

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 501

Universal High Input Voltage 12V/6A POWER SUPPLY

LTC3703

DESCRIPTION

Demonstration circuit 501 is high power, high voltage, and high efficiency DC/DC buck converter featuring the LTC3703.

This is a general-purpose high voltage DC to DC with an input voltage range of 20V to 72V. The board is optimized for positive 48V input operation with high voltage surges up to 72VDC allowed. The limiting factor is the LTC3703 GN16 package that will not meet UL/CSA/IEC60950 clearance and creepage distance requirements above the SELV 60VDC maximum due to pin spacing. If the user wishes to support higher continuous input voltages or compliance to 60950, the LTC3703 is offered in a G-28 pin package. See Data Sheet. However, for the purposes of evaluation, the board will work reliably up to 72V.

The maximum continuous current in free air is 4A. 6A is permissible with some forced air cooling. The output voltage is programmed with a voltage divider and configured for 12V.

The demonstration circuit comes with jumpers preset to power up in the continuous switching mode. Test points are provided to monitor or control Mode/SYNC, BGRTN and VCC.

Table 1. Performance Summary

PARAMETER	CONDITION/NOTES	VALUE
Maximum Input Voltage	Limited by MOSFET Voltage Ratings.	72V $\pm 10\%$
Minimum Input Voltage		20V $\pm 10\%$
Efficiency	Vin = 48V with 4 amp load Vin = 24V with 4 amp load	93% 95%
Switching Frequency	User adjustable.	260KHz Nominal
Output Voltage	0 to 6 Amps measured at VOUT and GND terminals.	12V $\pm 2\%$
Maximum Current Free Air	Limited by temperature rise of inductor.	4A
Maximum Current with Force Air cooling	Accuracy and limit set by Rds-on value of bottom MOSFET. See Datasheet.	6A -0A / +3A

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QUICK START PROCEDURE

Demonstration circuit 501 is easy to set up to evaluate the performance of the LTC3703. Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

1. Connect a power source to the VIN and GND. The power supply must be capable of at least 120 watts of power at the input voltage you choose provided it is within the Vin range permitted.

2. Connect a load to the VOUT and GND terminals and set it to 0Amps
3. Turn on the input power supply and DC501 should power up.
4. Adjust load as required for evaluation.

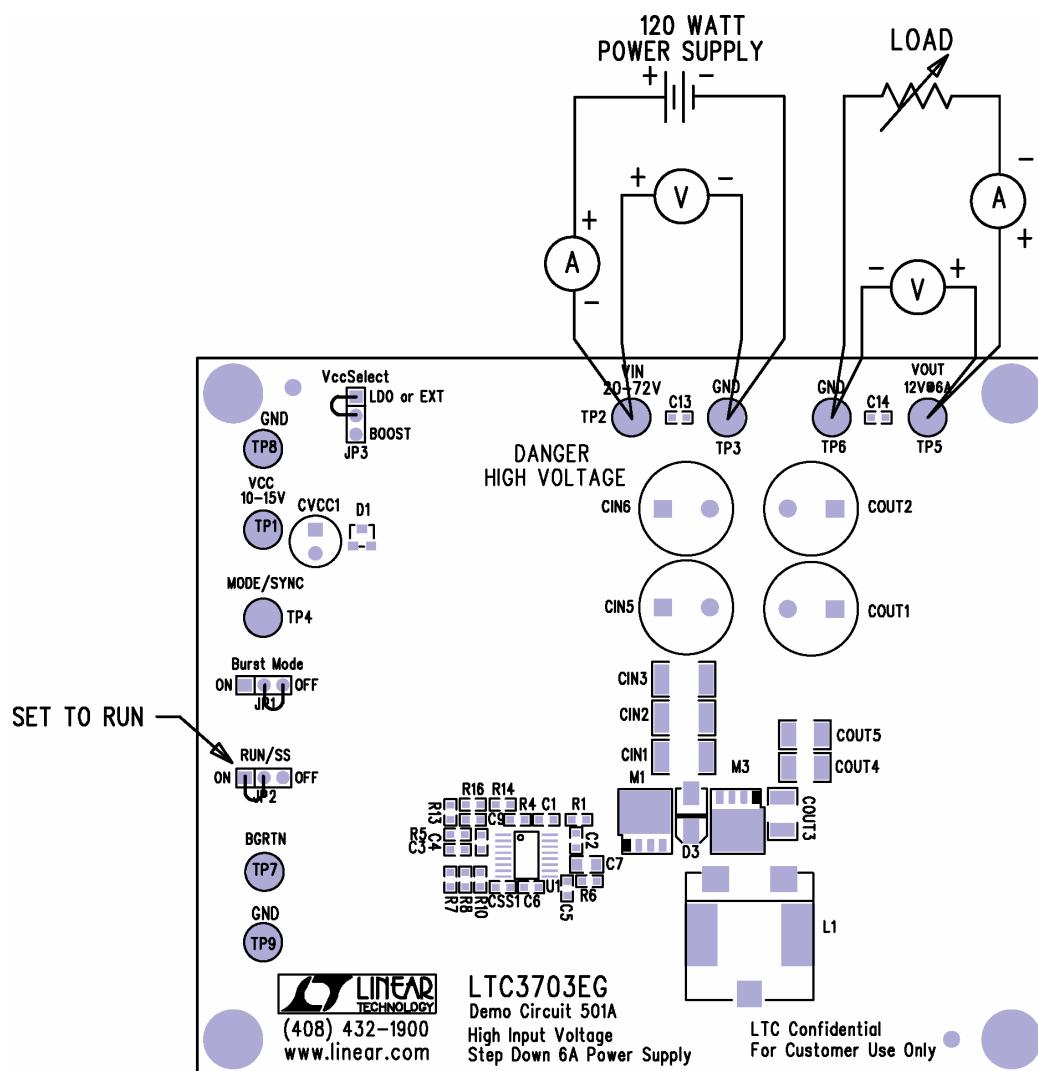
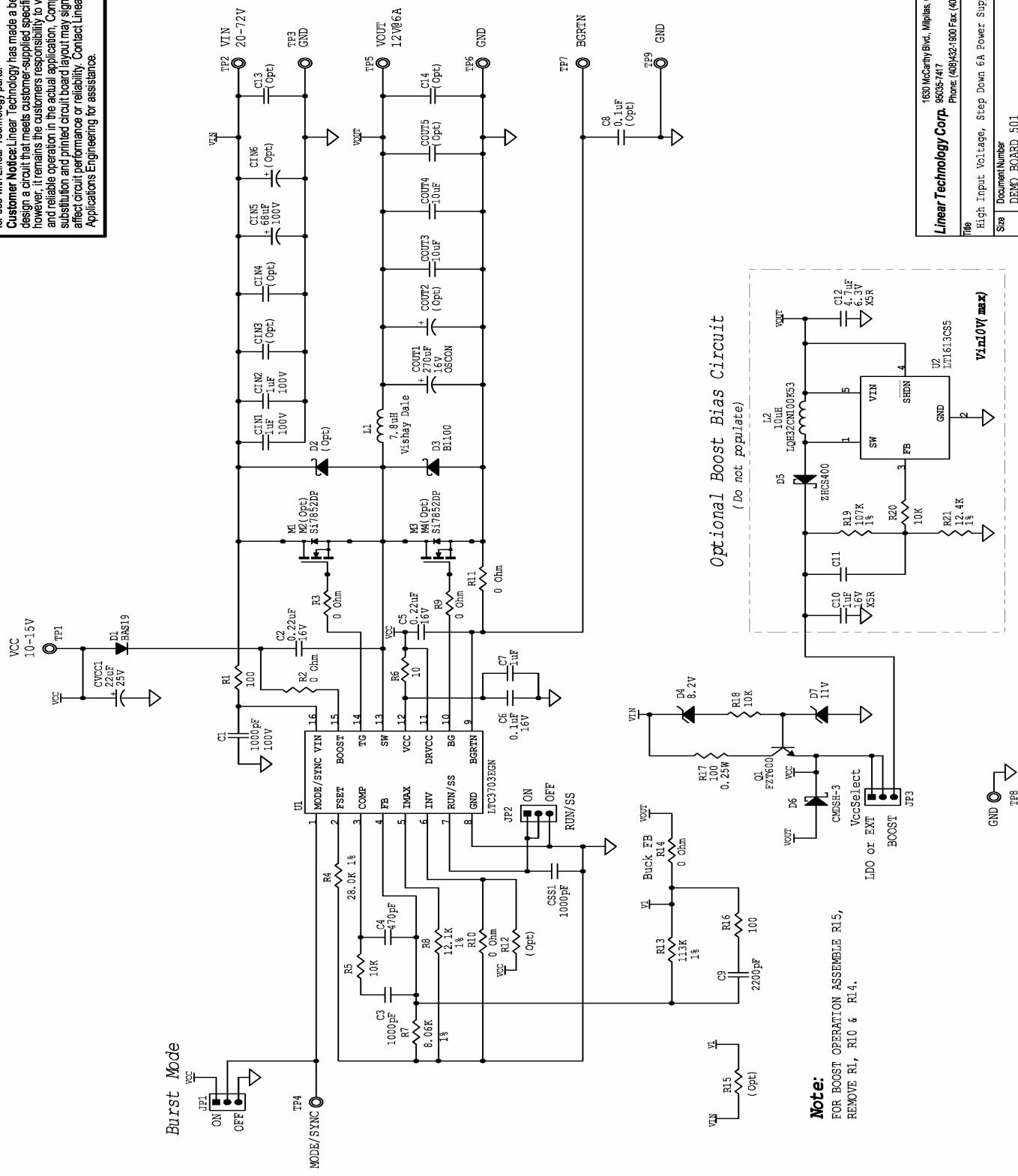


Figure 1. Proper Measurement Equipment Setup

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Size	Demonstrator Board 501
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