12/30/14

TIDA-00390 Test Report

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1) Block Diagram

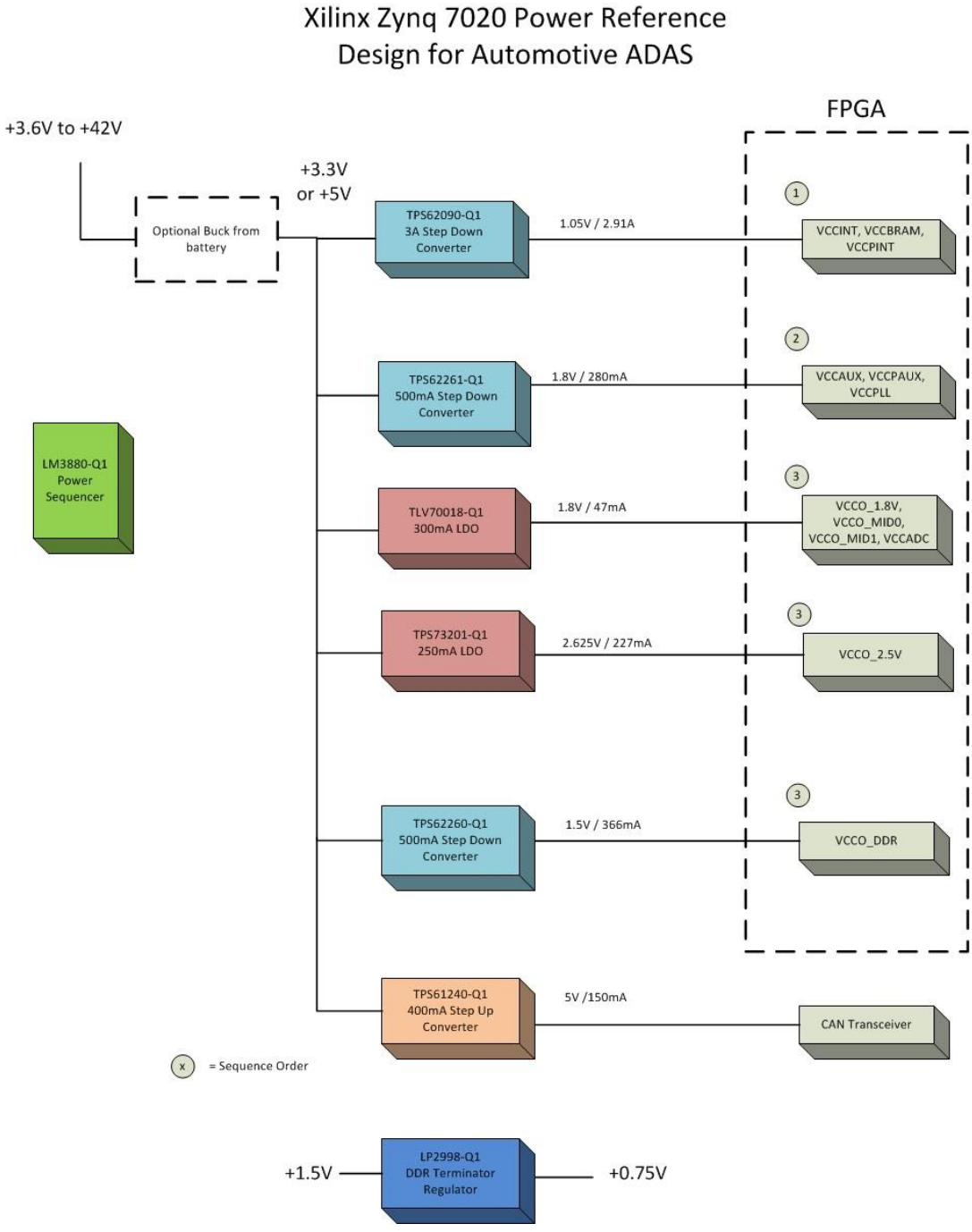


Figure 1. Block Diagram

2) Board Photos

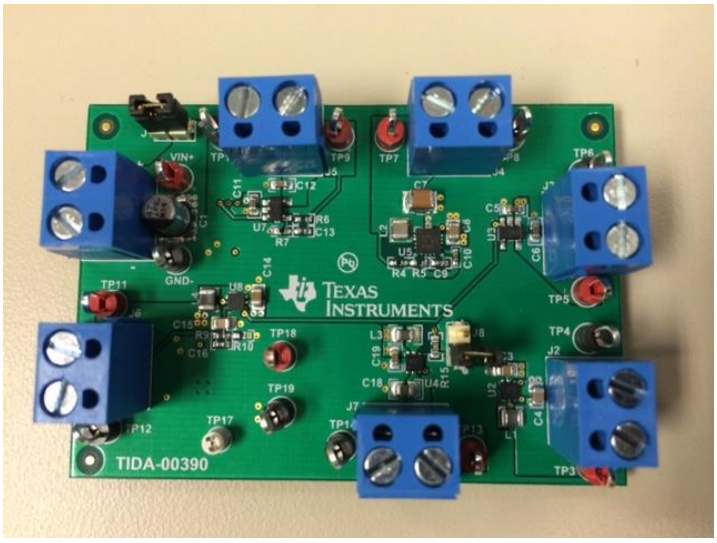


Figure 2. Board Photo Top

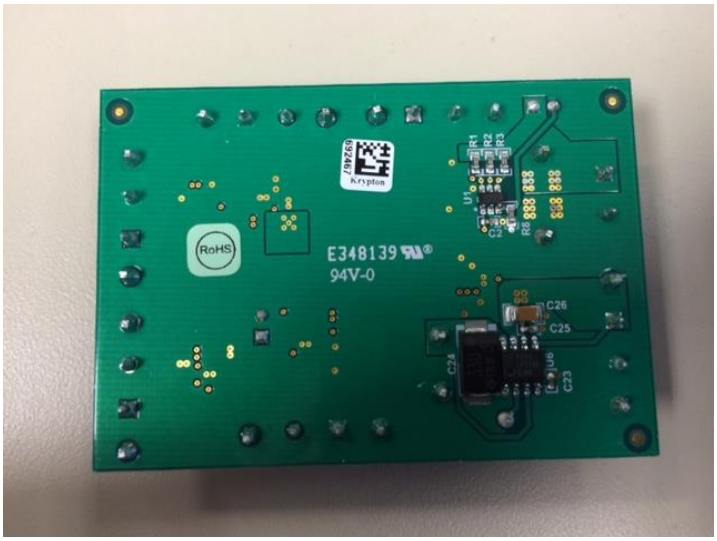


Figure 3. Board Photo Bottom

3) Efficiency

The efficiency of the converters is shown in the figures below.

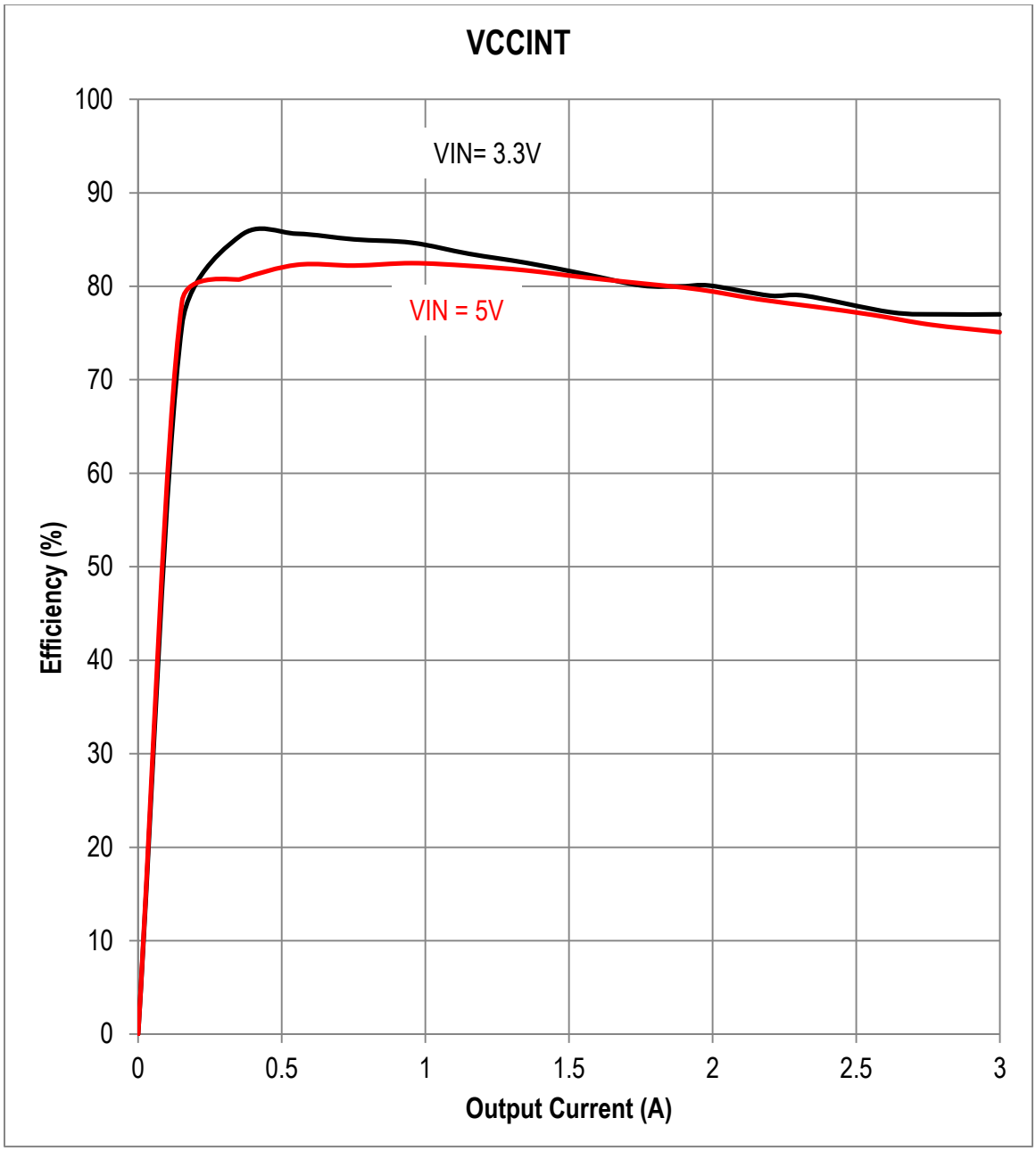


Figure 4. VCCINT Efficiency

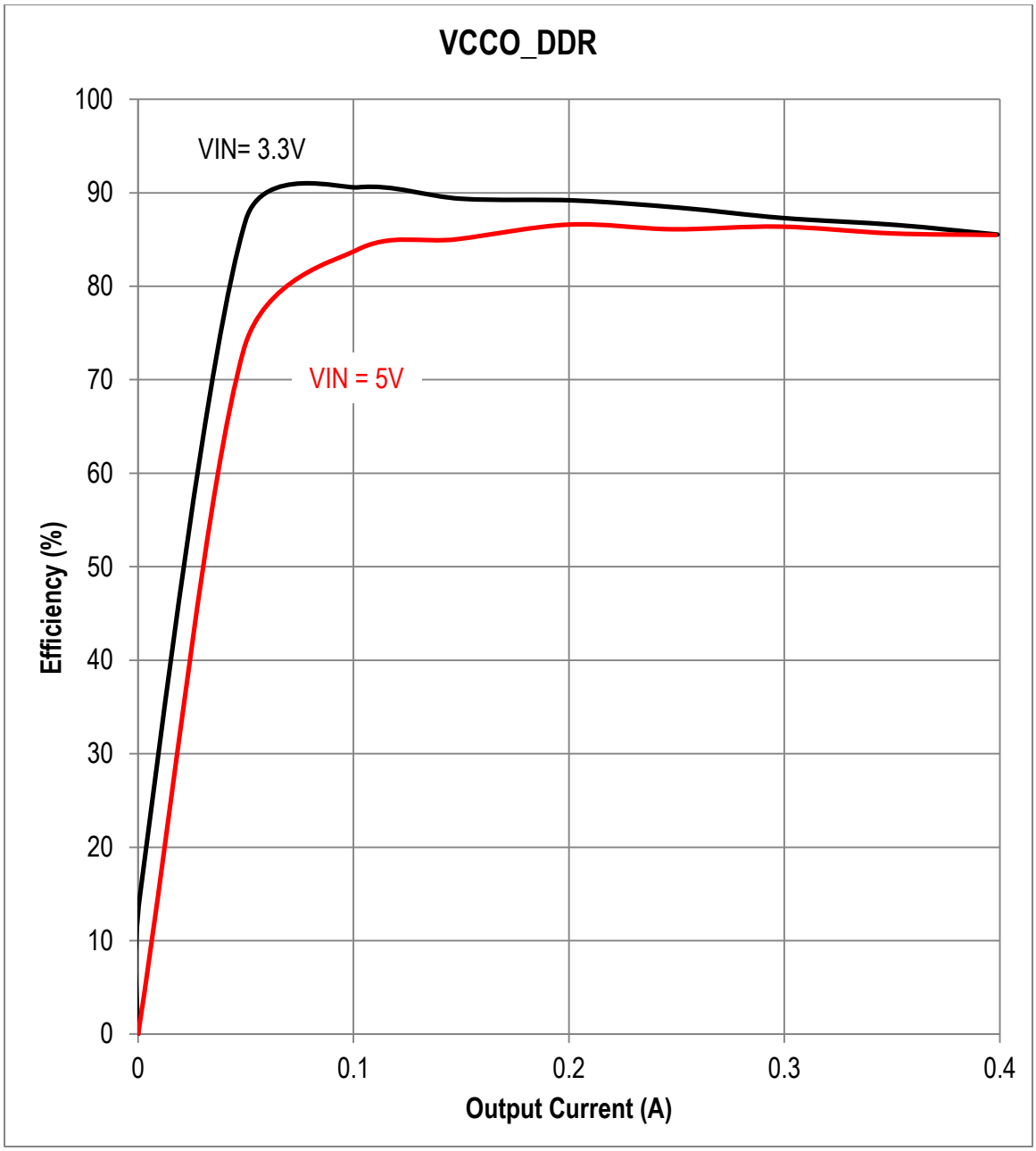


Figure 5. VCCO_DDR Efficiency

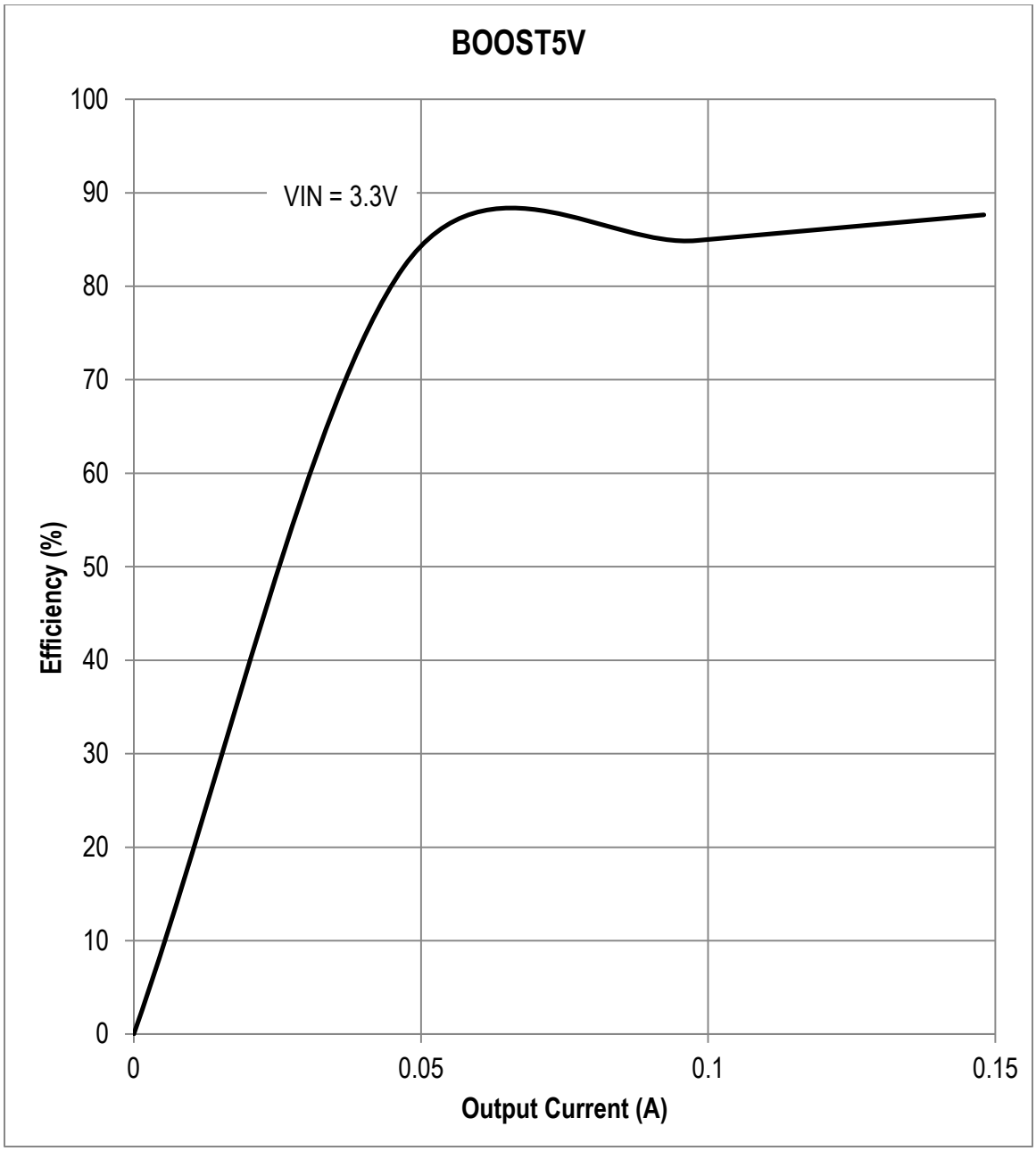


Figure 6. BOOST_5V Efficiency

4) Load Regulation

The images below show the output load regulation.

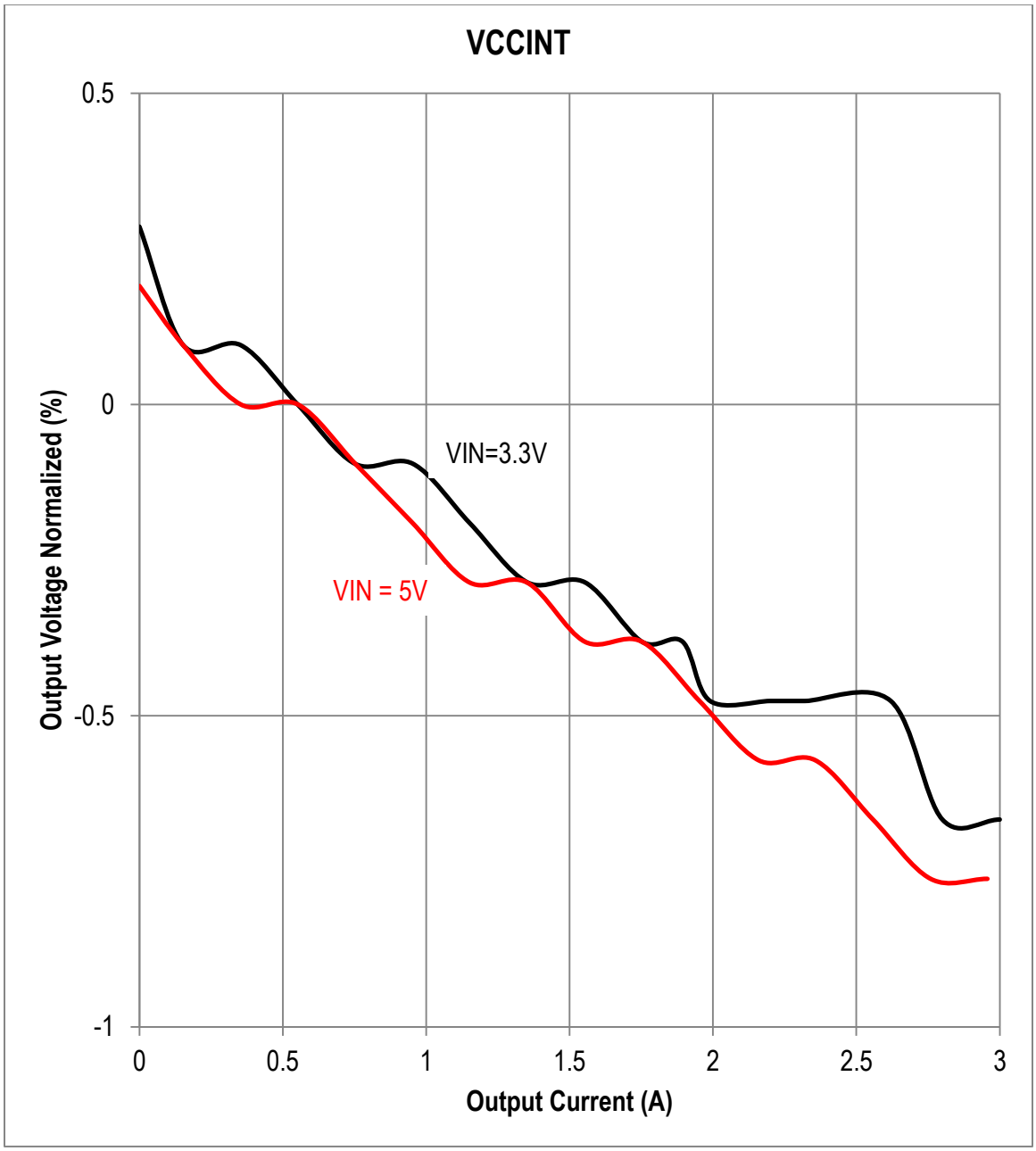


Figure 7. VCCINT Load Regulation

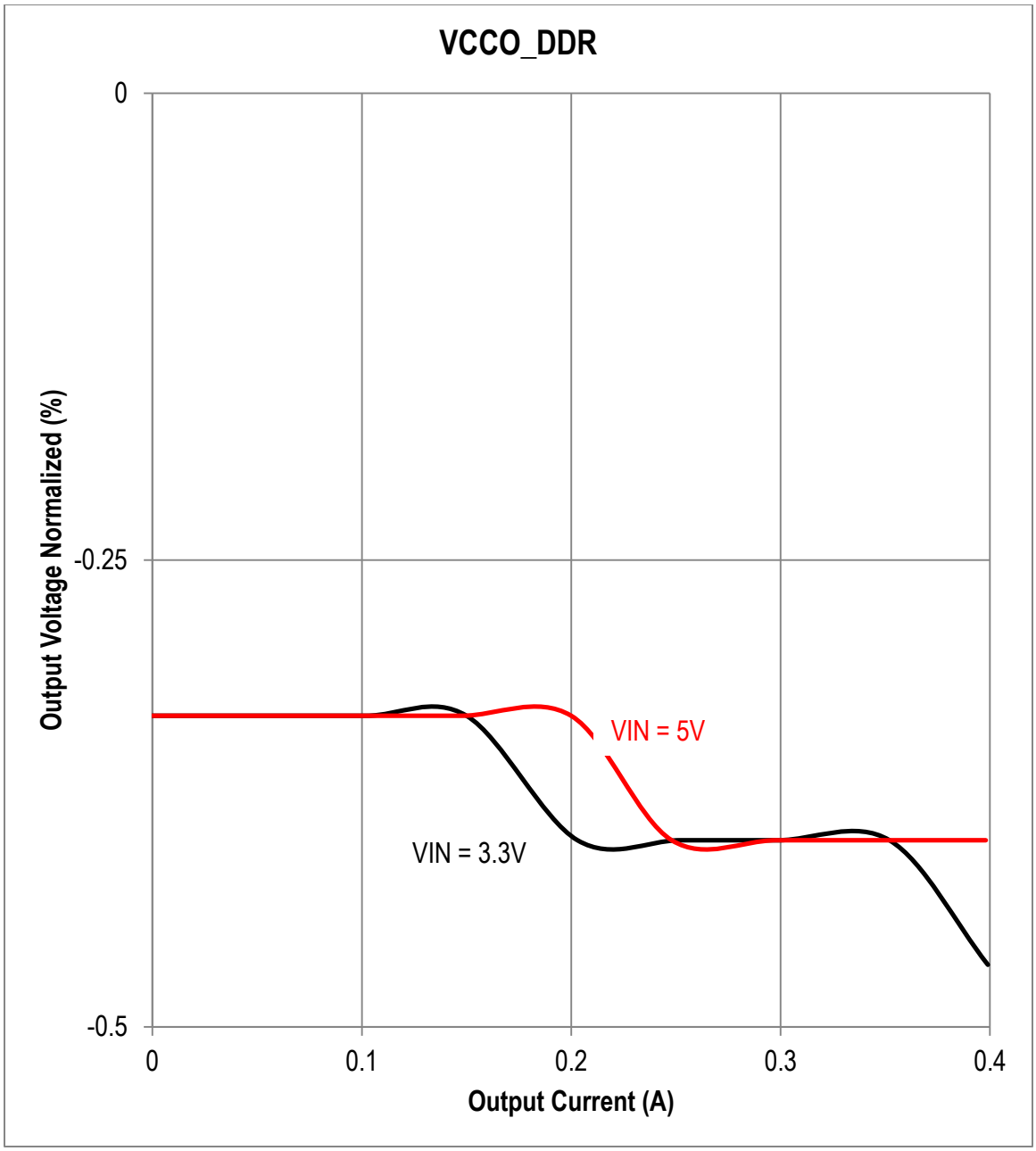


Figure 8. VCCO_DDR Load Regulation

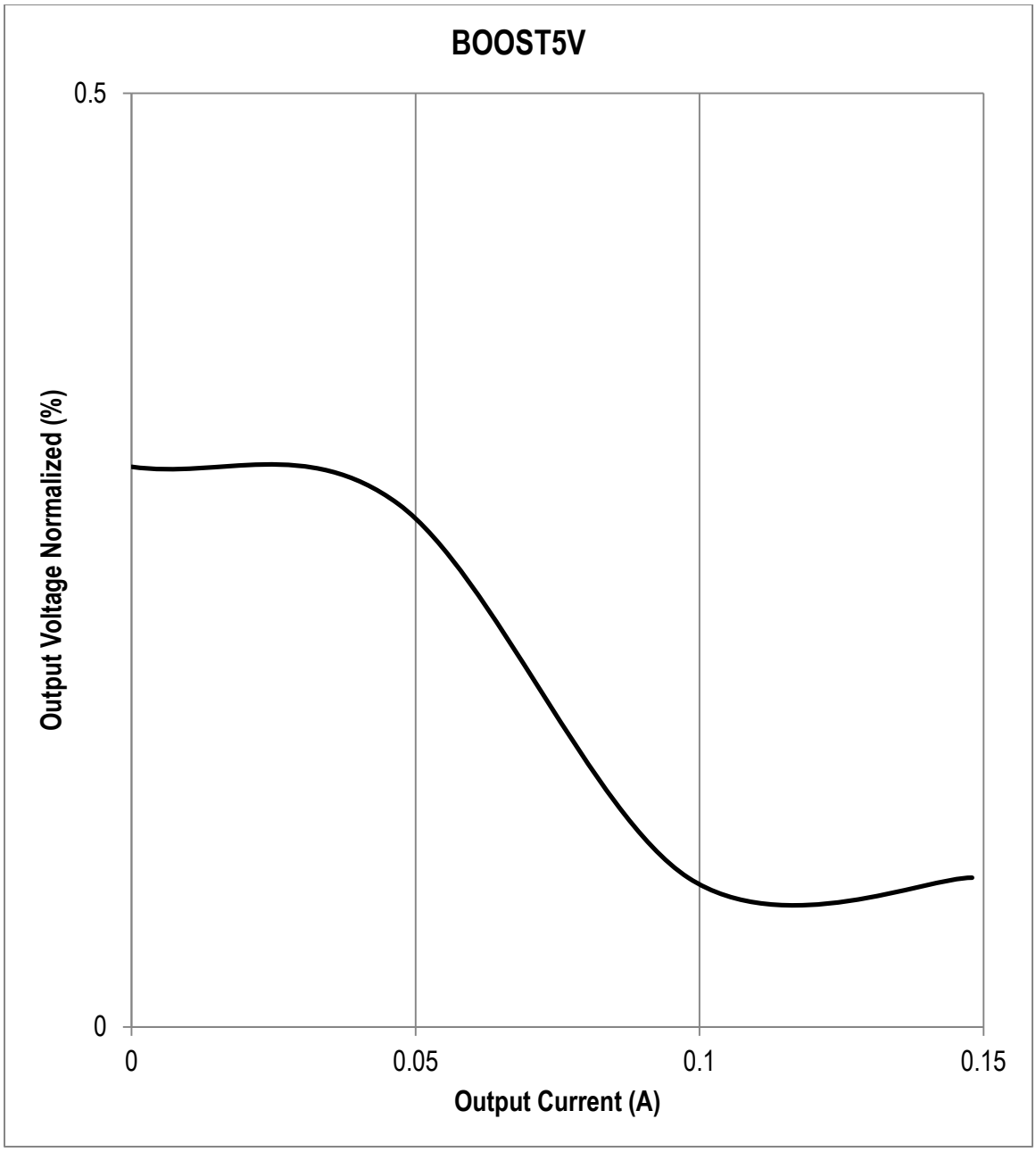
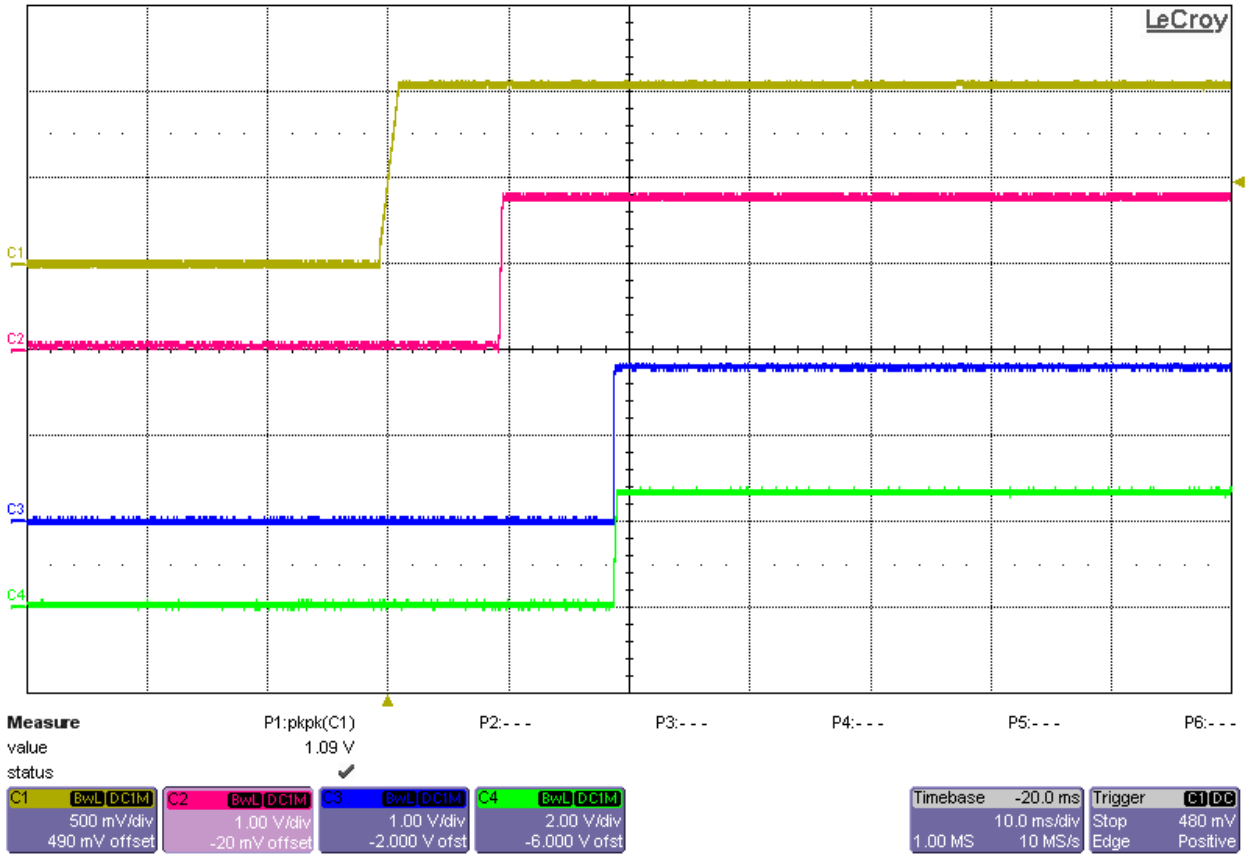


Figure 9. BOOST_5V Load Regulation

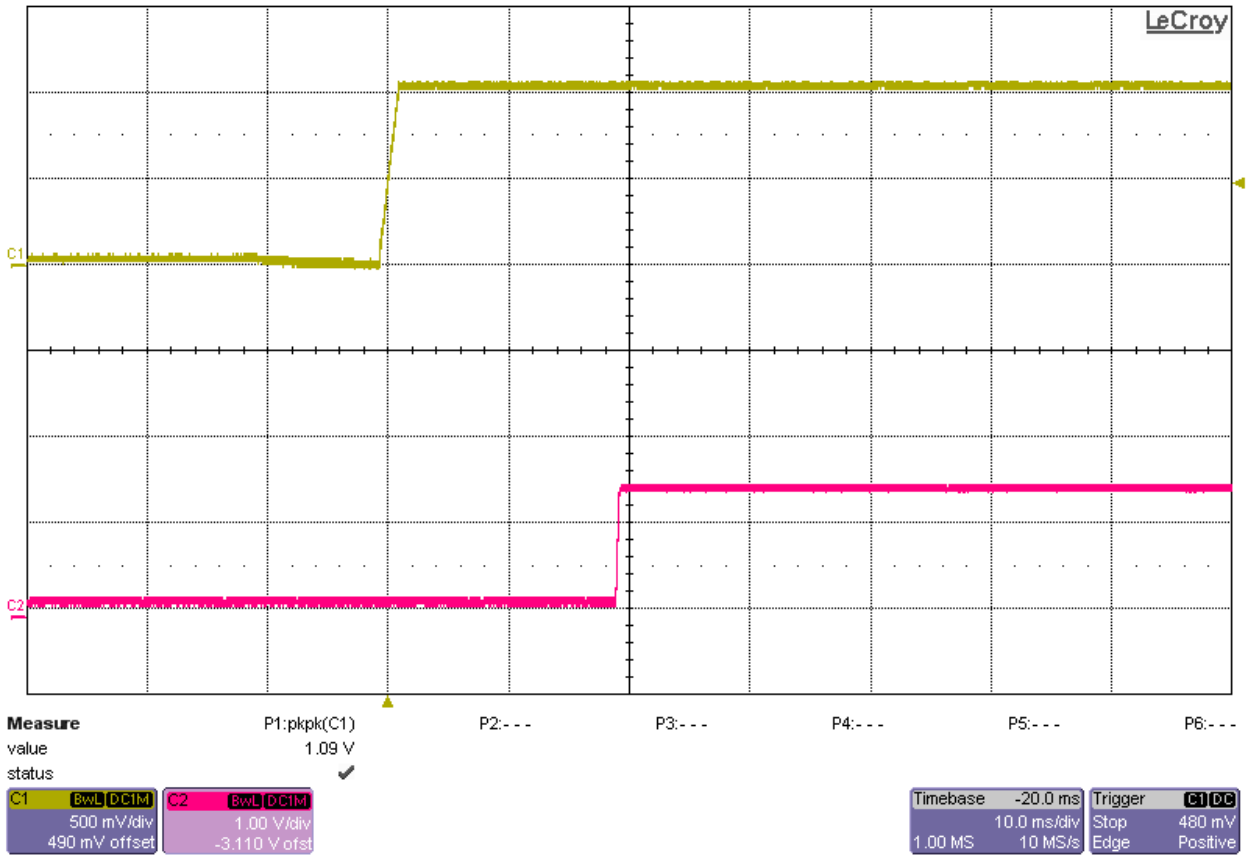
5) Startup No Load

The images below shows the startup waveforms. The output is not loaded. The input voltage is set to 5V.



Ch.1: VCCINT = 1.05V
Ch.2: VCCAUX = 1.8V
Ch.3: VCCO_1.8V = 1.8V
Ch.4: VCCO_2.5V = 2.5V

Figure 10. VIN = 5V Startup with No Load



Ch.1: VCCINT = 1.05V
Ch.2: VCCO_DDR = 1.5V
Figure 11. VIN = 5V Startup with No Load

6) Output Voltage Ripple

The images below shows the output voltage ripple when load is fully applied. The input voltage is 5V unless otherwise noted.

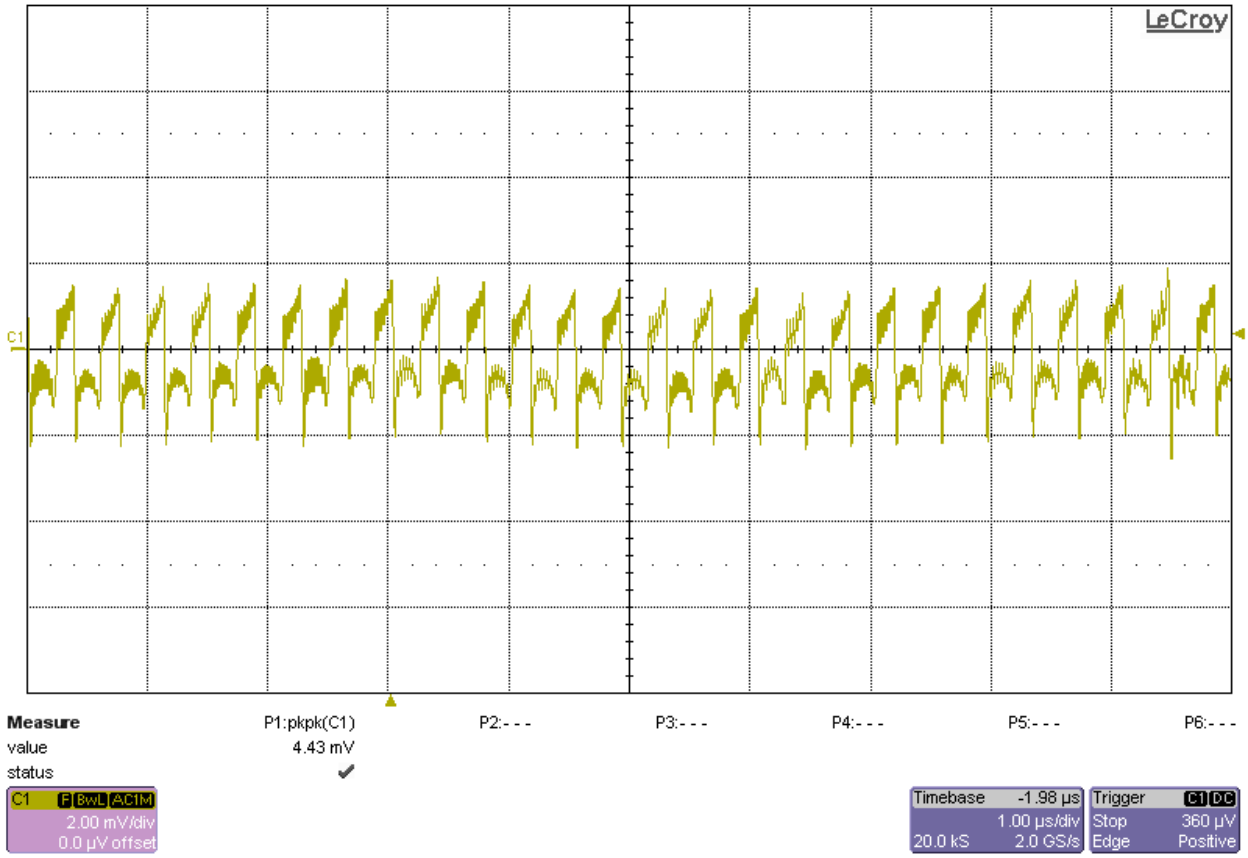


Figure 12. VIN = 5V, VOUT = 1.05V, IOUT = 3A Output Ripple Voltage

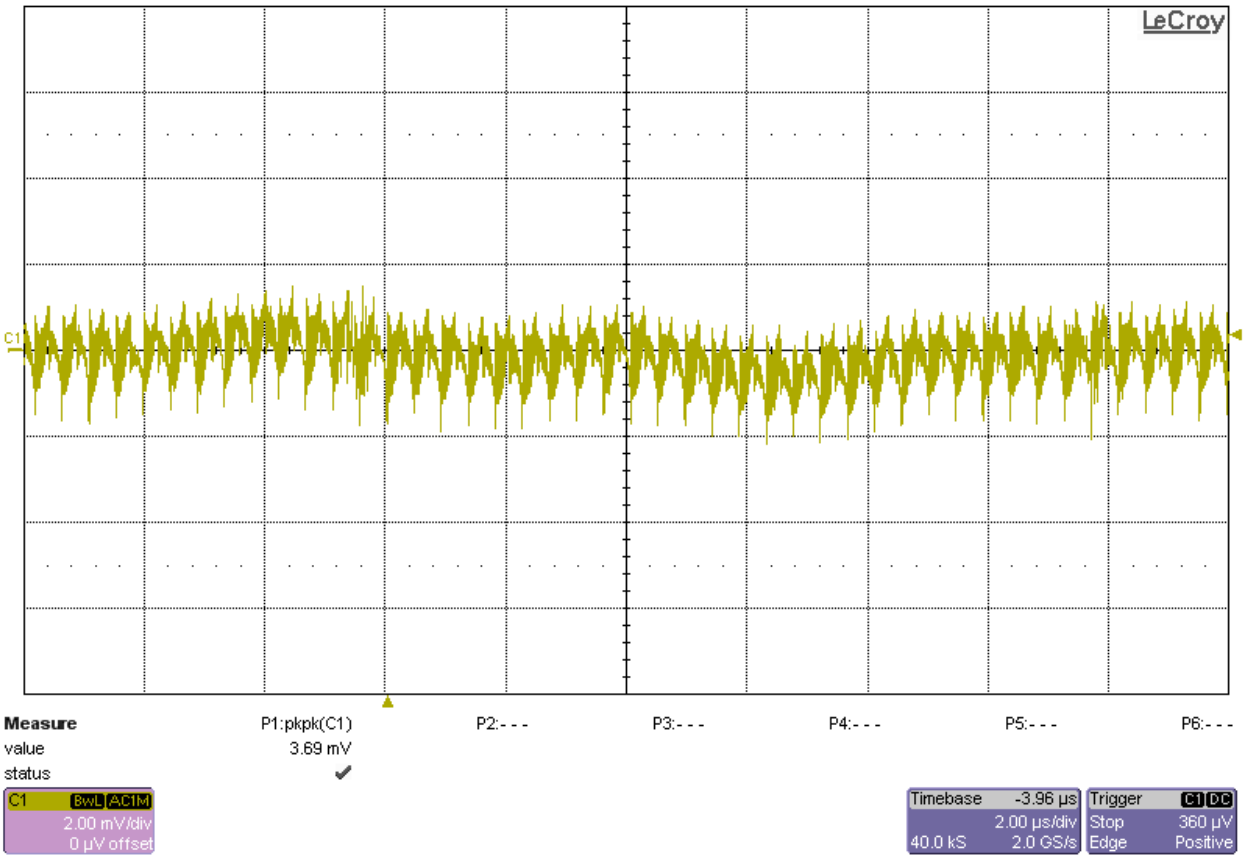


Figure 13. VIN = 5V, VOUT = 1.5V, IOUT = 400mA Output Ripple Voltage

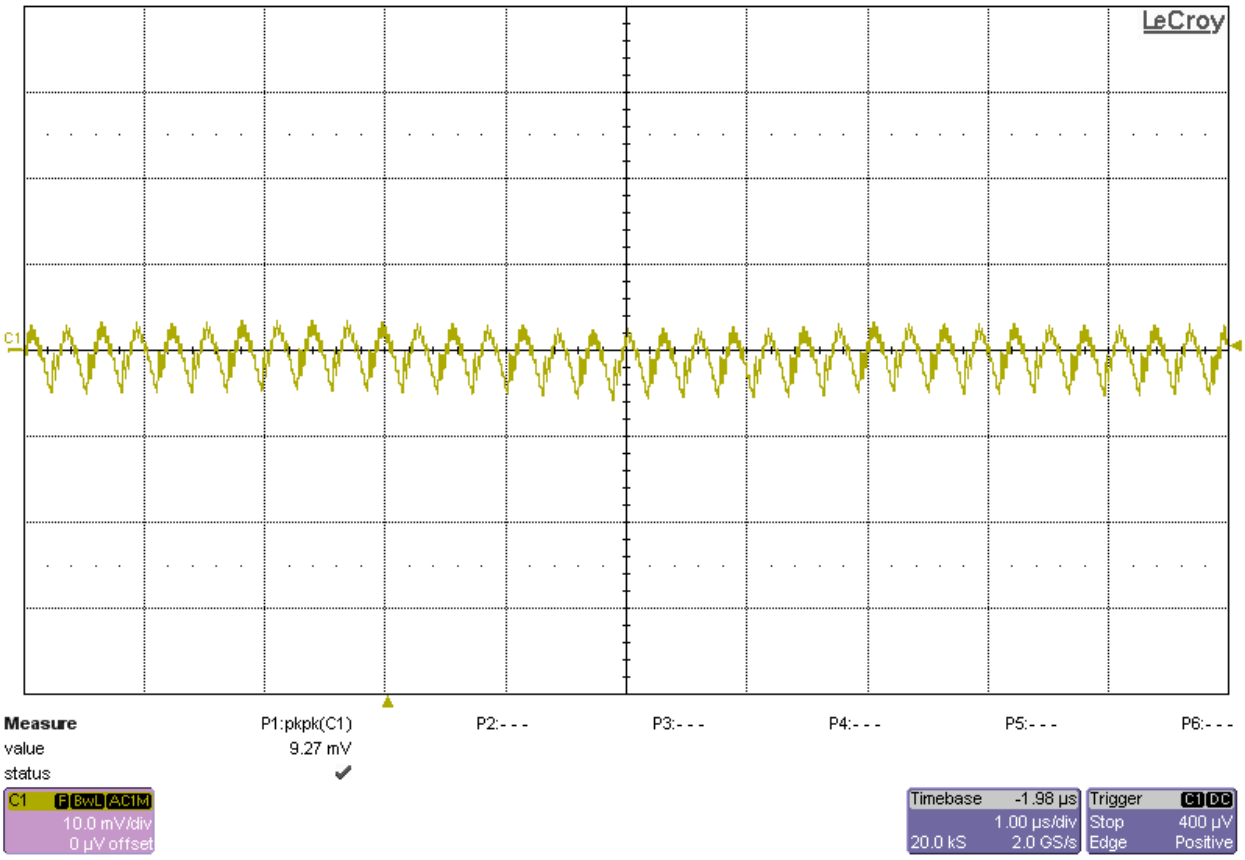


Figure 14. VIN = 3.3V, VOUT = 5V, IOUT = 150mA Output Ripple Voltage

7) Load Transients

The transient response of the converters is shown below. The input voltage is 5V. The output current is pulsed from 0 to 50% load unless otherwise noted.

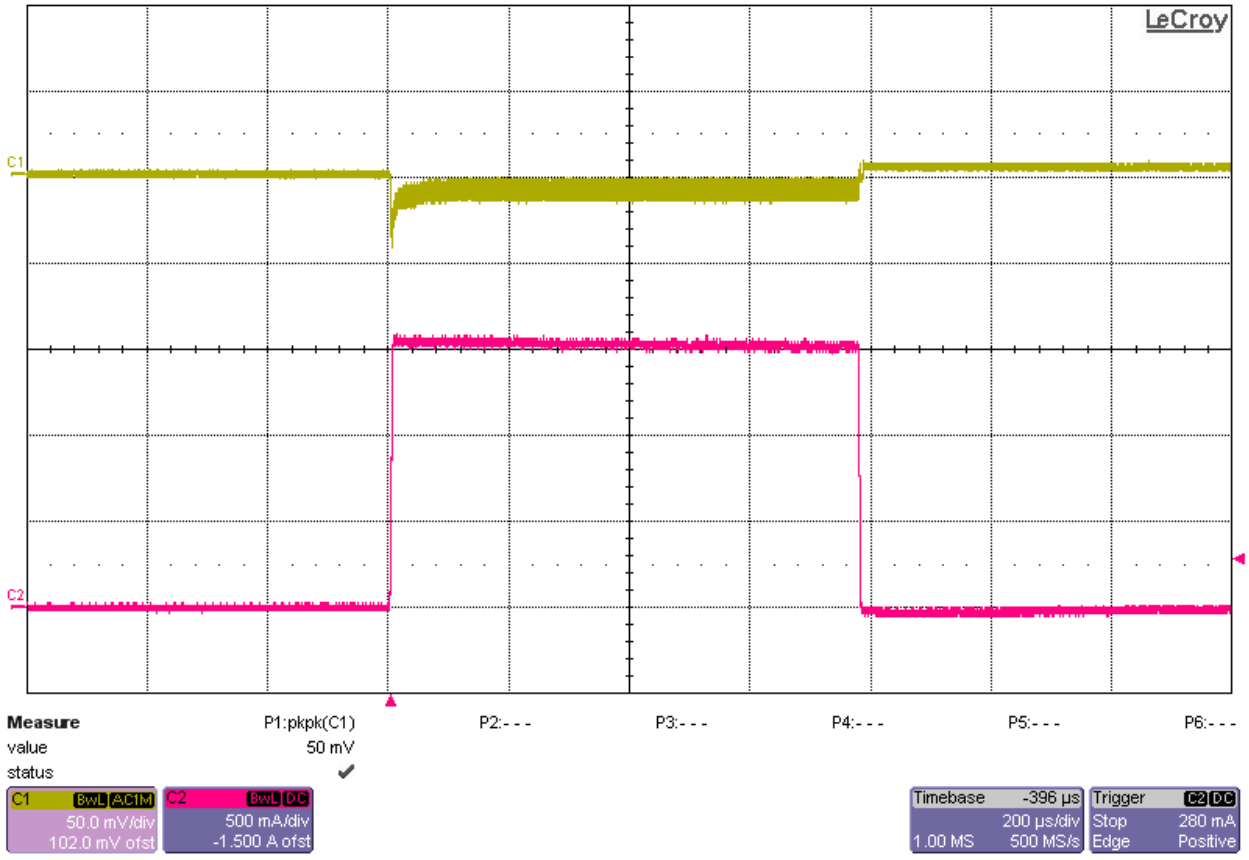


Figure 15. VIN = 5V, VCCINT Load Transient

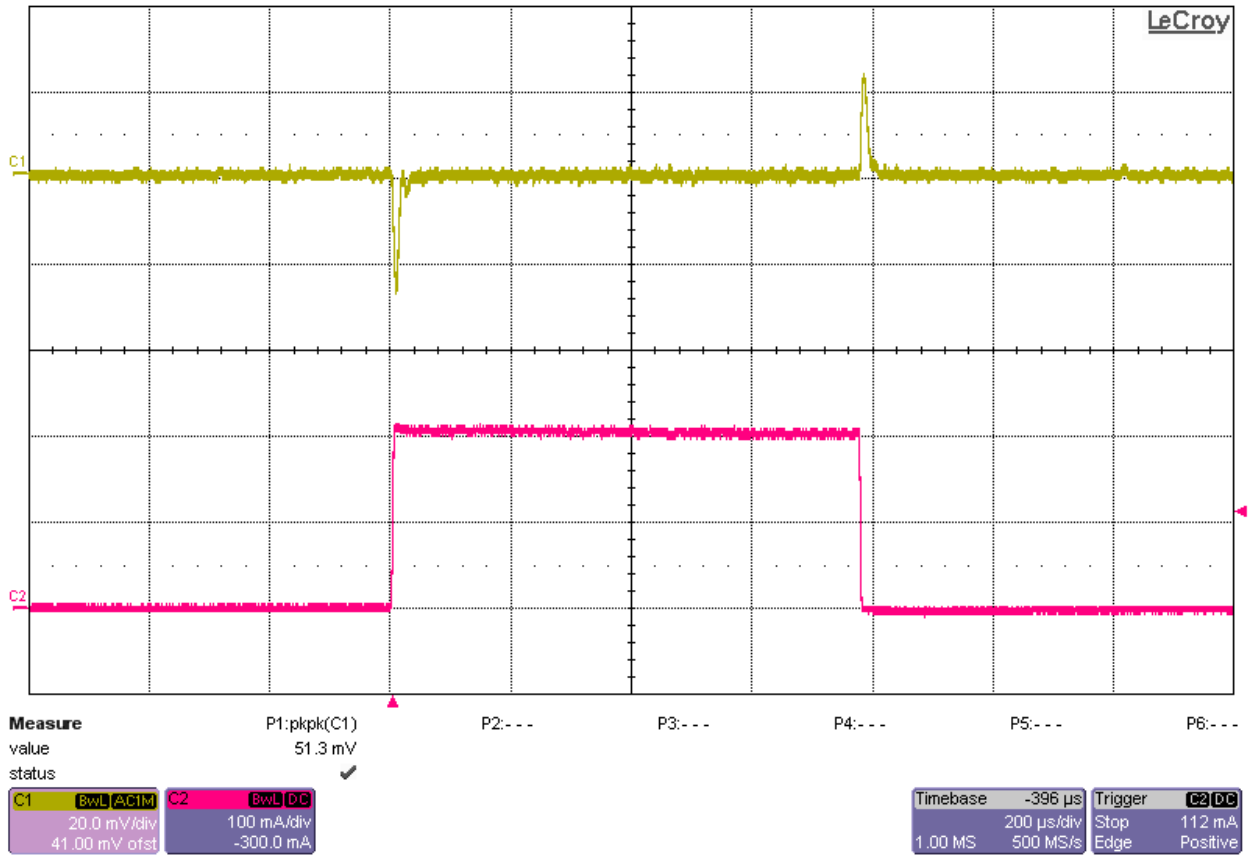


Figure 16. VIN = 5V, VCCO_DDR Load Transient

8) Thermal Images

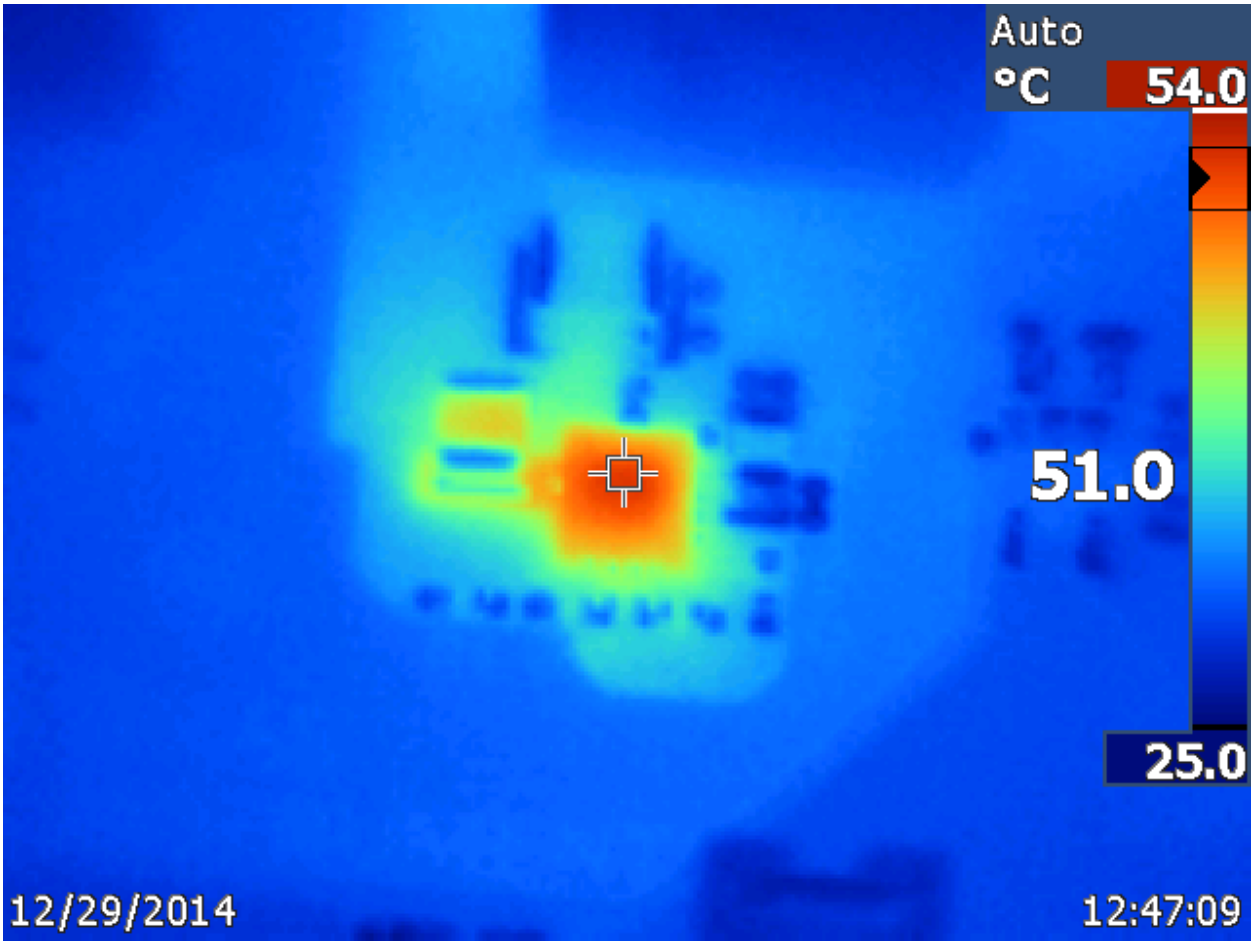


Figure 17. VIN = 3.3V, VCCINT = 1.05V, IOUT = 3A Thermal Image

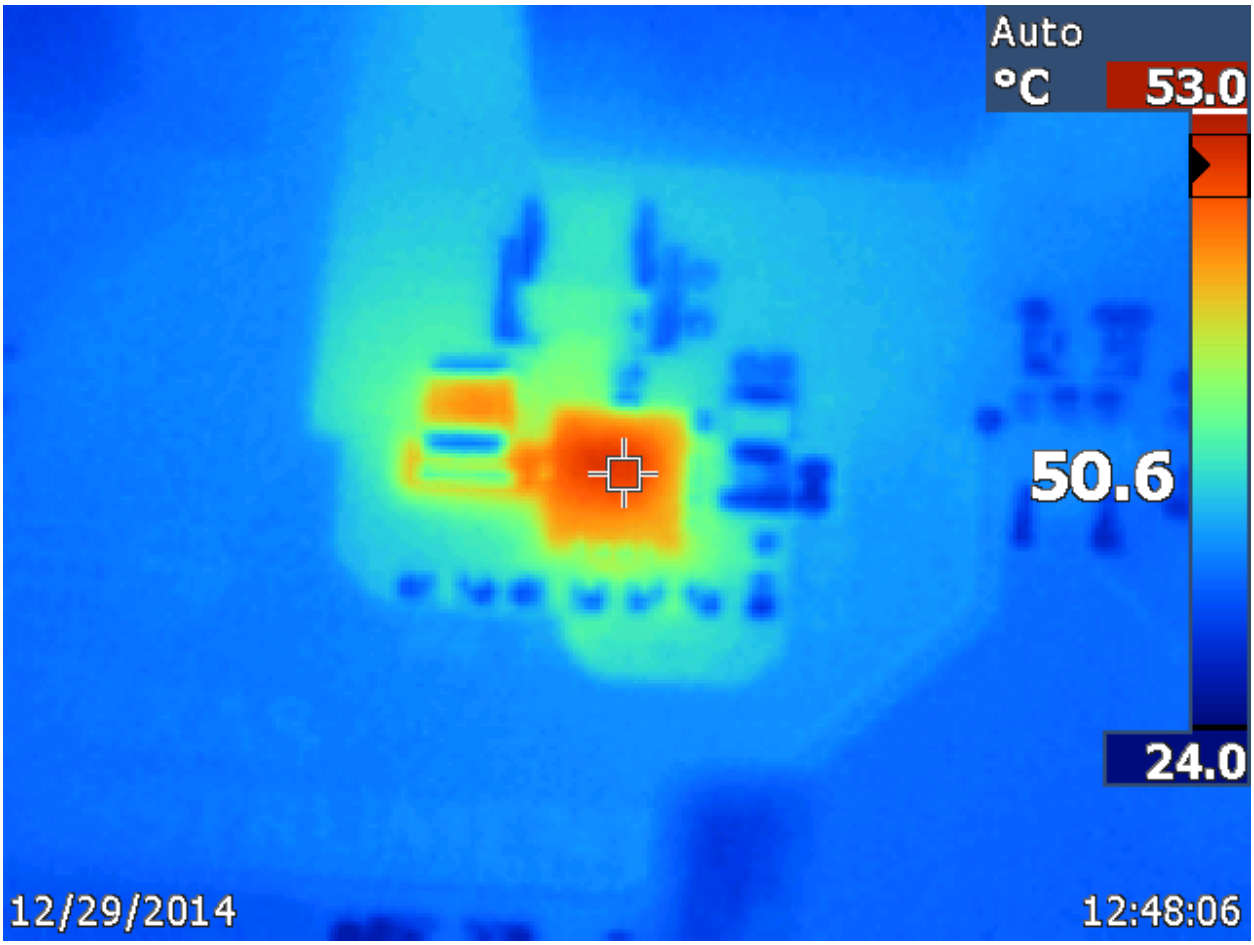


Figure 18. VIN = 5V, VCCINT = 1.05V, IOUT = 3A Thermal Image

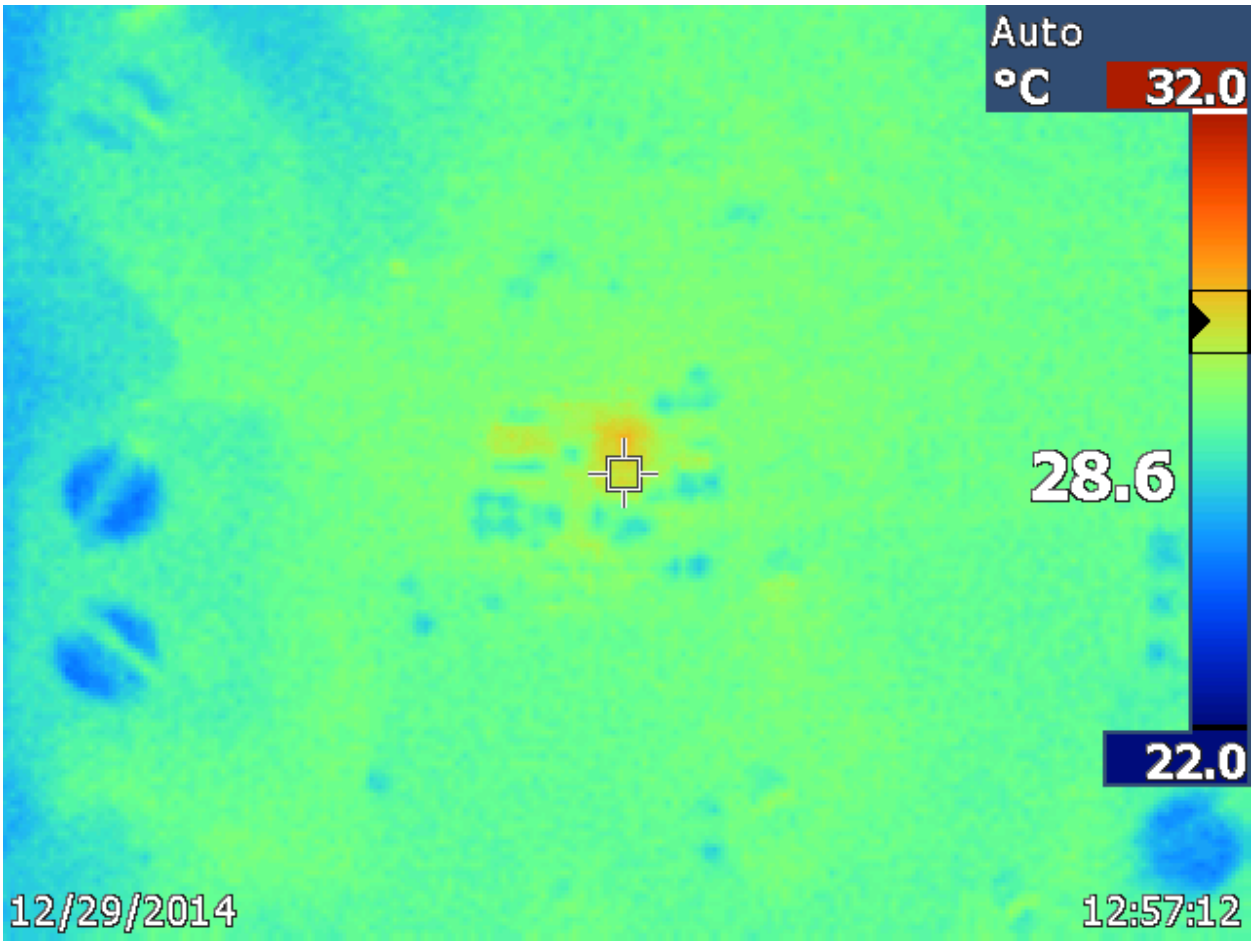


Figure 19. VIN = 3.3V, VCCO_DDR = 1.5V, IOUT = 400mA Thermal Image

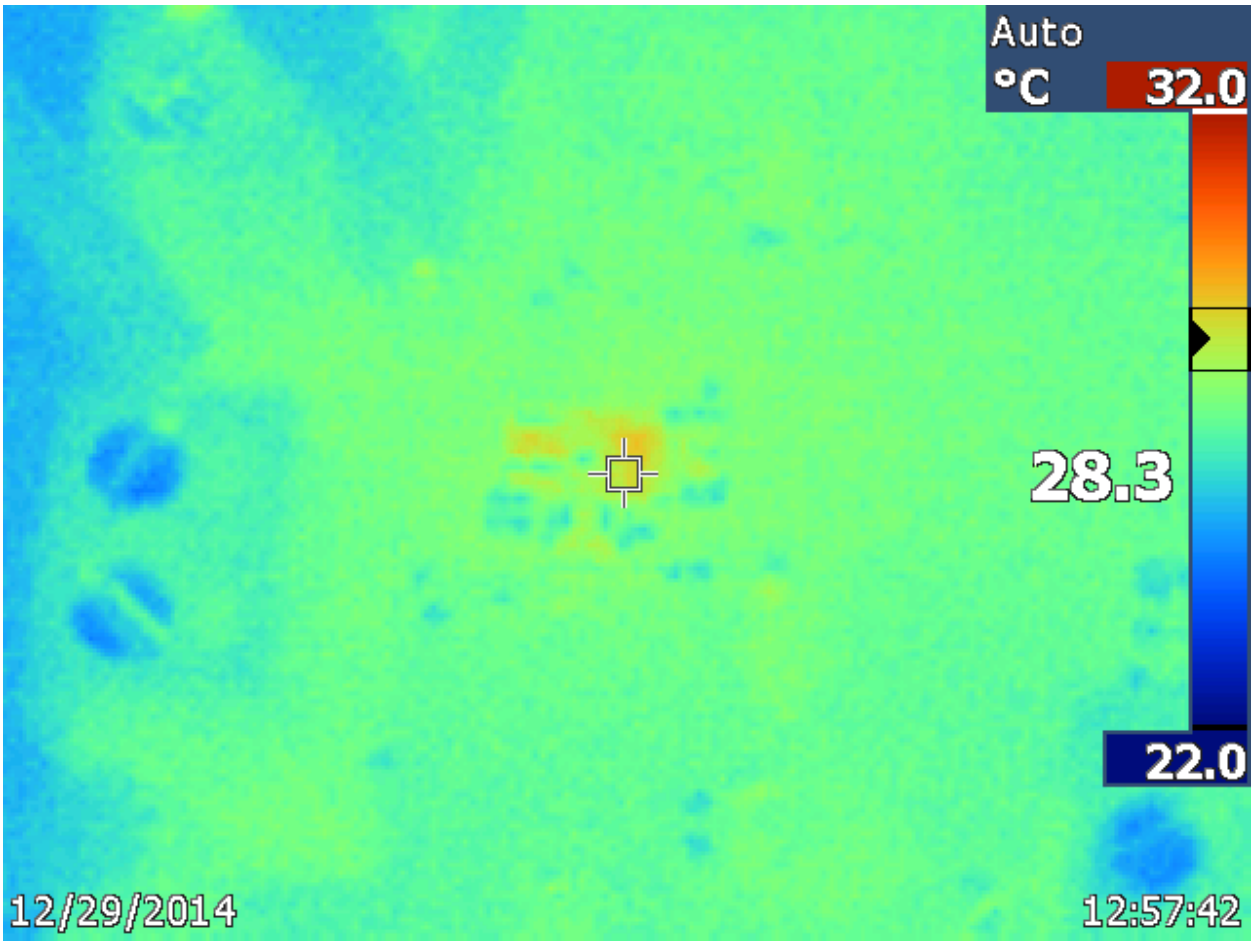


Figure 20. VIN = 5V, VCCO_DDR = 1.05V, IOUT = 400mA Thermal Image

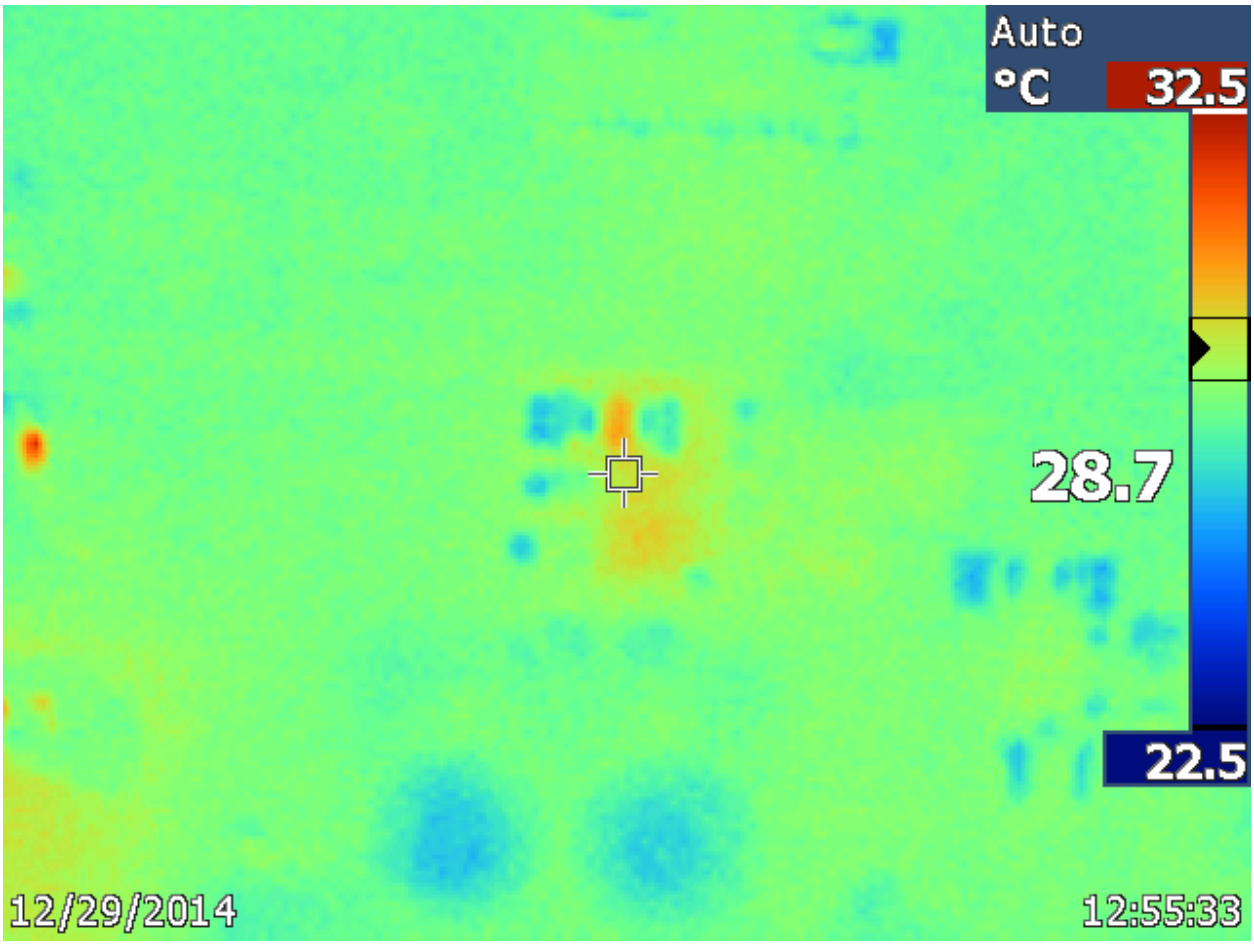


Figure 21. VIN = 3.3V, BOOST_5V= 5V, IOUT = 150mA Thermal Image

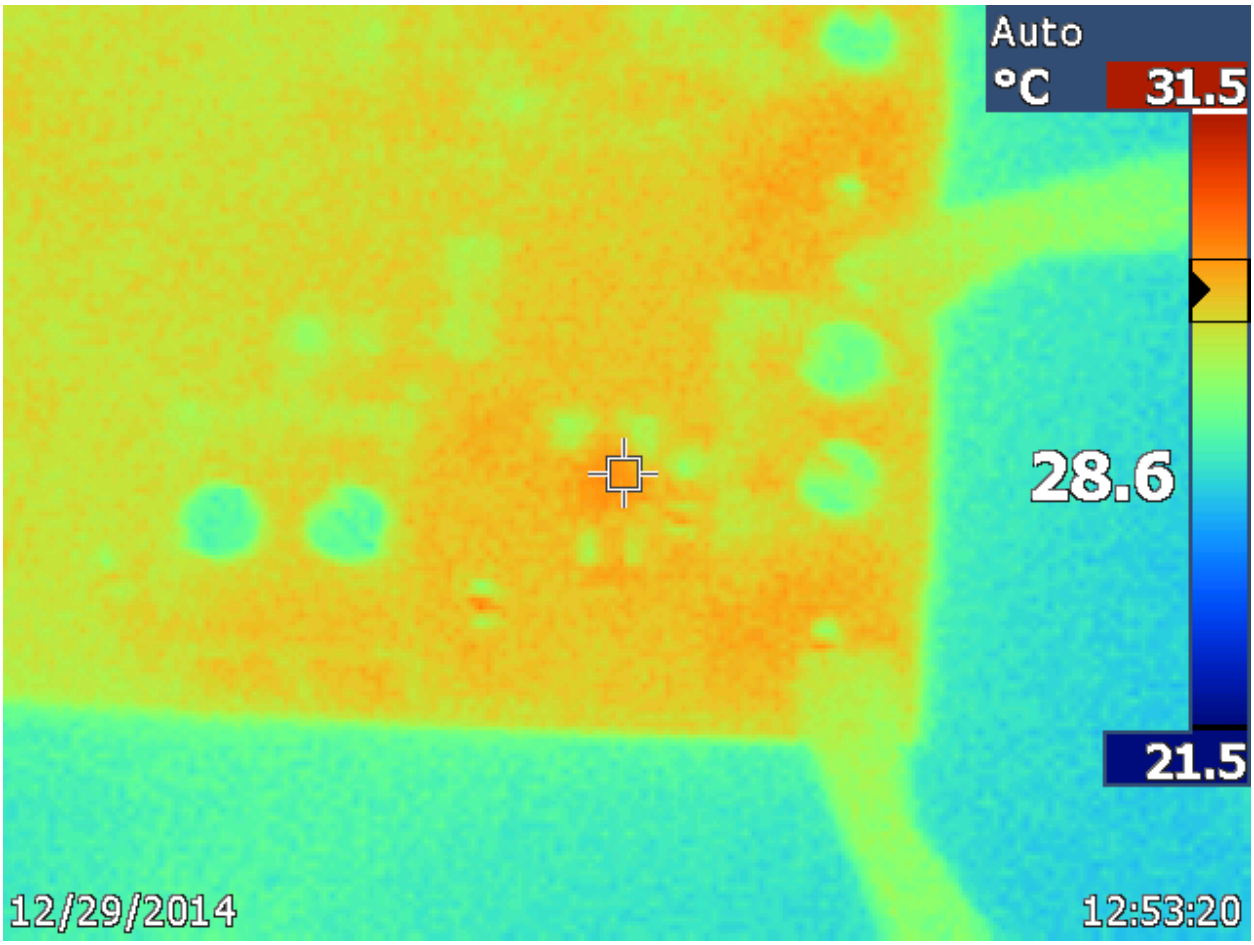


Figure 22. VIN = 3.3V, VCCAUX = 1.8V, IOUT = 280mA Thermal Image

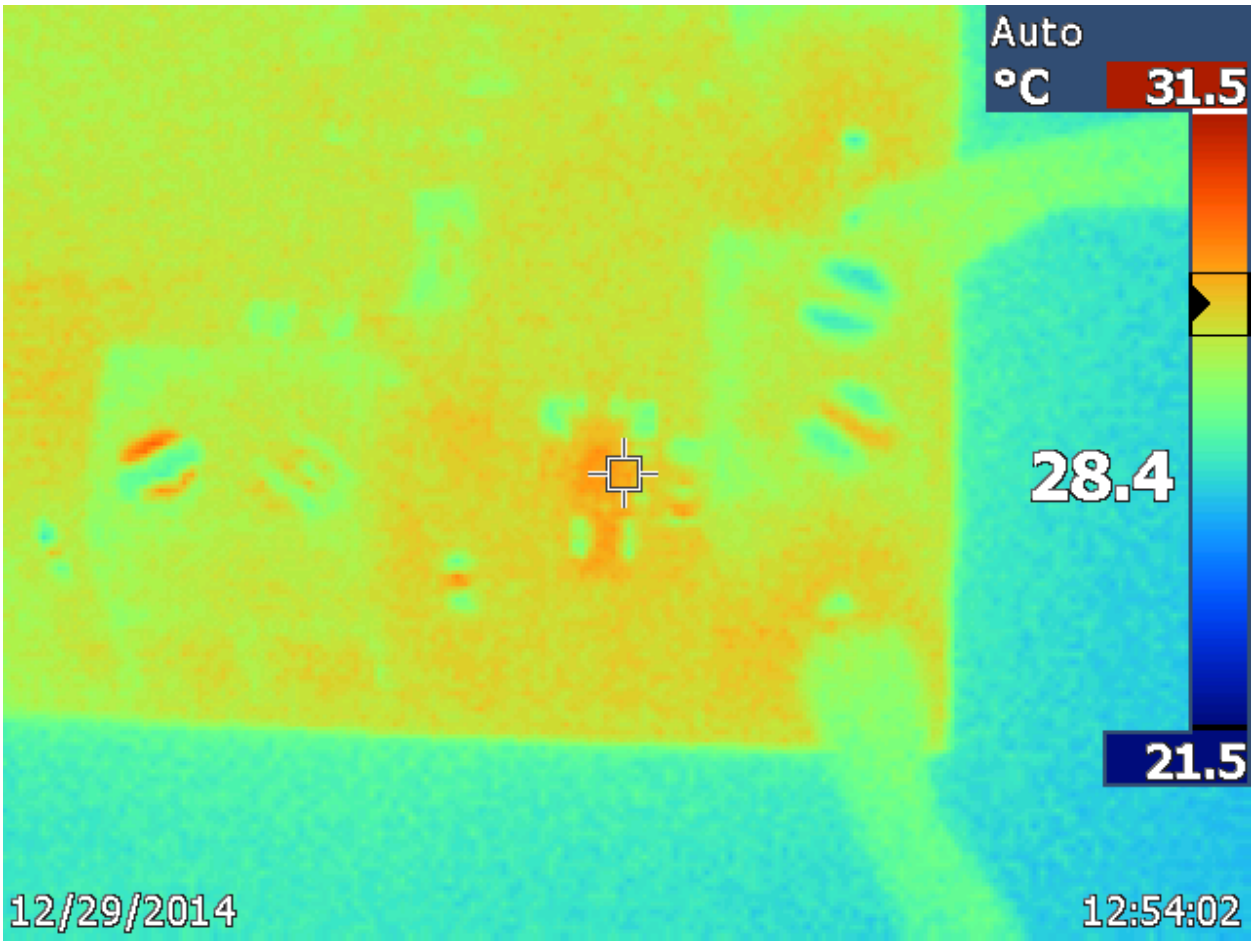


Figure 23. VIN = 5V, VCCAUX = 1.8V, IOUT = 280mA Thermal Image

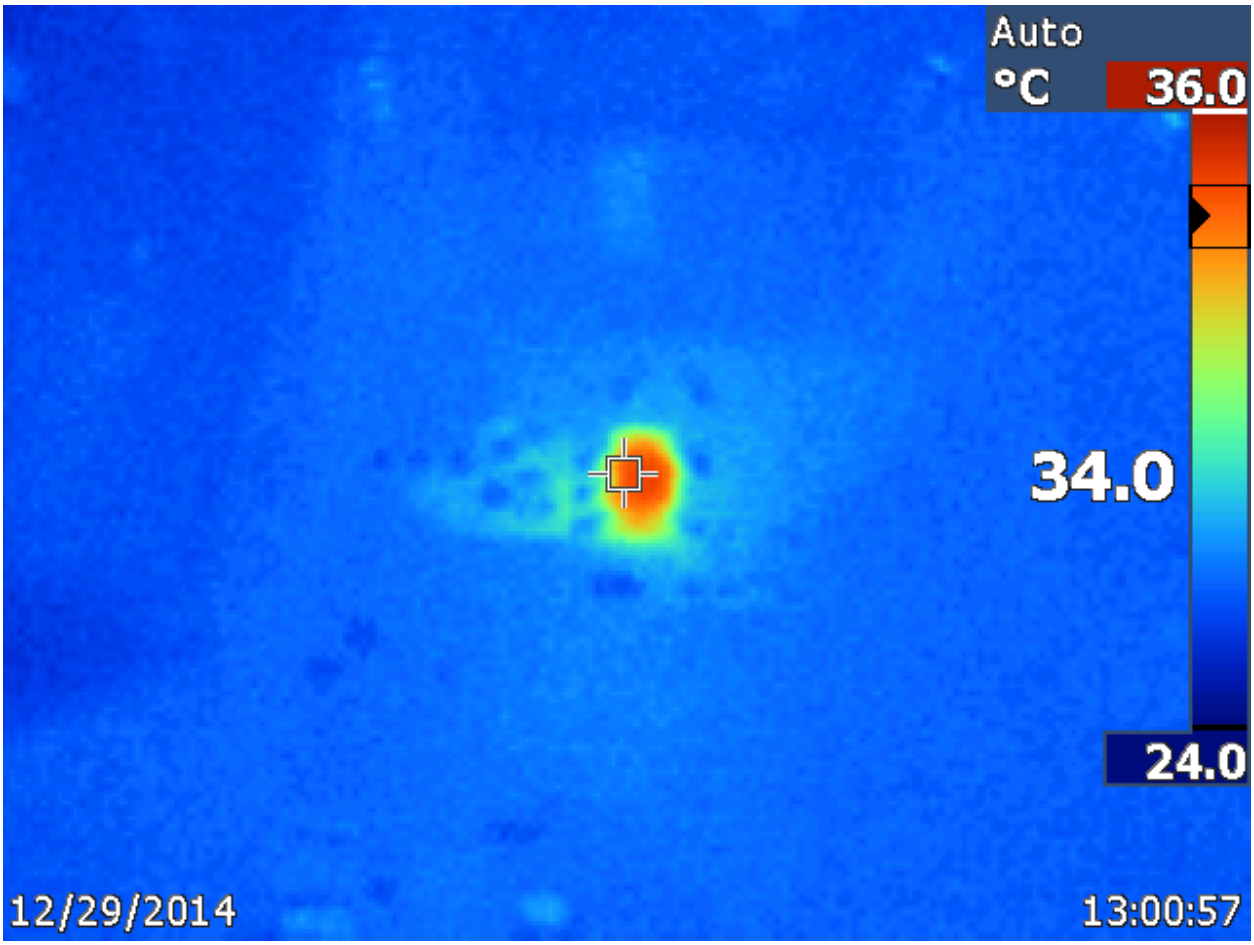


Figure 24. VIN = 3.3V, VCCO_2.5V = 2.5V, IOUT = 230mA Thermal Image

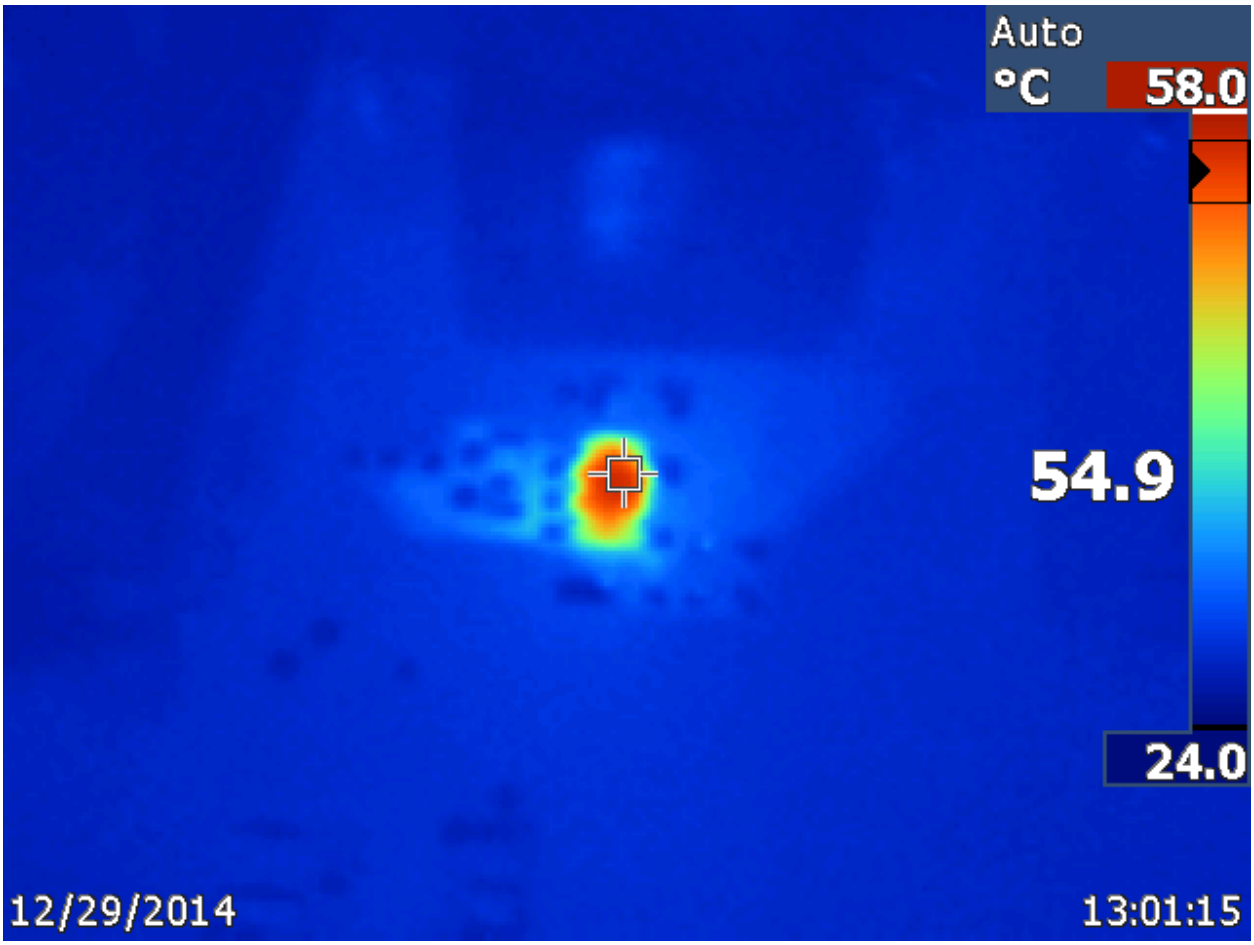


Figure 25. VIN = 5V, VCCO_2.5V = 2.5V, IOUT = 230mA Thermal Image

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