Description

This circuit demonstrates LX1742 performance boosting a 5V output from a 3.6V input source.

Components

Ref	Description	Supplier	Part Number
C1	CAPACITOR, X5R, 47uF, 6.3V	Various	Not specified
C2	CAPACITOR, X5R, 47uF, 6.3V	Various	Not specified
C3	CAPACITOR, COG, 1000pF, 0402, 50V	Various	Not specified
CR1	RECTIFIER, SCHOTTKY, 1A, 40V	**MICROSEMI**	UPS5819
L1	INDUCTOR, 47µH, 760mA, SMT	MURATA	LQH66SN470M03
R1	RESISTOR, 10K, 1/16W, 0603	Various	Not specified
R2	RESISTOR, 10K, 1/16W, 0603	Various	Not specified
R3	RESISTOR, 226K, 1/16W, 0603	Various	Not specified
R4	RESISTOR, 72K, 1/16W, 0603	Various	Not specified
U1	IC, BOOST CONTROLLER	**MICROSEMI**	LX1742

Schematic

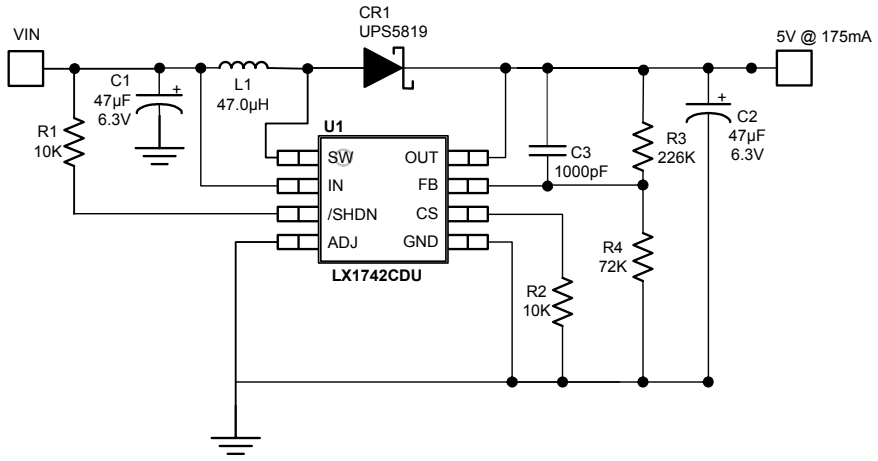

Figure 1 – LX1742 5V Application Schematic

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CHARACTERISTIC CURVES

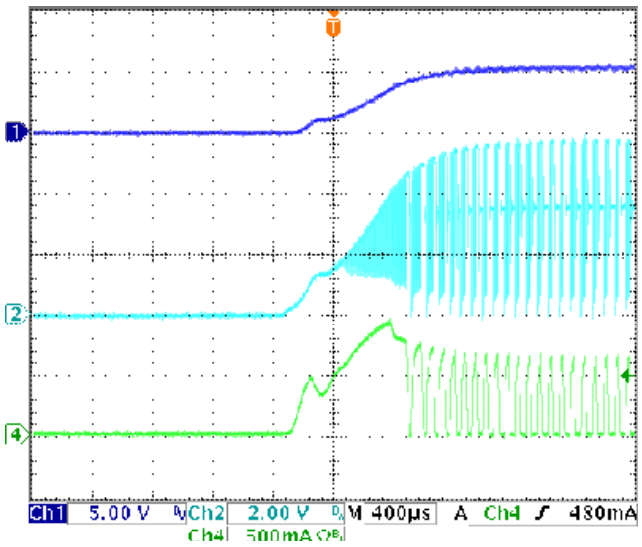

Figure 2 – Start-Up Waveforms

(Configuration: V_{IN} = 3.6V, V_{OUT} = 5VV, I_{OUT} = 100mA)

Channel 1: V_{OUT} (AC coupled; 200mV/div)

Channel 2: Switch voltage (DC coupled; 2V/div)

Channel 4: L1 Inductor Current (500mA/div.)

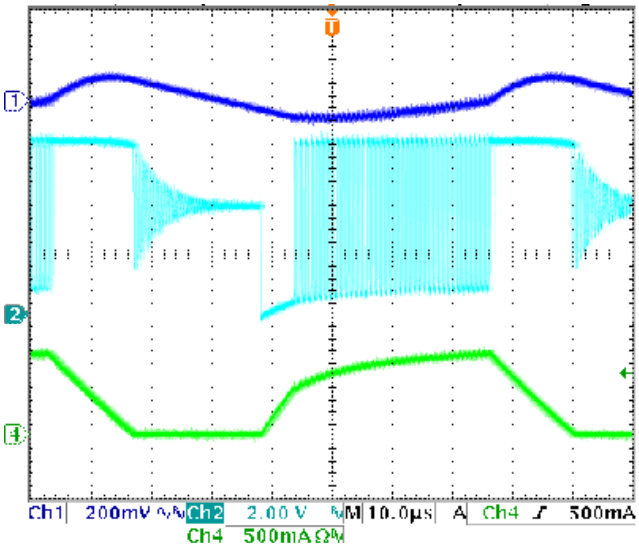

Figure 3 – Switching Waveforms

(Configuration: V_{IN} = 3.6V, V_{OUT} = 5VV, I_{OUT} = 150mA)

Channel 1: V_{OUT} (AC coupled; 200mV/div)

Channel 2: Switch voltage (DC coupled; 2V/div)

Channel 4: L1 Inductor Current (500mA/div.)

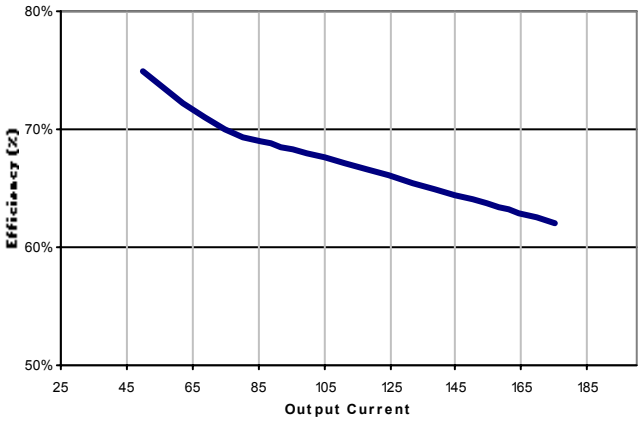

Figure 4 – Efficiency vs. Output Current

(V_{IN} = 3.6 volts)

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