

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 925

TRIPLE OUTPUT TFT LCD BIAS SUPPLY

LT3489EMS8E

DESCRIPTION

Demonstration circuit 925 features the LT3489EMS8E in a circuit specifically designed to drive large TFT/LCD displays. The demo circuit demonstrates small size and low component count in a Boost Circuit. It converts a 3.3V-6V input to 8V at 600mA, 23V at 10mA and -8V at 20mA. Since the maximum V_{IN} of the LT3489 is 16V, this Demo circuit will work well at higher inputs. The only limitation is that the input has to be lower than the Boost converter output (8V) in order to stay in regulation.

This circuit is designed to demonstrate the capacitor programmable Soft-Start feature, advantages of the 2MHz constant switching frequency and the internal 2.5A, 40V switch. This circuit is intended for large TFT-LCD displays and other space-conscious applications such as Bias Supplies, GPS Receivers, DSL Modems and Local Power Supplies.

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

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Table 1. Performance Summary ($T_A = 25^\circ\text{C}$)

PARAMETERS FOR 15V BOOST CIRCUIT	CONDITION	VALUE
Minimum Input Voltage		3.3V
Output Voltage V_{OUT}	$V_{IN} = 3.3\text{V}$, $I_{OUT} = 0\text{mA}$ to 600mA	$8\text{V} \pm 3\%$
Maximum Output Current for 8V Output	$V_{IN} = 3.3\text{V}$, 23V@10mA and -8V@20mA	600mA
Typical Output Ripple V_{OUT} for 8V Output	$V_{IN} = 3.3\text{V}$, $I_{OUT} = 600\text{mA}$	30mV _{P-P}
Typical Efficiency All Outputs Loaded	$V_{IN} = 3.3\text{V}$, $V_{out} = 8\text{V}@400\text{mA}$, -8V@20mA, 23V@10mA	83%

QUICK START PROCEDURE

Demonstration circuit 925 is easy to set up to evaluate the performance of the LT3489EMS8E. 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 V_{IN} or V_{out} and GND terminals. See Figure 2 for proper scope probe technique.

1. Place jumpers in the following positions:

JP1 On

2. With power off, connect the input power supply to V_{IN} and GND.
3. Turn on the power at the input.
4. Check for the proper output voltages.

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 voltages are established, adjust the loads within the operating range and observe the output voltage regulation, ripple voltage, efficiency and other parameters.

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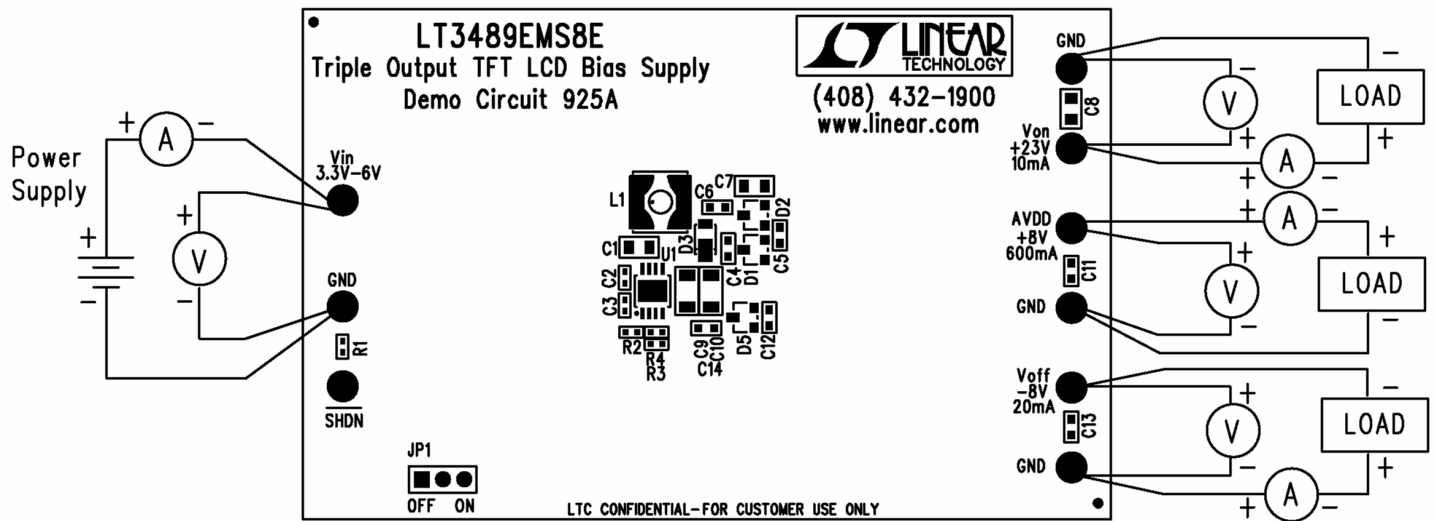


Figure 1. Proper Measurement Equipment Setup

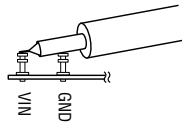


Figure 2. Measuring Input or Output Ripple

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