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LTC2997 Remote/Internal Temperature Sensor

DESCRIPTION

Demonstration circuit 1767 features the LTC[®]2997, a high accuracy, analog output, temperature sensor.

DC1767 is designed to allow easy evaluation of the LTC2997.

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

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QUICK START PROCEDURE

Jumper Settings

D+/D-: These jumpers select which temperature input connects to the LTC2997. INT uses the internal temperature sensor, EXT uses an off-board sensor connected to the D+/D- analog inputs, and Q1 uses the transistor stuffed in Q1 (the MMBT3904 by default).

Analog Connections

Analog signal connections are made via the row of turret posts along the edges of the board.

GND: (2 turrets) These turrets connect directly to the internal ground planes.

VCC: Connect a 2.25V to 5.5V power supply to this turret.

D+/D-: Should be set to EXT. This is where the external diode should be connected.

VREF: Output Only. 1.8V output that can drive up to $\pm 200\mu\text{A}$ of load.

VPTAT: The voltage on this turret is proportional to the sensor's absolute temperature, with a slope of 4mV/K. VPTAT can drive up to a $\pm 200\mu\text{A}$ load and up to 1000pF capacitive load.

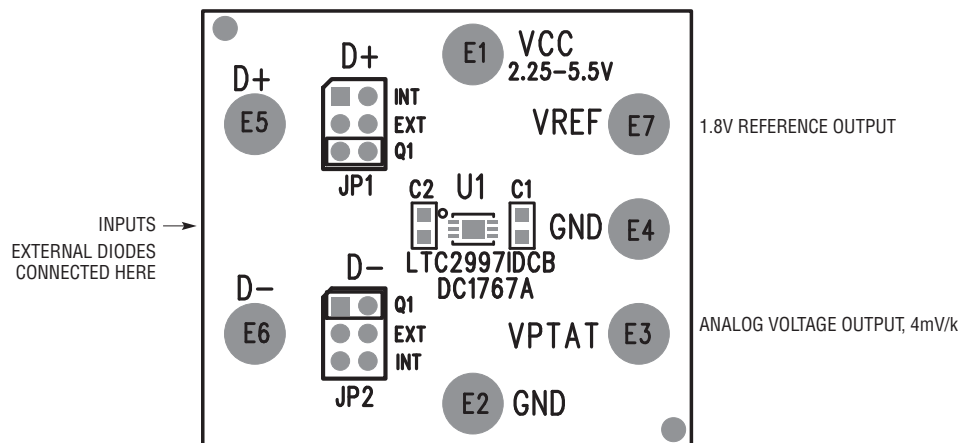


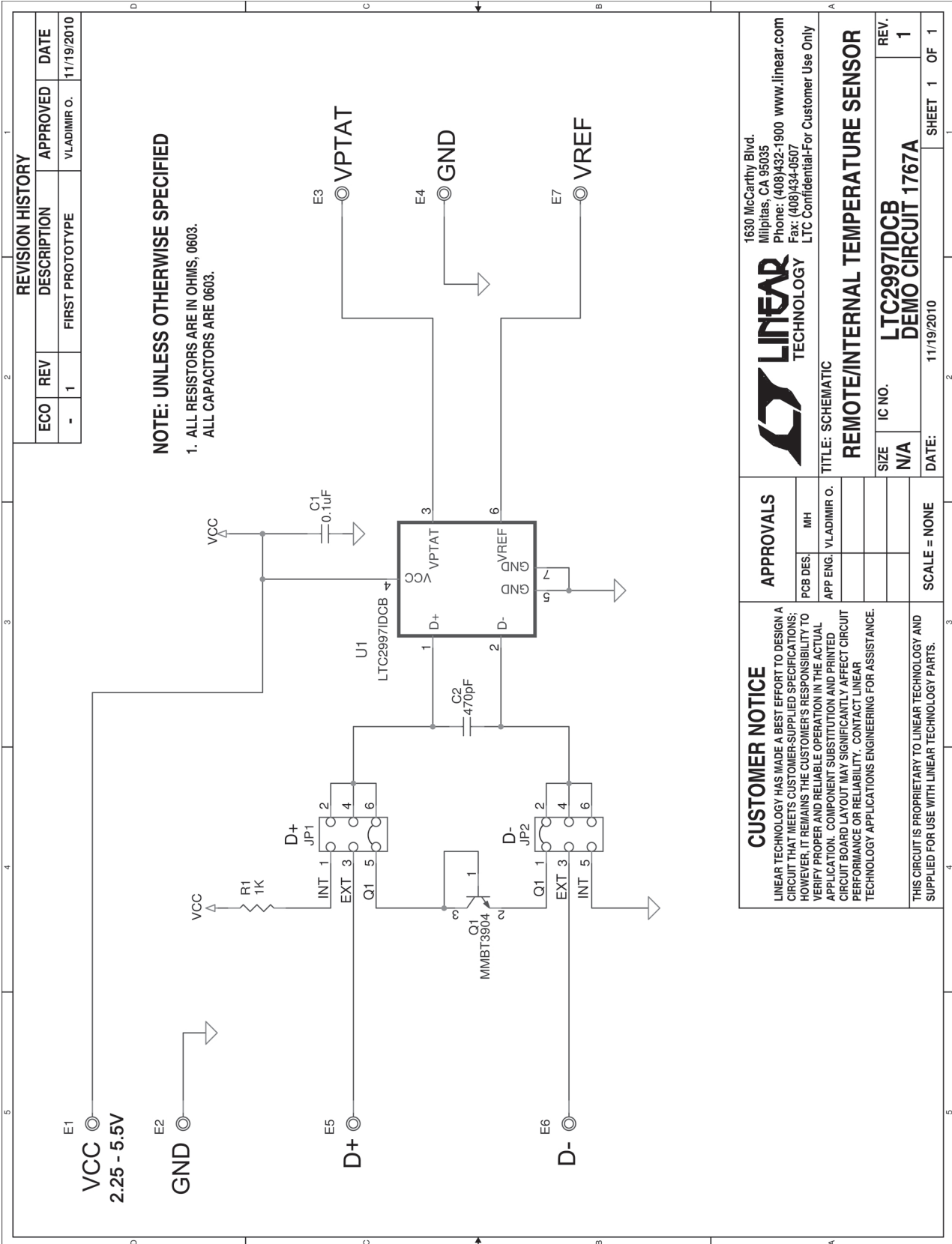
Figure 1. Proper Measurement Equipment Setup

DEMO MANUAL DC1767

PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
1	1	C1	CAP., X7R, 0.1 μ F, 10V 20% 0603	AVX, 0603ZC104MAT
2	1	C2	CAP., X7R, 470pF, 10V 10% 0603	AVX, 0603ZC471KAT2A
3	7	E1, E2, E3, E4, E5, E6, E7	TESTPOINT, TURRET, 0.094, PBF	MILL- MAX, 2501-2-00-80-00-00-07-0
4	2	JP1, JP2	HEADER, 3 PIN 0.079 DUAL ROW	SAMTEC, TMM-103-02-L-D
5	1	Q1	XISTOR MMBT3904 SOT-23	ON SEMI., MMBT3904LT1G
6	1	R1	RES., CHIP, 1k, 1/10W, 5% 0603	YAGEO, RC0603JR-071KL
7	1	U1	IC, LTC2997IDCB	LINEAR TECH., LTC2997IDCB#TRPBF
8	2	XJ1, XJ2	SHUNT, 0.079" CENTER	DEMO CIRCUIT 1767A
9	1		FAB, PRINTED CIRCUIT BD	
10	2		STENCIL (TOP & BOTTOM)	STENCIL DC1767A

SCHEMATIC DIAGRAM



dc1767f

DEMO MANUAL DC1767

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This notice contains important safety information about temperatures and voltages. For further safety concerns, please contact a LTC application engineer.

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