DEMO CIRCUIT 1121
QUICK START GUIDE

LTC3524EUF
Adjustable TFT Bias Supply with WLED Driver

DESCRIPTION

Demonstration circuit 1121 is a bias and white LED power converter solution for small/medium-sized TFT-LCD panels. The circuit features the LT3524 adjustable TFT bias supply with white LED driver. The LTC3524 can operate from a single Lithium-Ion/polymer battery or any voltage source between 2.5V and 6V, making it ideal solution for PDAs, GPS and handheld portable displays. A synchronous boost convert provides 5V with up to 25mA. Regulated, low ripple charge pump regulators provides 12.5V and -7.5V at 2mA. The output sequencing is internally controlled to insure proper initialization and rapid discharge of the LCD panel in shutdown. Another 1.5MHz boost converter powers two LED strings with 4 series elements each.

The LTC3524 datasheet gives a complete description of the part, operation and application information. The datasheet must be read in conjunction with this quick start guide for Demo circuit 1121.

Design files for this circuit board are available. Call the LTC factory.

, LTC and LT are registered trademarks of Linear Technology Corporation. ThinSOT and PowerPath are trademarks of Linear Technology Corporation.

Performance Summary (T_A = 25°C)

PARAMETER	CONDITION	VALUE
Minimum Input Voltage		2.5V
Maximum Input Voltage		4.6V
Output Voltage V_{OUT}		5V +/- 5%
Maximum Output Current at V_{OUT}		25mA
Current at LED1 or LED2	R_{10}=100kΩ	20mA +/- 10%
Typical Switching Frequency		1.5MHz

QUICK START PROCEDURE

Demonstration circuit 1121 is easy to set up to evaluate the performance of the LTC3524. Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

NOTE. When measuring the input or output voltage ripple, care must be taken to avoid a long ground lead on the oscilloscope probe. Measure the input or output voltage ripple by touching the probe tip directly across the Vin or Vout and GND terminals. See Figure 2 for proper scope probe technique.

1. Place JP1, JP2 and JP3 on the ON position.
2. With power off, connect the input power supply to Vin and GND.
3. Turn on the power at the input. Observe all white LEDs light up. Warning! Do not look directly at lighting LED. This circuit produces light that can damage eyes.
4. Check for the proper output voltage.

   NOTE. If there is no output, temporarily disconnect the load to make sure that the load is not set too high.
5. Once the proper output voltage is established, adjust the load within the operating range and observe the output voltage regulation, ripple voltage, efficiency and other parameters.

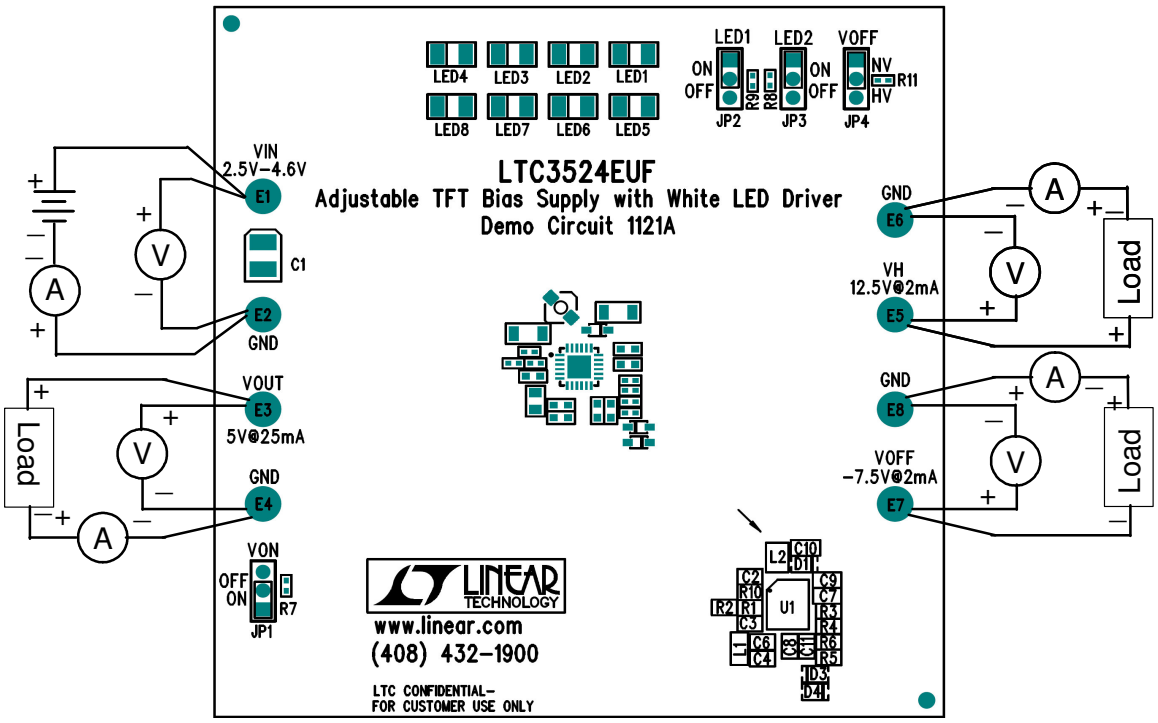


Figure 1. Proper Measurement Equipment Setup

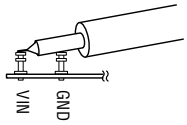
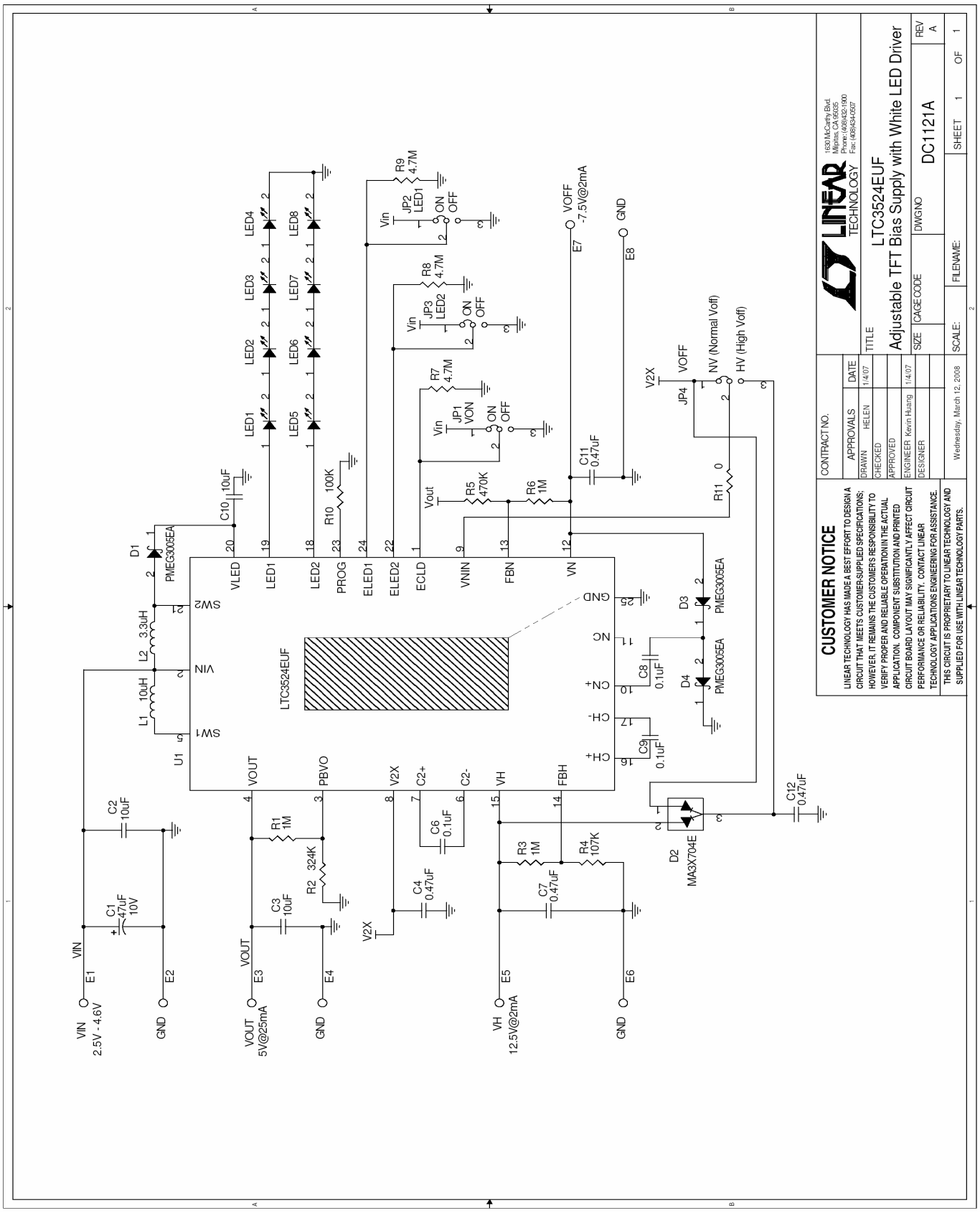


Figure 2. Measuring Input or Output Ripple


LTC3524EUF
U1
VIN
SW1
SW2
VOUT
PBVO
V2X
C2+
C2-
VH
FBH
GND
NC
CN+
CH-
CH+
VLED
LED1
LED2
PROG
ELED1
ELED2
ECLD
VNIN
FBN
VN
L1 10uH
L2 3.3uH
D1 PMEG3005EA
C1 47uF 10V
C2 10uF
C3 10uF
C4 0.47uF
C6 0.1uF
C7 0.47uF
C8 0.1uF
C9 0.1uF
C10 10uF
C11 0.47uF
C12 0.47uF
R1 1M
R2 324K
R3 1M
R4 107K
R5 470K
R6 1M
R7 4.7M
R8 4.7M
R9 4.7M
R10 100K
R11 0
D2 MA3X704E
D3 PMEG3005EA
D4 PMEG3005EA
JP1 VON
JP2 LED1
JP3 LED2
JP4 VOFF
NV (Normal Voff)
HV (High Voff)
LED1 LED2 LED3 LED4 LED5 LED6 LED7 LED8
ON OFF
Vin
Vout
E1 VIN
E2 GND
E3 VOUT
E4 GND
E5 VH
E6 GND
E7 VOFF -7.5V@2mA
E8 GND
VIN 2.5V - 4.6V
VOUT 5V@25mA
VH 12.5V@2mA
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.
CONTRACT NO.
APPROVALS DATE
DRAWN HELEN 1/4/07
CHECKED
APPROVED
ENGINEER Kevin Huang 1/4/07
DESIGNER
Wednesday, March 12, 2008
LINEAR TECHNOLOGY
1630 McCarthy Blvd.
Milpitas, CA 95035
Phone: (408)432-1900
Fax: (408)434-0507
TITLE
LTC3524EUF
Adjustable TFT Bias Supply with White LED Driver
SIZE CAGE CODE DWG NO DC1121A REV A
SCALE: FILENAME: SHEET 1 OF 1

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Power Management IC Development Tools ***category:***

Click to view products by Analog Devices ***manufacturer:***

Other Similar products are found below :

EVAL-ADM1168LQEBZ EVB-EP5348UI MIC23451-AAAYFL EV MIC5281YMME EV DA9063-EVAL ADP122-3.3-EVALZ ADP130-0.8-EVALZ ADP130-1.2-EVALZ ADP130-1.5-EVALZ ADP130-1.8-EVALZ ADP1714-3.3-EVALZ ADP1716-2.5-EVALZ ADP1740-1.5-EVALZ ADP1752-1.5-EVALZ ADP1828LC-EVALZ ADP1870-0.3-EVALZ ADP1871-0.6-EVALZ ADP1873-0.6-EVALZ ADP1874-0.3-EVALZ ADP1882-1.0-EVALZ ADP199CB-EVALZ ADP2102-1.25-EVALZ ADP2102-1.875EVALZ ADP2102-1.8-EVALZ ADP2102-2-EVALZ ADP2102-3-EVALZ ADP2102-4-EVALZ ADP2106-1.8-EVALZ ADP2147CB-110EVALZ AS3606-DB BQ24010EVM BQ24075TEVM BQ24155EVM BQ24157EVM-697 BQ24160EVM-742 BQ24296MEVM-655 BQ25010EVM BQ3055EVM NCV891330PD50GEVB ISLUSBI2CKIT1Z LM2744EVAL LM2854EVAL LM3658SD-AEV/NOPB LM3658SDEV/NOPB LM3691TL-1.8EV/NOPB LM4510SDEV/NOPB LM5033SD-EVAL LP38512TS-1.8EV EVAL-ADM1186-1MBZ EVAL-ADM1186-2MBZ