm CTRs	SAMTEC, 2SN-BK-G	650
18	1	L1	INDUCTOR, 6.8 uH +/-30%	COILCRAFT, MSS1048-682NLC	325
19	1	R1	RES 2.00M OHM 1/16W 1% 0402 SMD	VISHAY, CRCW04022M00FKED	325
20	1	R2	RES 499K OHM 1/16W 1% 0402 SMD	VISHAY, CRCW0402499KFKED	325
21	1	R3	RES 21.0K OHM 1/16W 1% 0402 SMD	VISHAY, CRCW040221K0FKED	325
22	1	R4	RES 27.4K OHM 1/16W 1% 0402 SMD	VISHAY, CRCW040227K4FKED	325
23	1	R5	RES 1.00M OHM 1/16W 1% 0402 SMD	VISHAY, CRCW04021M00FKED	325
24	0	R6, R7	DNP		0
25	1	R8	RES 49.9 OHM 1/16W 1% 0402 SMD	VISHAY, CRCW040249R9FKED	325
26	1	U1	40V, 1A BUCK-BOOST DC/DC CONVERTER WITH PROGRAMMABLE OUTPUT CURRENT	LINEAR TECHNOLOGY, LTC3114EDHC-1#PBF	325
27	4	STAND OFF	STAND-OFF, NYLON 0.50" tall	KEYSTONE, 8832 (SNAP ON)	1300
28	1		FAB,PRINTED CIRCUIT BOARD	DEMO CIRCUIT # 1821B-1	325
29	2		STENCIL-TOP & BOTTOM	DC1821B-1	2

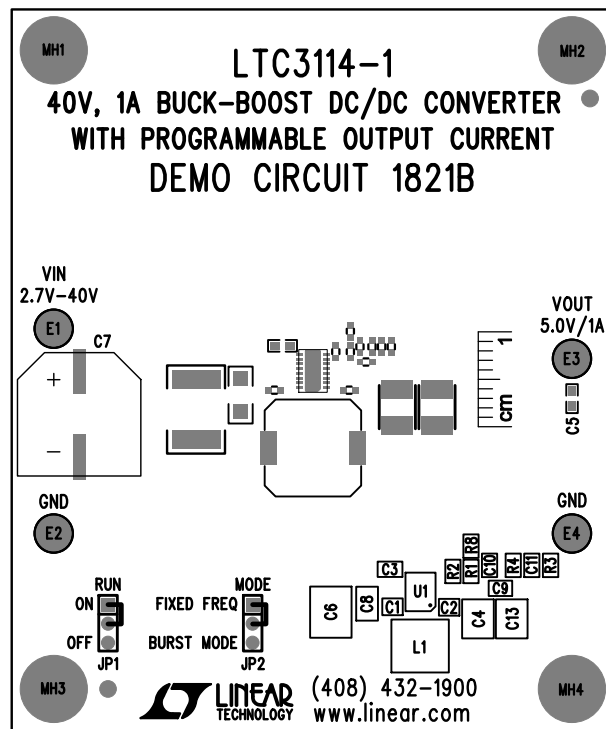
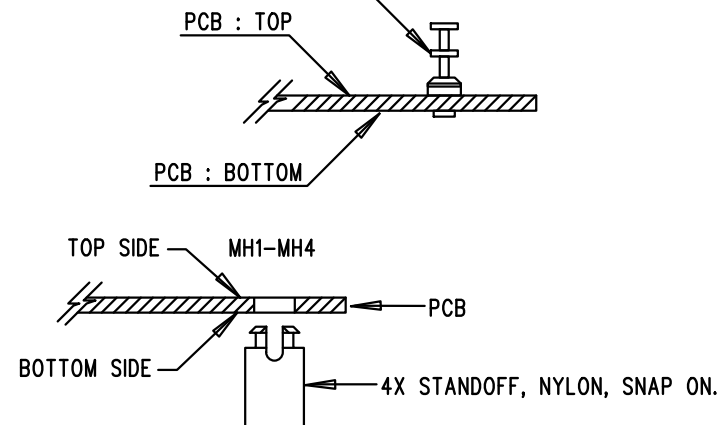
Item	Qty	Reference	Part Description	Manufacturer / Part #
REQUIRED CIRCUIT COMPONENTS:				
1	2	C1,C2	CAP CER 0.068UF 16V 10% X7R 0402	TDK, C1005X7R1C683K
2	1	C3	CAP CER 4.7uF 6.3V X5R 20% 0603	TDK, C1608X5R0J475M
3	2	C4, C13	CAP CER 22uF 25V X7R 20% 1812	TDK, C4532X7R1E226M
4	1	C5	CAP CER 1.0uF 25V X5R 0603	TDK, C1608X5R1E105M
5	1	C6	CAP CER 10UF 50V 20% X7R 2220	TDK, C5750X7R1H106M230KB
6	1	C8	CAP CER 1.0uF 50V X7R 20% 1206	TDK, C3216X7R1H105M
7	1	C9	CAP CER 4700PF 25V X7R 10% 0402	TDK, C1005X7R1E472K
8	1	C10	CAP CER 10PF 50V C0G 0402	TDK, C1005C0G1H100D
9	1	C11	CAP CER 10000PF 25V 20% X7R 0402	TDK, C1005X7R1E103M050BB
10	1	D1	DIODE SCHOTTKY 20V	NXP, PMEG2010AEH
11	1	D2	DIODE SCHOTTKY 60V, 2A	NXP, PMEG6020ER,115
12	1	L1	INDUCTOR, 6.8 uH +/-30%	COILCRAFT, MSS1048-682NLB
13	1	R1	RES 2.00M OHM 1/16W 1% 0402 SMD	VISHAY, CRCW04022M00FKED
14	1	R2	RES 499K OHM 1/16W 1% 0402 SMD	VISHAY, CRCW0402499KFKED
15	1	R3	RES 21.0K OHM 1/16W 1% 0402 SMD	VISHAY, CRCW040221K0FKED
16	1	R4	RES 27.4K OHM 1/16W 1% 0402 SMD	VISHAY, CRCW040227K4FKED
17	1	R5	RES 1.00M OHM 1/16W 1% 0402 SMD	VISHAY, CRCW04021M00FKED
18	1	R8	RES 49.9 OHM 1/16W 1% 0402 SMD	VISHAY, CRCW040249R9FKED
19	1	U1	40V, 1A BUCK-BOOST DC/DC CONVERTER WITH PROGRAMMABLE OUTPUT CURRENT	LINEAR TECHNOLOGY, LTC3114EDHC-1
ADDITIONAL DEMO BOARD CIRCUIT COMPONENTS:				
20	0	C7	CAP 330uF 63V ELECT MVA SMD	UNITED CHEMI-CON EMVA630ADA331MKG5S
21	0	C12	CAP CER 1000PF 25V X7R 0402	TDK, C1005X7R1E102M
22	0	C14	DNP	
23	0	R6, R7	DNP	
HARDWARE-FOR DEMO BOARD ONLY:				
24	4	E1,E2,E3,E4	TURRET, 0.09 DIA	MILL-MAX, 2501-2-00-80-00-00-07-0
25	2	JP2,JP1	HEADERS, 3 PINS, 2mm CTRs	SULLINS, NRPN031PAEN-RC
26	2	XJP1,XJP2	SHUNT, 2mm CTRs	SAMTEC, 2SN-BK-G


REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	1	PRODUCTION	J.NOON	11-7-15

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 4 LOCATIONS AS SHOWN BELOW:

(4 PLCS) : MILL-MAX 2501-2



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.	J.NOON	TITLE: TOP ASSEMBLY DRAWING: 40V, 1A BUCK-BOOST DC/DC CONVERTER WITH PROGRAMMABLE OUTPUT CURRENT	
		SIZE N/A	IC NO. LTC3114EDHC-1 DEMO CIRCUIT 1821B
			REV. 1
SCALE = NONE		FILENAME: DC1821B-1.PCB	SHT 1 of 2

LTC CONFIDENTIAL-FOR CUSTOMER USE ONLY

R7
C14

D1

D2

C12
R6

R5

REV 1

APPROVALS

PCB DES.	NC
APP ENG.	J.NOON



1630 MCCARTHY BLVD
MILPITAS, CA 95035
PH: (408)432-1900
www.Linear.com
LTC CONFIDENTIAL-
FOR CUSTOMER USE ONLY

TITLE: BOTTOM ASSEMBLY DRAWING:
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT

SIZE	IC NO.	LTC3114EDHC-1	REV.
N/A		DEMO CIRCUIT 1821B	1

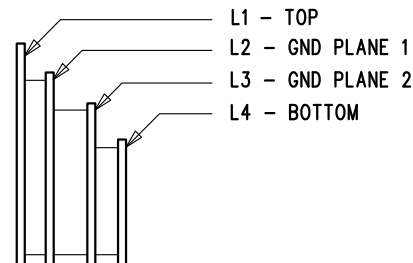
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SHT 2 of 2

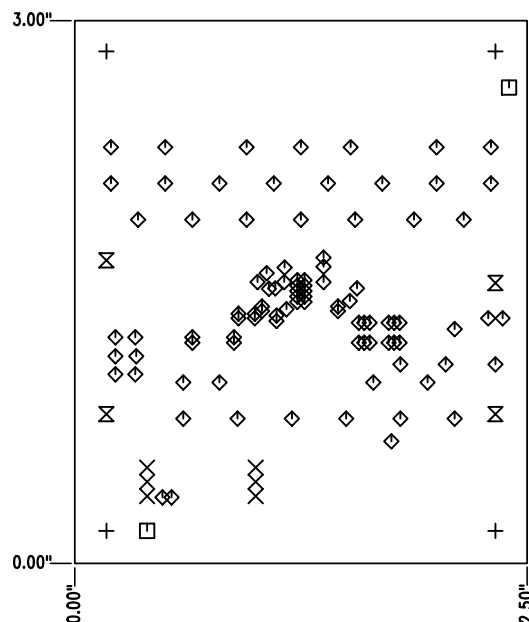
REVISION HISTORY				
ECO	REV	DESCRIPTION	APPR	DATE
-	1	PRODUCTION	J.NOON	11-7-15

LAYER STRUCTURE

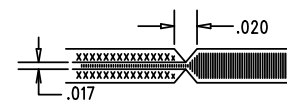


NOTES: UNLESS OTHERWISE SPECIFIED

- FAB PER IPC-A-600, CLASS 2.
- 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.
-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"



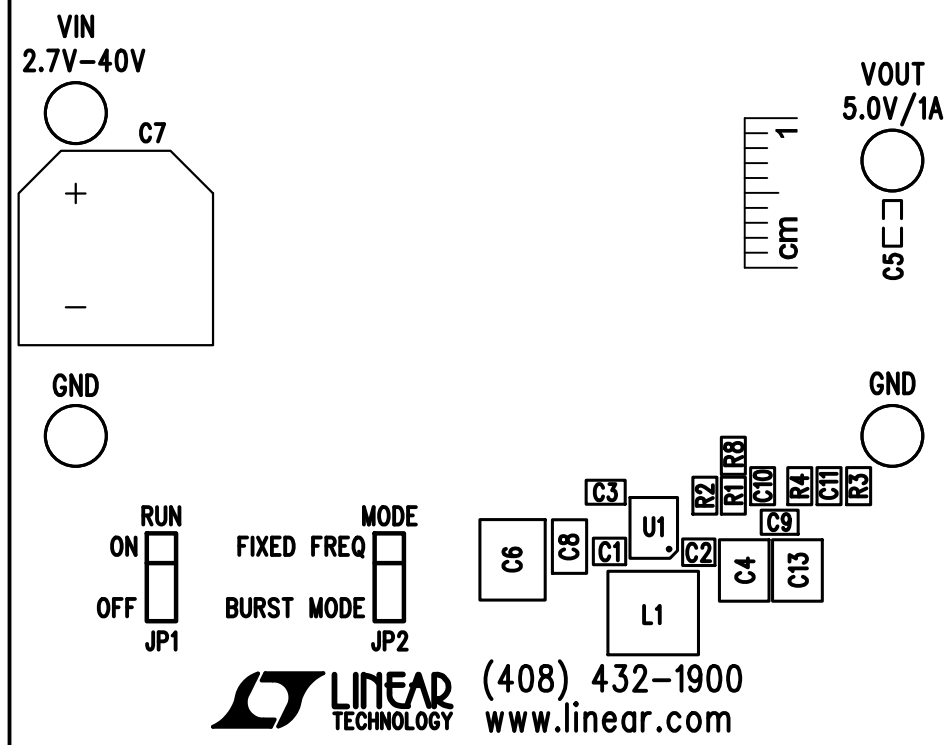
SIZE	QTY	SYM	PLATED	TOL
0.19	4	+	YES	+/-0.003
0.031	6	X	YES	+/-0.003
0.07	2	□	NO	+/-0.003
0.01	95	◇	YES	+/-0.003
0.094	4	⊗	YES	+/-0.003



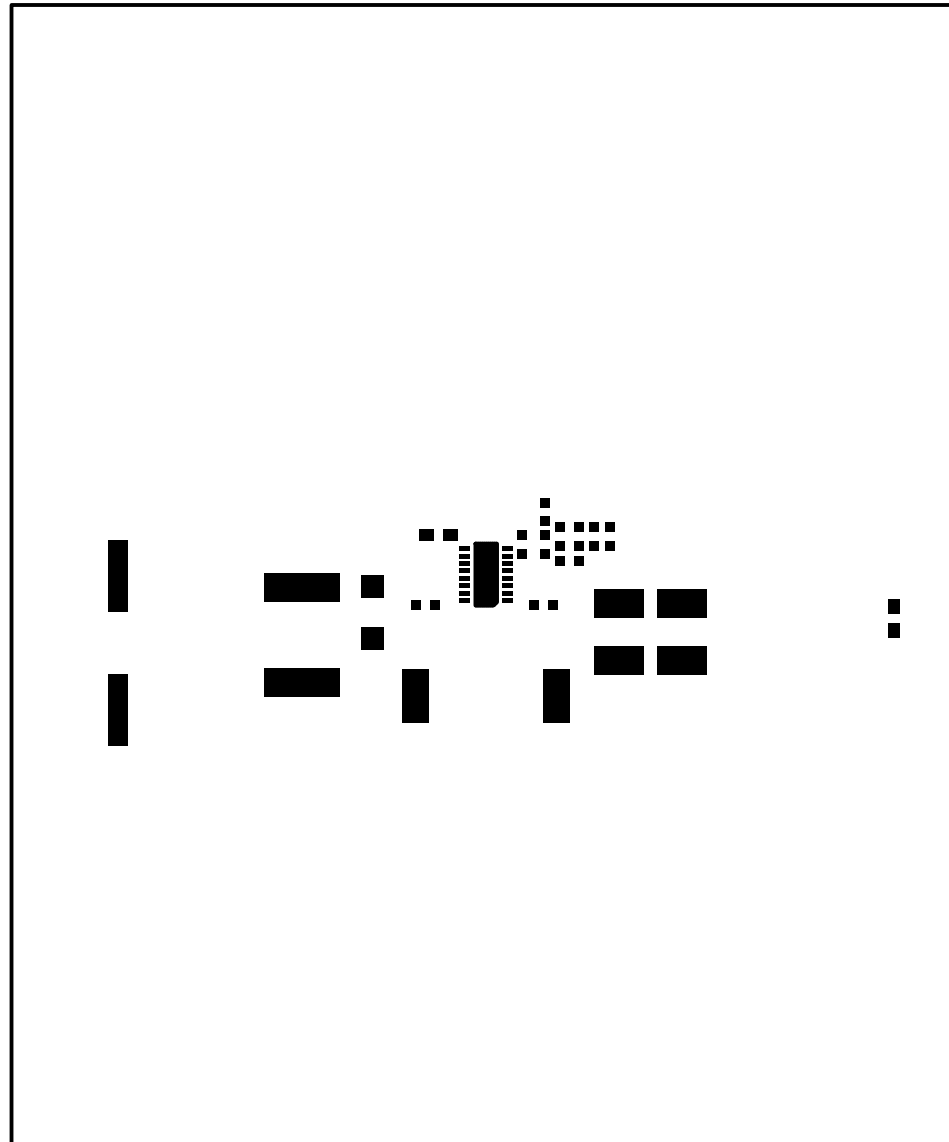
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON ANGLE ±1 0.XX" = ±0.01" 0.XXX" = ±0.005" INTERPRET DIM AND TOL PER ASME Y14.5M-1994 THIRD ANGLE PROJECTION	APPROVALS		1630 MCCARTHY BLVD MILPITAS, CA 95035 PH: (408)432-1900 www.linear.com LTC CONFIDENTIAL- FOR CUSTOMER USE ONLY
	PCB DES.	NC	
	APP ENG.	J.NOON	TECHNOLOGY TITLE: FABRICATION DRAWING: 40V, 1A BUCK-BOOST DC/DC CONVERTER WITH PROGRAMMABLE OUTPUT CURRENT
DO NOT SCALE DRAWING	SCALE: NONE	FILENAME: DC1821B-1.PCB	SIZE N/A IC NO. LTC3114EDHC-1 DEMO CIRCUIT 1821B REV. 1 SHT 1 of 1

LTC3114-1

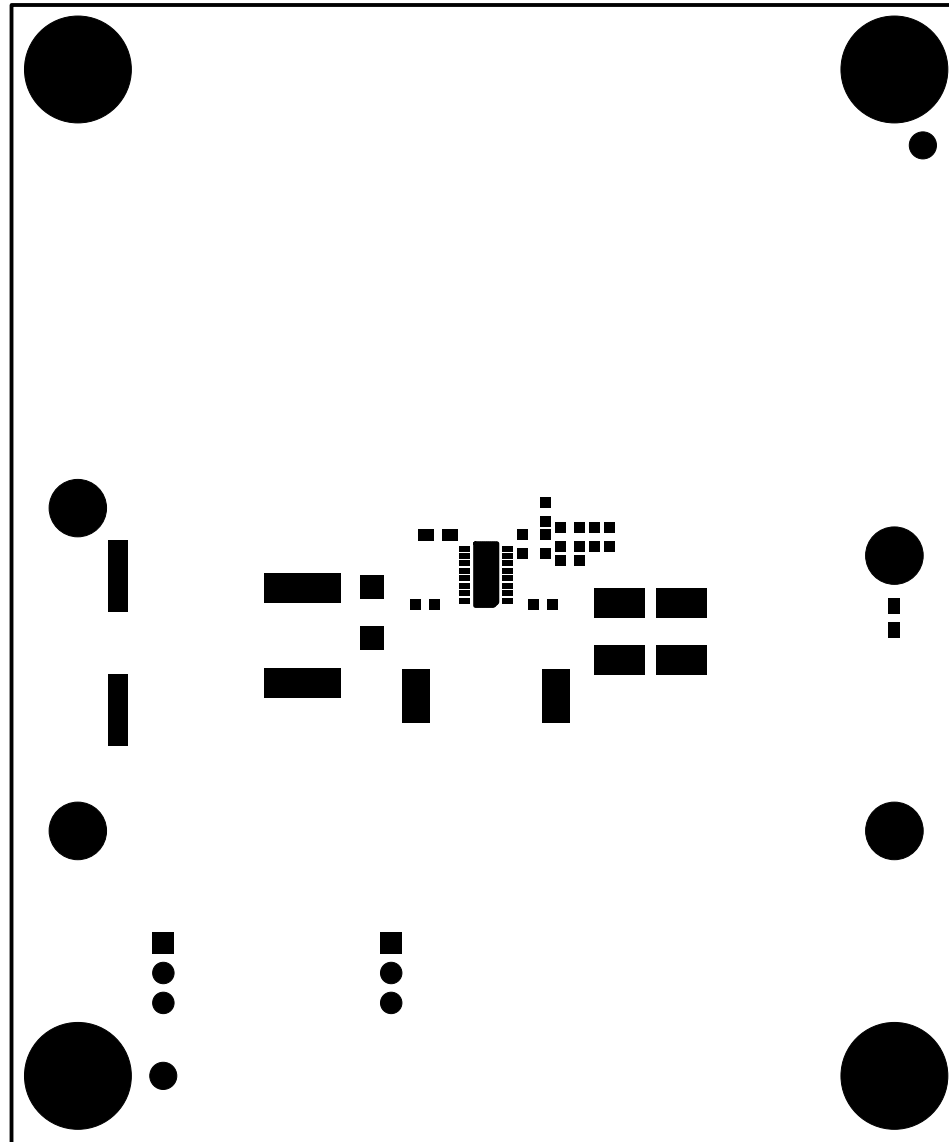
40V, 1A BUCK-BOOST DC/DC CONVERTER WITH PROGRAMMABLE OUTPUT CURRENT DEMO CIRCUIT 1821B



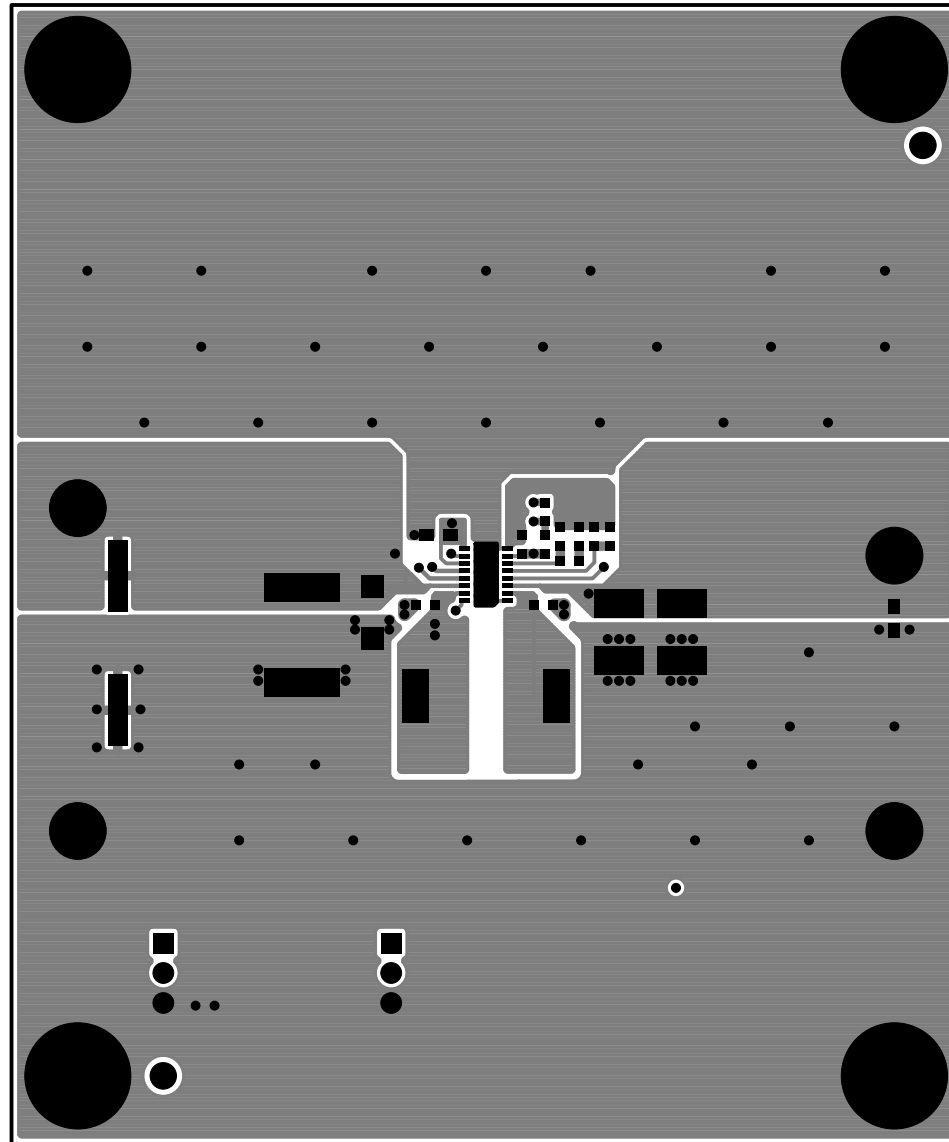
SILKSCREEN TOP
 LINEAR TECH CORP.
 DEMO CIRCUIT 1821B-1 * LTC3114-1
 40V, 1A BUCK-BOOST DC/DC CONVERTER
 WITH PROGRAMMABLE OUTPUT CURRENT
 DATE: 11-7-15



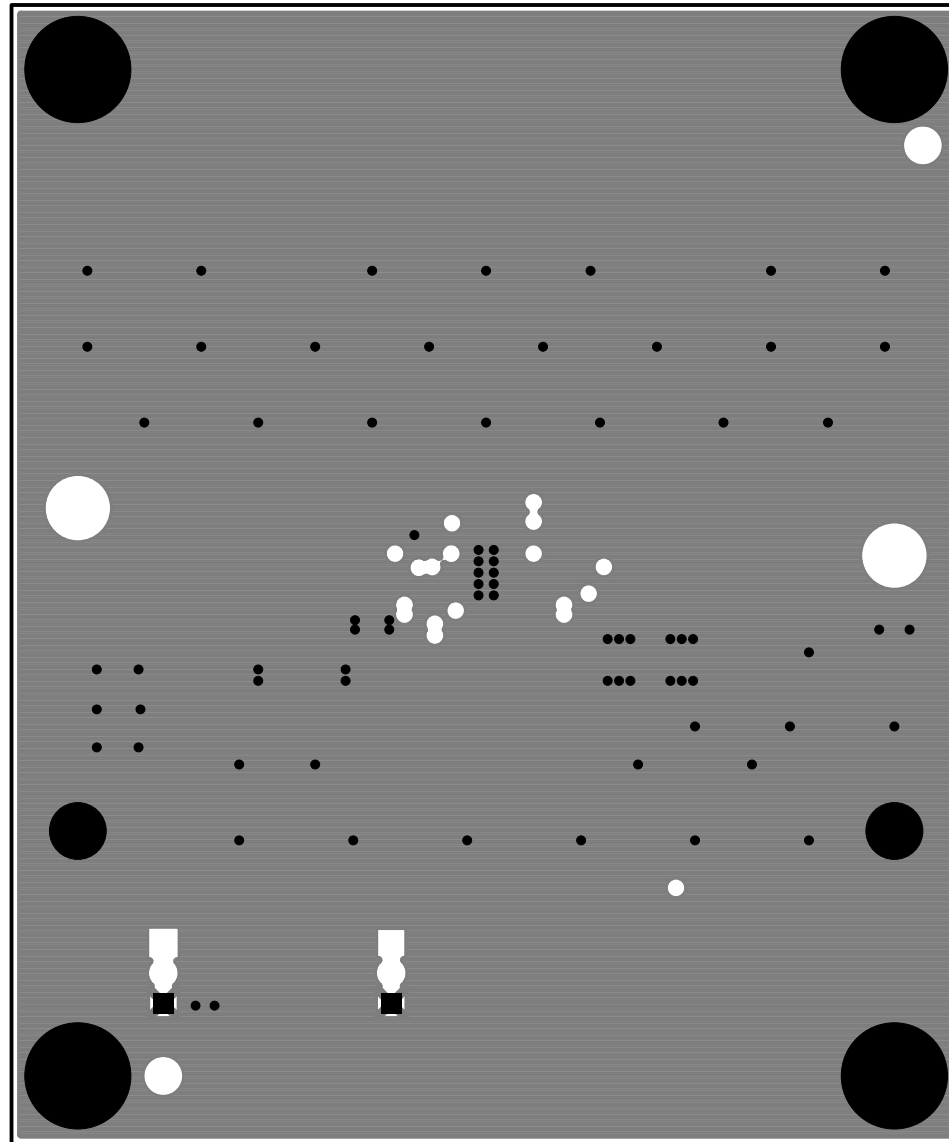
PASTEMASK TOP
LINEAR TECH CORP.
DEMO CIRCUIT 1821B-1 * LTC3114-1
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT
DATE: 11-7-15



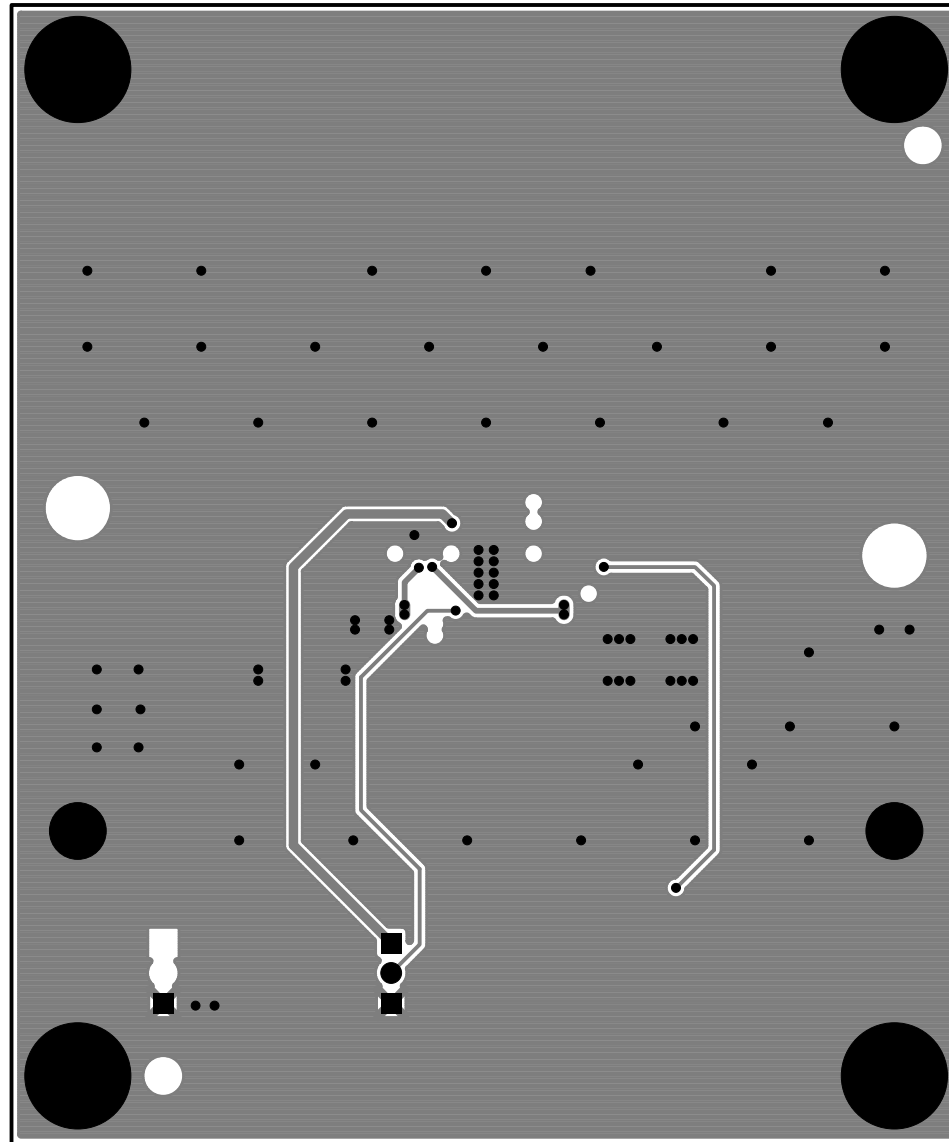
SOLDERMASK TOP
LINEAR TECH CORP.
DEMO CIRCUIT 1821B-1 * LTC3114-1
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT
DATE: 11-7-15



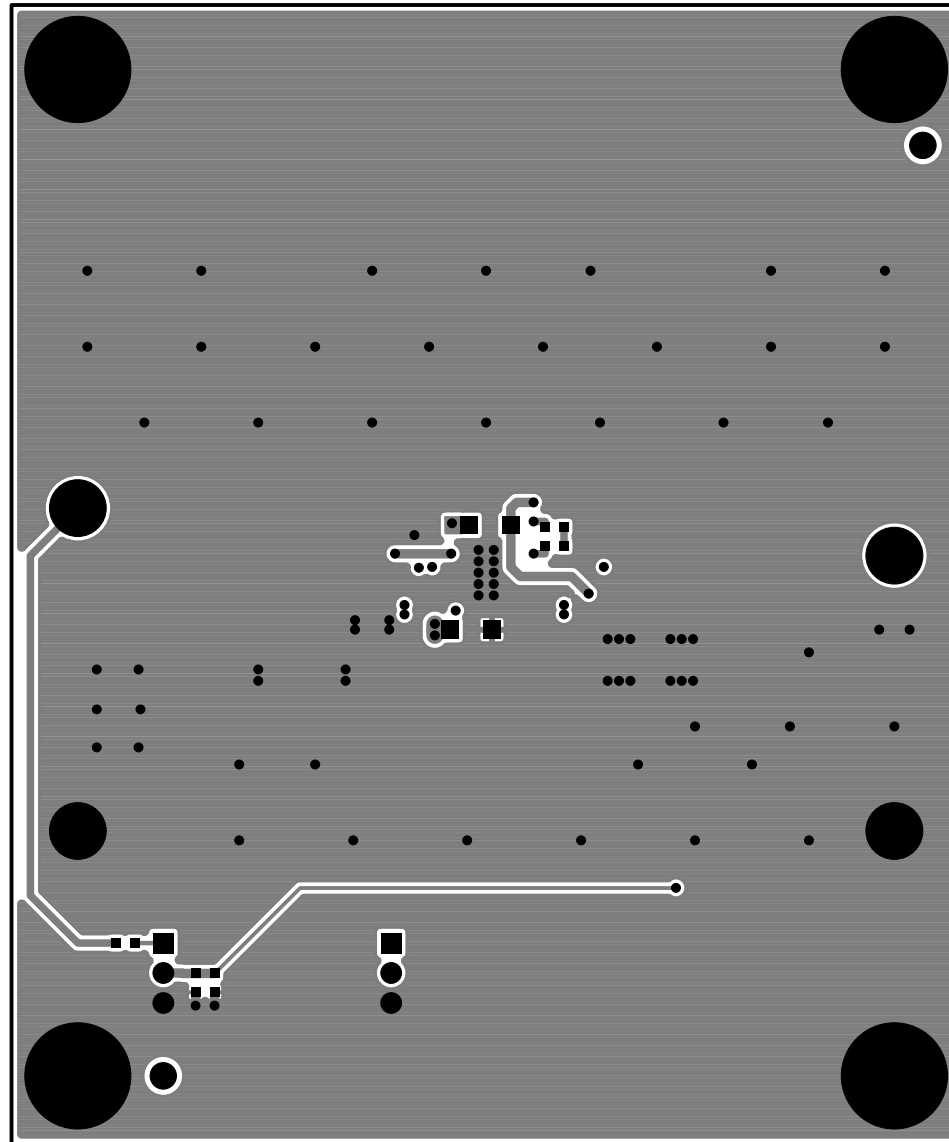
TOP LAYER
LINEAR TECH CORP.
DEMO CIRCUIT 1821B-1 * LTC3114-1
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT
DATE: 11-7-15



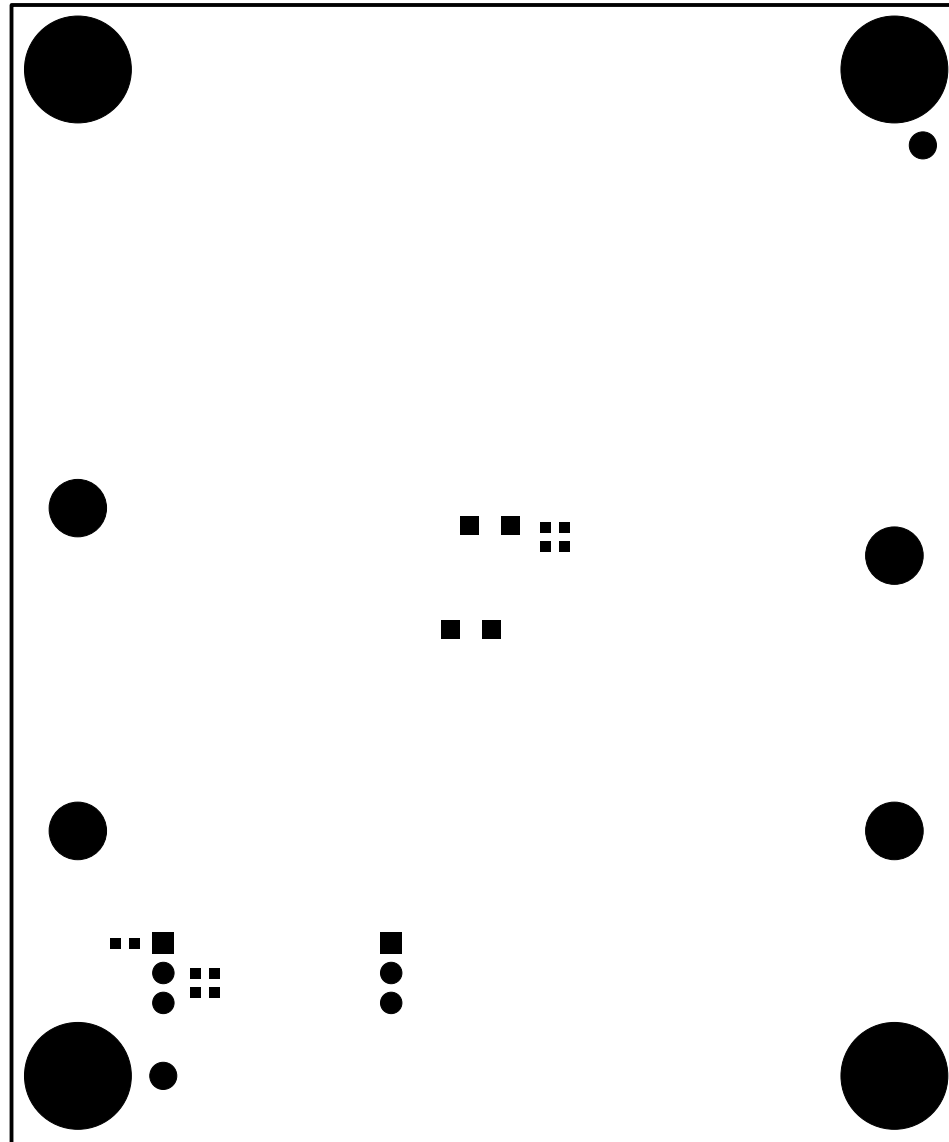
LAYER 2 GND PLANE
LINEAR TECH CORP.
DEMO CIRCUIT 1821B-1 * LTC3114-1
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT
DATE: 11-7-15



LAYER 3 GND PLANE
LINEAR TECH CORP.
DEMO CIRCUIT 1821B-1 * LTC3114-1
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT
DATE: 11-7-15



BOTTOM SIDE
LINEAR TECH CORP.
DEMO CIRCUIT 1821B-1 * LTC3114-1
40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT
DATE: 11-7-15



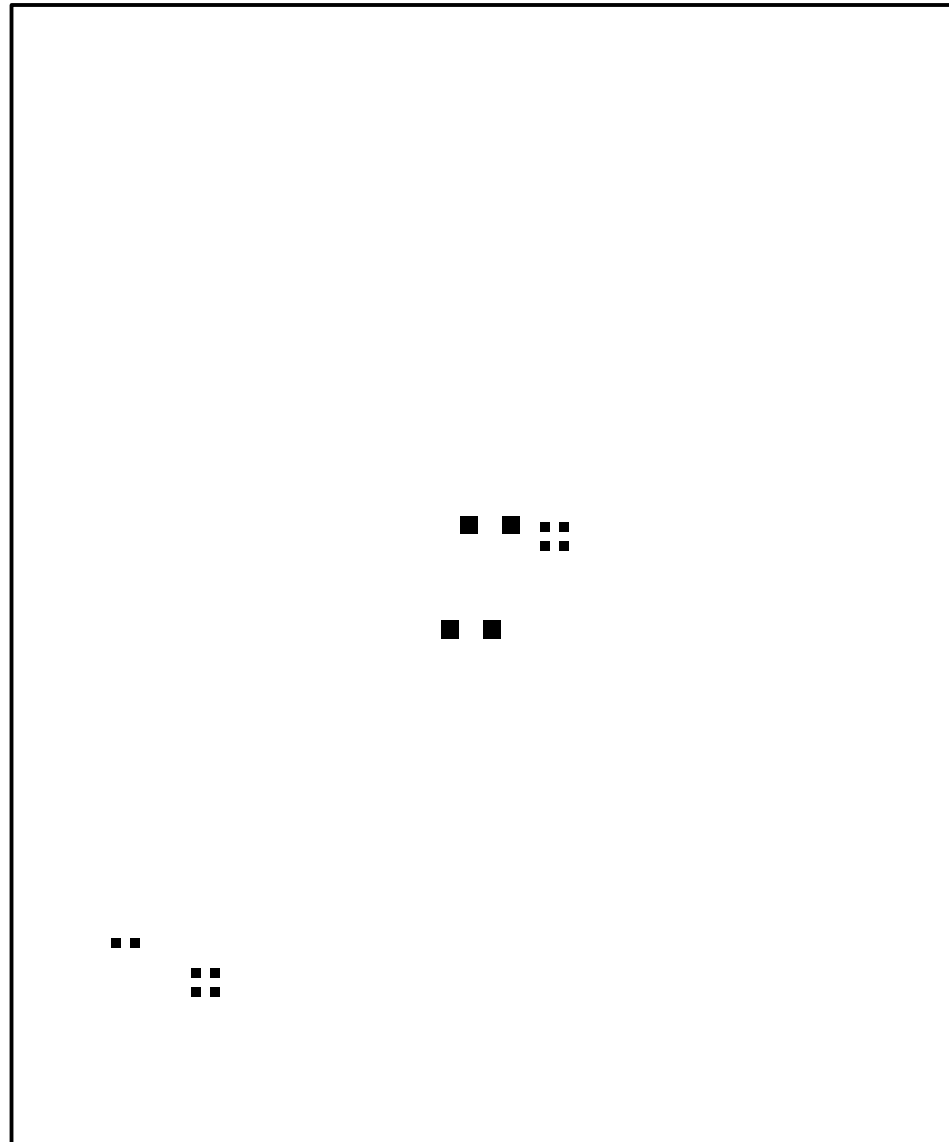
SOLDERMASK BOTTOM

LINEAR TECH CORP.

DEMO CIRCUIT 1821B-1 * LTC3114-1

40V, 1A BUCK-BOOST DC/DC CONVERTER
WITH PROGRAMMABLE OUTPUT CURRENT

DATE: 11-7-15



PASTEMASK BOTTOM

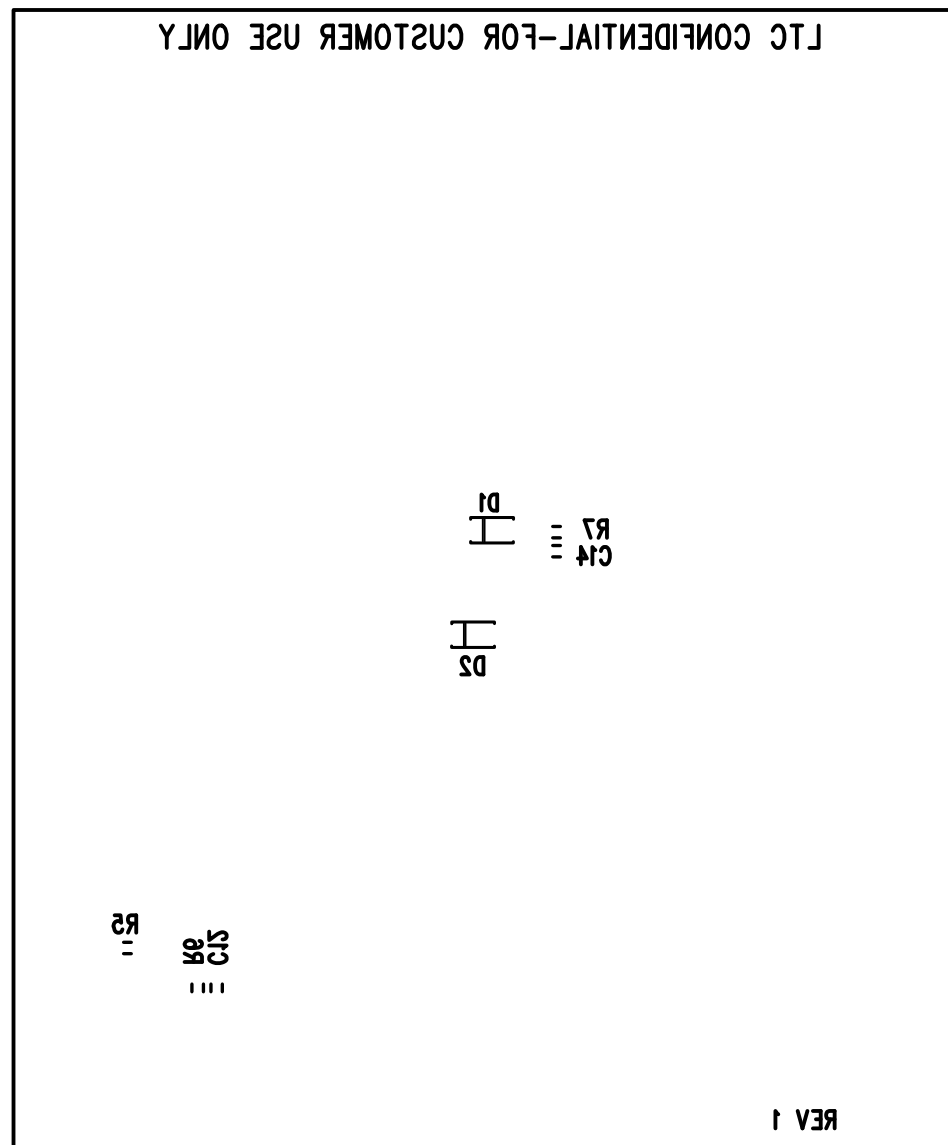
LINEAR TECH CORP.

DEMO CIRCUIT 1821B-1 * LTC3114-1

40V, 1A BUCK-BOOST DC/DC CONVERTER

WITH PROGRAMMABLE OUTPUT CURRENT

DATE: 11-7-15



SILKSCREEN BOTTOM

LINEAR TECH CORP.

DEMO CIRCUIT 1821B-1 * LTC3114-1

40V, 1A BUCK-BOOST DC/DC CONVERTER

WITH PROGRAMMABLE OUTPUT CURRENT

DATE: 11-7-15