DESCRIPTION

Demonstration circuit 692 is a high efficiency 1.2MHz boost DC/DC converter featuring the LTC3426ES6. The board is capable of supplying 400mA current from 1.8V to 4.2V input with a 5V output. It can deliver 5V at 800mA from a 3.3V input. The converter has internal soft start and internal frequency compensation features. The LTC3426 chip is in a low profile (1mm) SOT-23 package and has very low shutdown current of about 0.5μA.

A switching frequency of 1.2MHz allows a tiny solution footprint. Typical applications include local 3.3V or 5V supply, battery back-up, portable devices and white LED driver supply.

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

LTC is a trademark of Linear Technology Corporation

Table 1. Performance Summary

PARAMETER	CONDITION	VALUE
Maximum Load Current, Min	Vout = 5V, Vin = 1.8V	400mA
Maximum Load Current, Min	Vout = 5V, Vin = 3.3V	800mA
Switching Frequency, Typ		1.2MHz
Efficiency, Typ	Vout = 5V, Vin = 3.3V, Iout = 800mA	87%
Output Ripple, Typ	Vout = 5V, V_{IN} = 3.3V, I_{OUT} = 400mA (20MHz BW)	90mV_{P-P}

QUICK START PROCEDURE

Demonstration circuit 692 is easy to set up to evaluate the performance of the LTC3426. 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 the jumper in the following position:

   JP1 On

2. With power off, connect the input power supply (1.8V-4.2V) to Vin and GND. Connect the load to Vout and GND. Set initial load = 0A (no load).
3. Turn on the power at the input.
4. Check for the output voltage. Vout should be 5V±0.2V.
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.

   NOTE: If there is no output, temporarily disconnect the load to make sure that the load is not set too high. The available output current depends on the input voltage. The output diode is rated for 1A current.

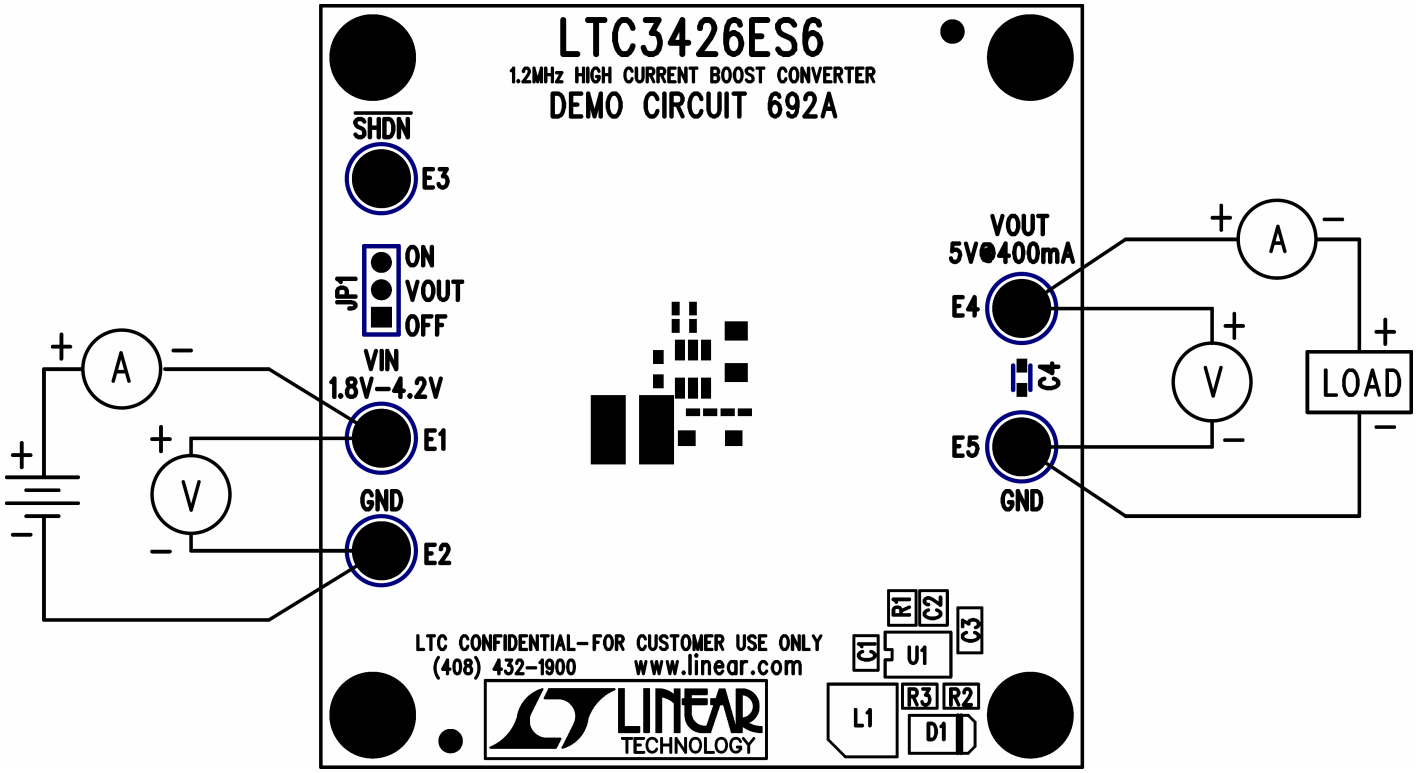


Figure 1. Proper Measurement Equipment Setup

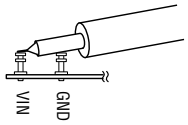
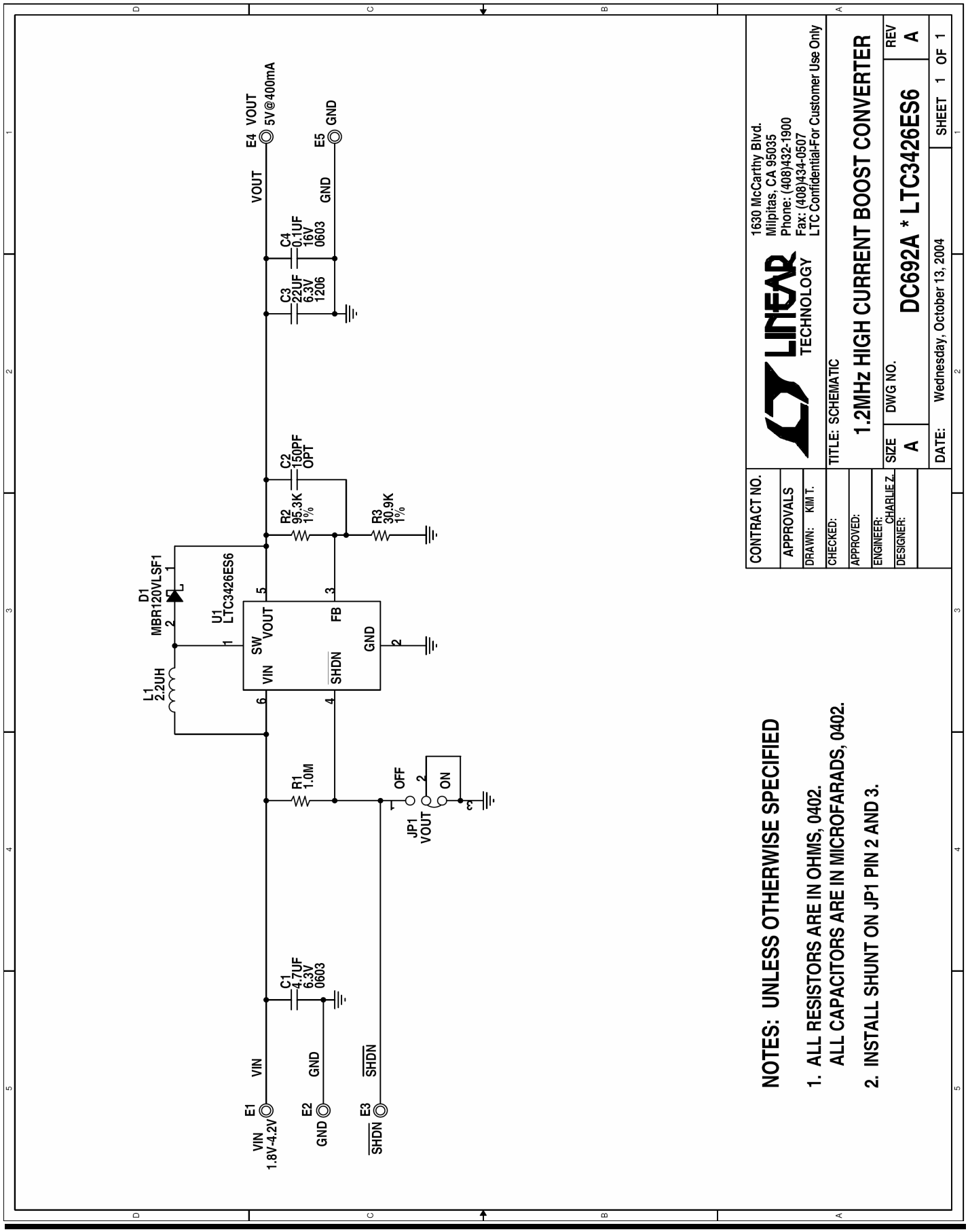


Figure 2. Measuring Input or Output Ripple


E4 VOUT
5V@400mA
E5 GND
VOUT
GND
C4
0.1UF
16V
0603
C3
22UF
6.3V
1206
C2
150PF
OPT
R2
95.3K
1%
R3
30.9K
1%
D1
MBR120VLSF1
L
U1
LTC3426ES6
SW
VOUT
FB
VIN
SHDN
GND
L1
2.2UH
R1
1.0M
OFF
ON
JP1
VOUT
C1
4.7UF
6.3V
0603
E1 VIN
VIN
1.8V-4.2V
E2 GND
GND
E3 SHDN
SHDN
CONTRACT NO.
APPROVALS
DRAWN: KIM T.
CHECKED:
APPROVED:
ENGINEER:
CHARLIE Z.
DESIGNER:
LINEAR TECHNOLOGY
1630 McCarthy Blvd.
Milpitas, CA 95035
Phone: (408)432-1900
Fax: (408)434-0507
LTC Confidential-For Customer Use Only
TITLE: SCHEMATIC
1.2MHz HIGH CURRENT BOOST CONVERTER
SIZE
A
DWG NO.
DC692A * LTC3426ES6
REV
A
DATE: Wednesday, October 13, 2004
SHEET 1 OF 1
NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTORS ARE IN OHMS, 0402.
ALL CAPACITORS ARE IN MICROFARADS, 0402.
2. INSTALL SHUNT ON JP1 PIN 2 AND 3.

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