LTC6655
0.25ppm Noise, Low Drift Precision Reference

DESCRIPTION

Demonstration circuit 2095A features the LTC®6655, a precision low drift reference packaged in a hermetic LS8. The demonstration circuit is available with the 2.5V, 4.096V or 5V output voltage option parts.

The demo board circuit shows the optimal layout for overall reference performance. The LTC6655 has a maximum drift of 2ppm/°C and an initial accuracy of ±0.025%. The hermetic package further improves the Long Term Drift performance of the reference to 20ppm/$\sqrt{kHr}$. Another benefit of the hermetic package is improved humidity performance. Testing has shown that humidity can cause the PCB to deform and stress the package. To reduce this effect the ground plane is removed directly under the reference. Doing this reduces output voltage shift as a result of humidity to less than 10ppm.

Design files for this circuit board are available at http://www.linear.com/demo/DC2095A

PERFORMANCE SUMMARY

Specifications are at T_A = 25°C

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
V_{IN}	Input Supply Range		V_{OUT} + 0.5		13	V
V_{OUT}	Output Voltage Accuracy		–0.025		+0.025	%
Long-Term Drift of Output Voltage				20		ppm/$\sqrt{kHr}$
I_Q	Supply Current			5		mA

QUICK START PROCEDURE

With the demonstration circuit, it is easy to set up and evaluate the performance of the LTC6655. Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

1. With the power off, connect the power supply positive to V_{IN} and the common to GND. With default settings, the supply can range from V_{OUT} +0.5V to 13V.
2. Connect a DVM to the V_{OUT} turret with the common connection connected to ground.
3. Turn on power supply and confirm reference operation.

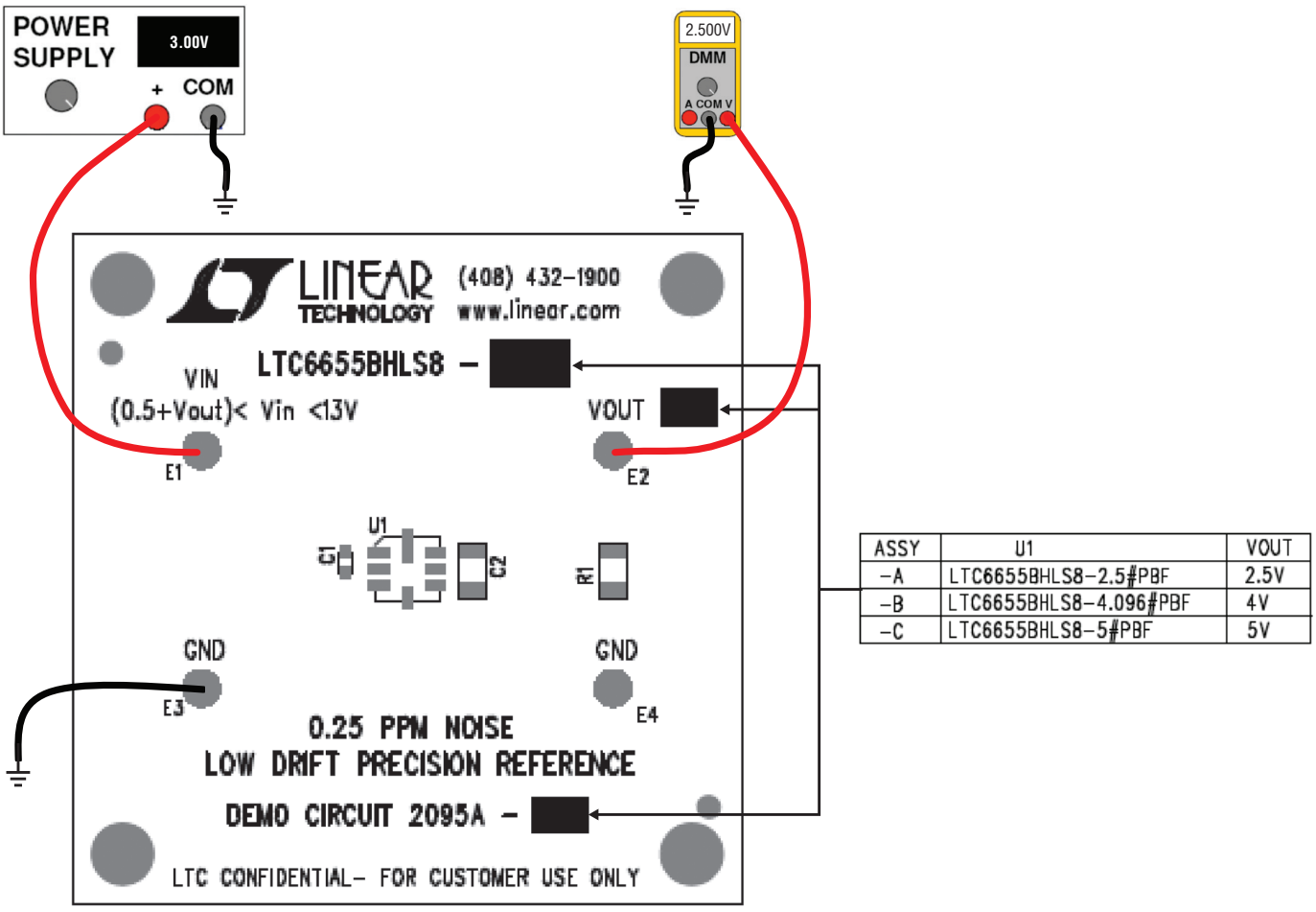
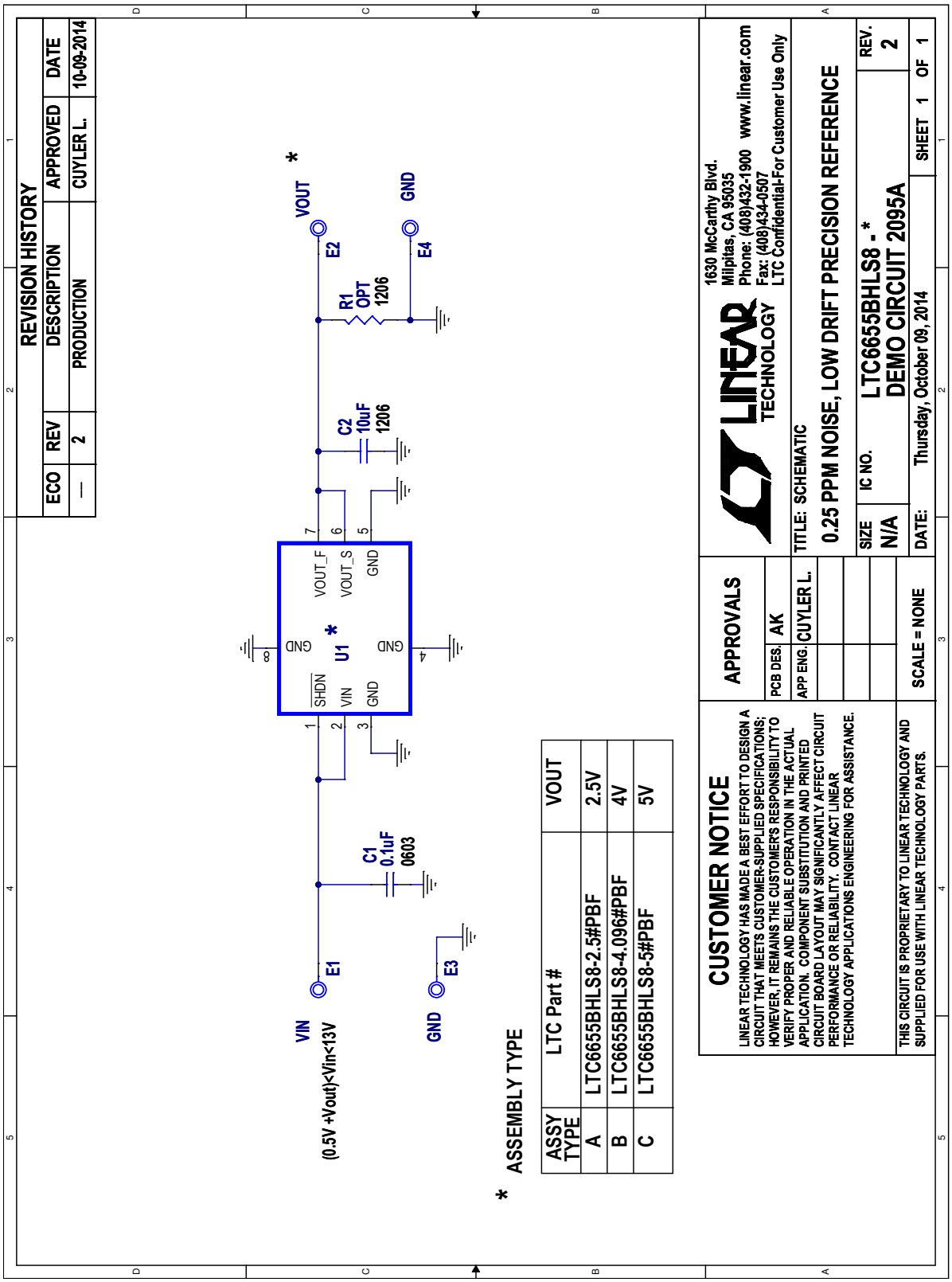


Figure 1. Test Setup

SCHEMATIC DIAGRAM



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