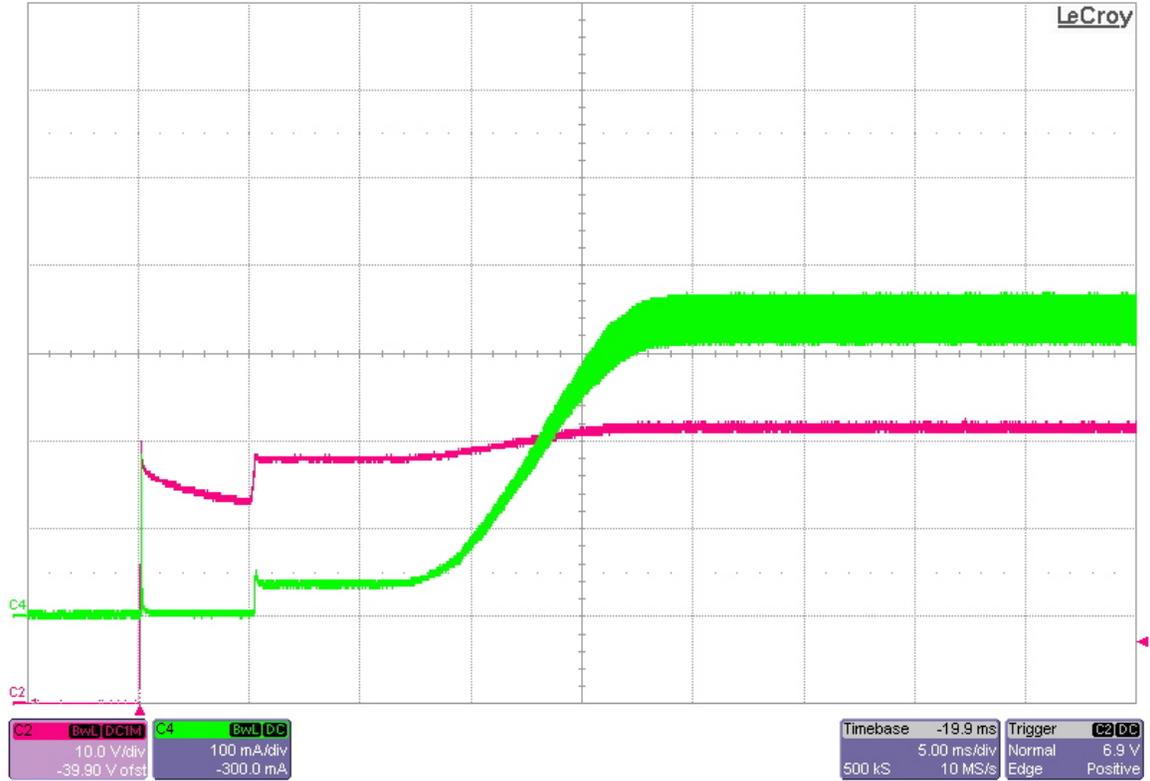


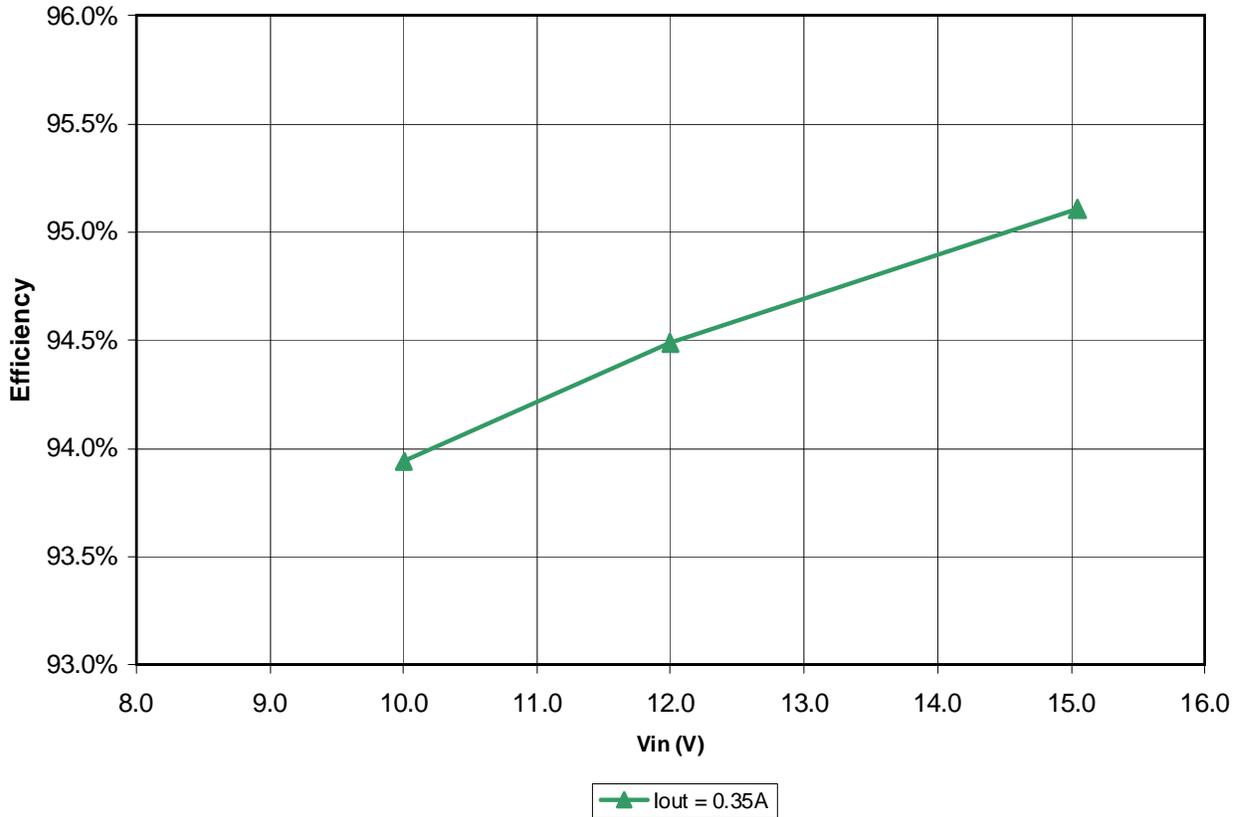
1 Startup

The photo below shows the LED current and converter output voltage startup waveforms after the application of 15Vdc in. The output current is set to 0.35A. (10V/DIV, 100mA/DIV, 5mS/DIV)



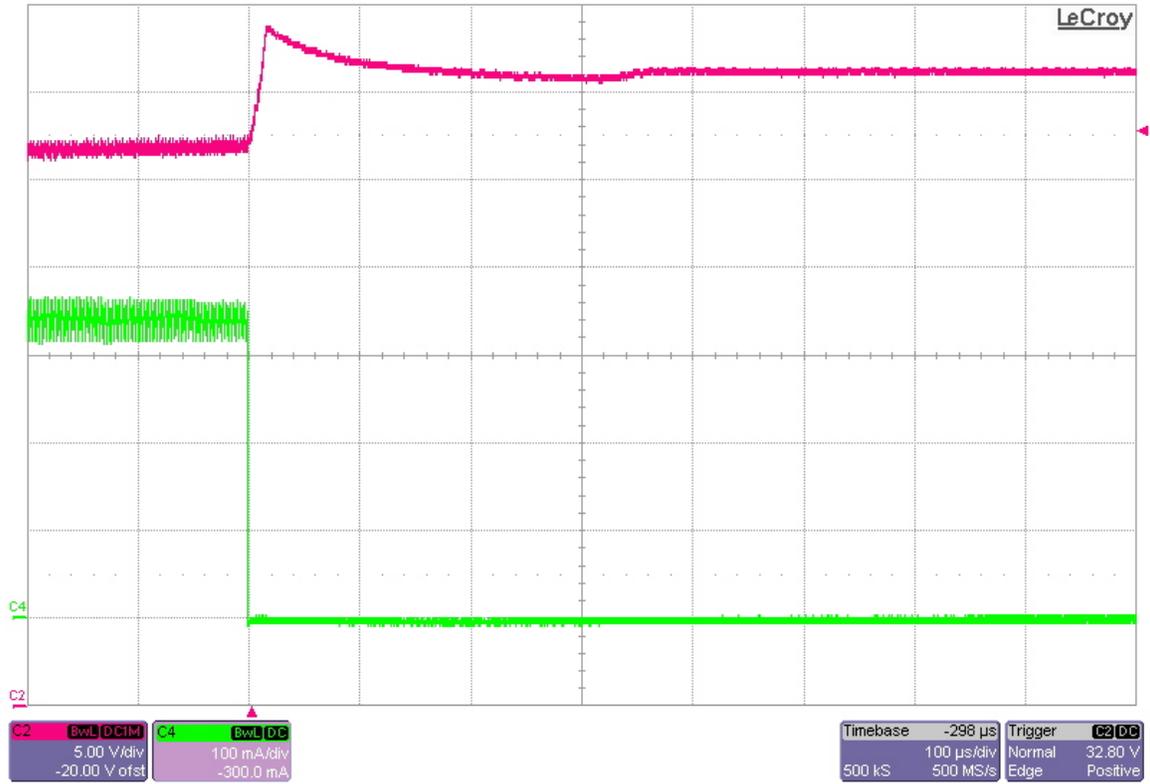
2 Efficiency

The boost converter efficiency is shown in the figure below. $I_{out} = 0.35A$



3 Open LED Test

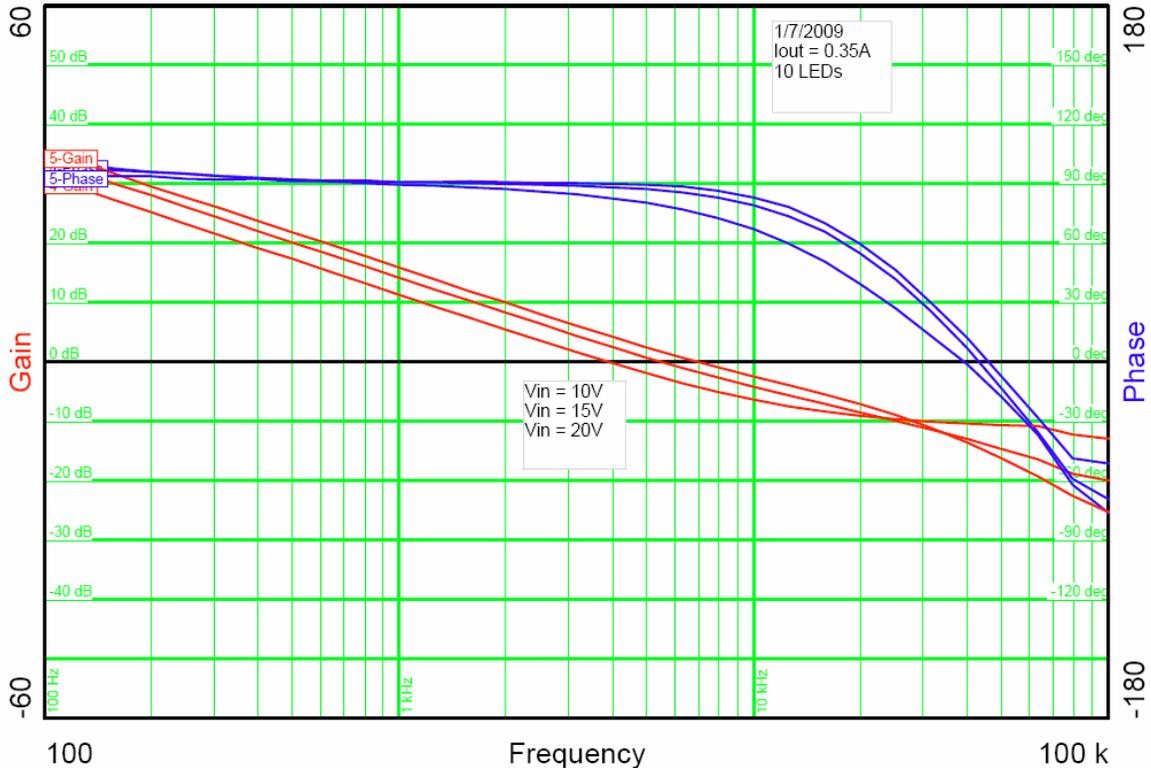
The converter output voltage and LED current after the removal of the LED is shown in the figure below. The image was taken with the output regulated to 0.35A and once the LED is removed, uses a 36V zener diode and a 49.9 ohms resistor to regulate the current to 5mA. The input voltage set to 15Vdc. (5V/DIV, 100mA/DIV, 100uS/DIV)



4 Control Loop Gain / Stability

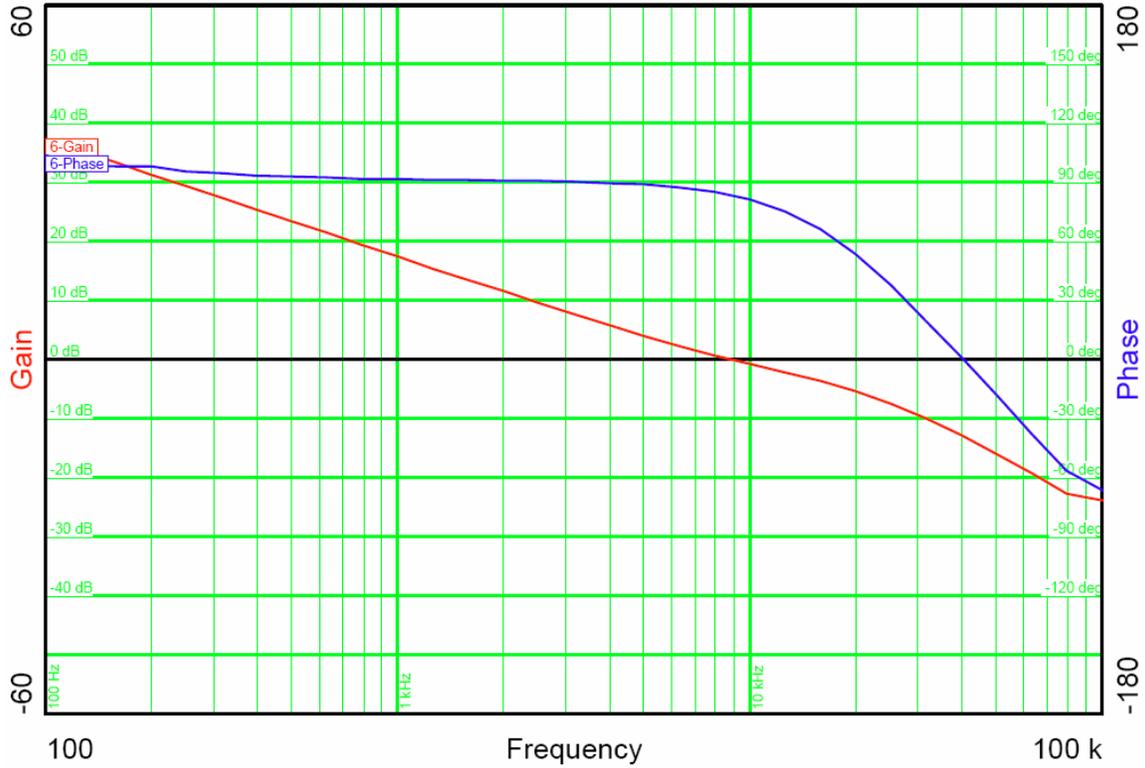
The plot below shows the loop gain and phase margin with output loaded to 0.35A (Constant current load).
Vout = ~30V (10 LEDs)

Bandwidth = 3.9KHz	Phase Margin = 89 degrees	Vin = 10V
Bandwidth = 5.3KHz	Phase Margin = 87 degrees	Vin = 12V
Bandwidth = 7.0KHz	Phase Margin = 80 degrees	Vin = 15V



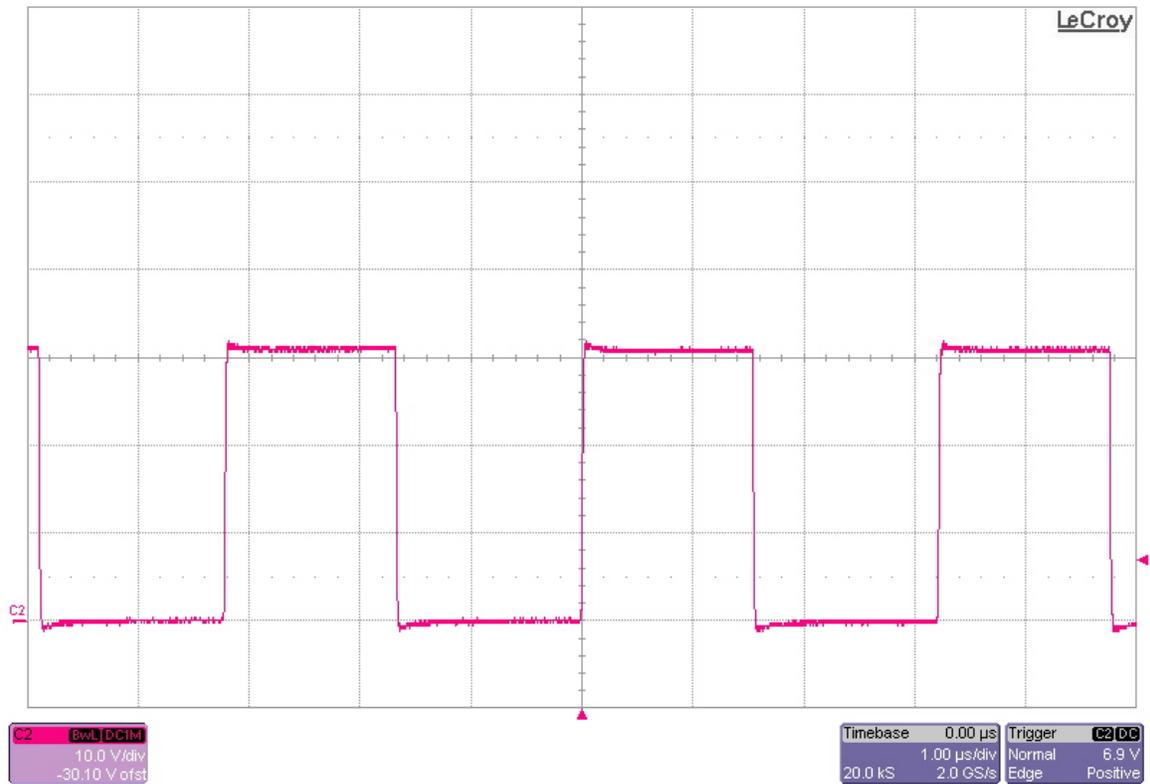
The plot below shows the loop gain and phase margin with output loaded to 0.35A (Constant current load).
Vout = ~18V (6 LEDs)

Bandwidth = 9.0KHz Phase Margin = 83 degrees Vin = 15V



5 Switching Waveforms

The FET switching voltage (TP7) is shown in the figure below. The image was taken with the output loaded to 0.35A and the input voltage set to 15Vdc. (10V/DIV, 1uS/DIV)



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