

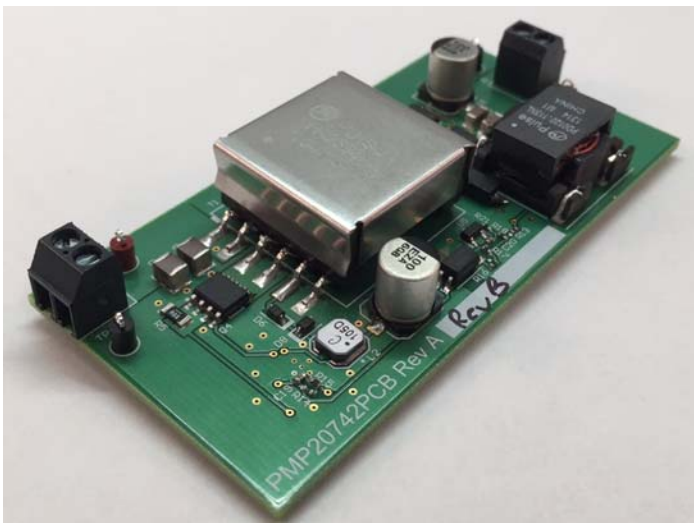
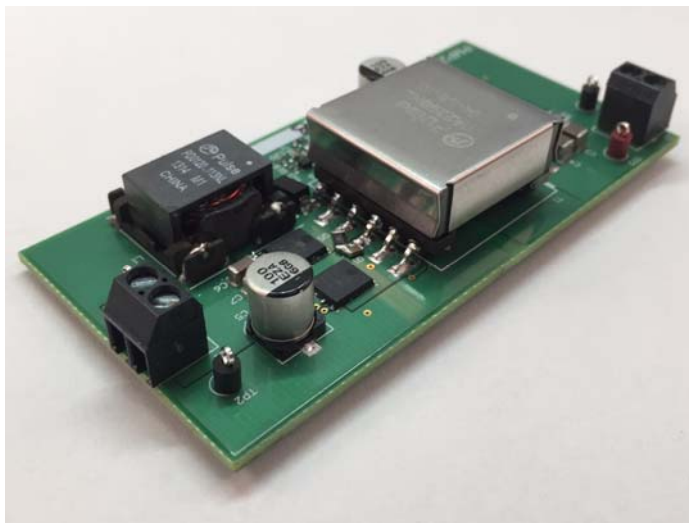
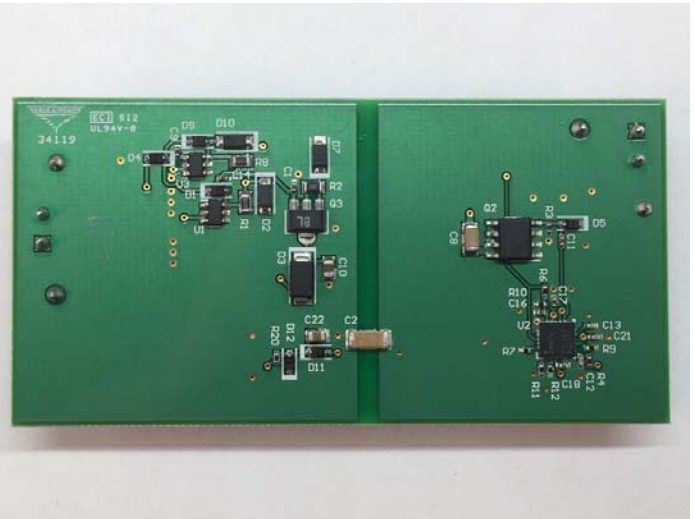
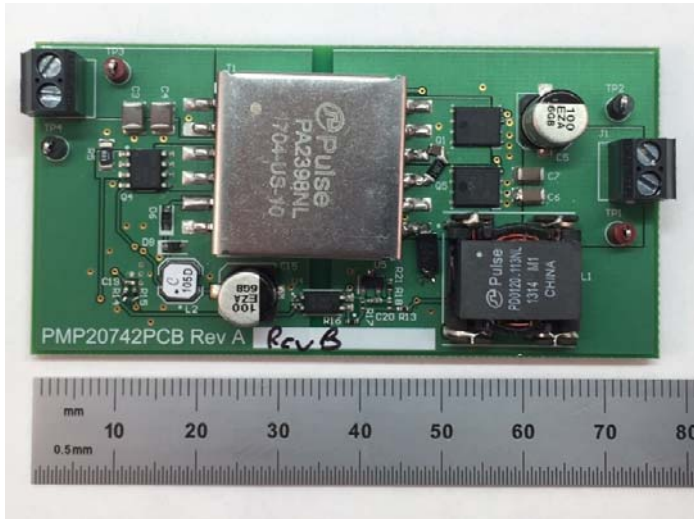
PMP20742 Rev B
12V/5A Active Clamp Forward
With Synchronous Rectifiers
36Vdc-60Vdc Input
Test Results

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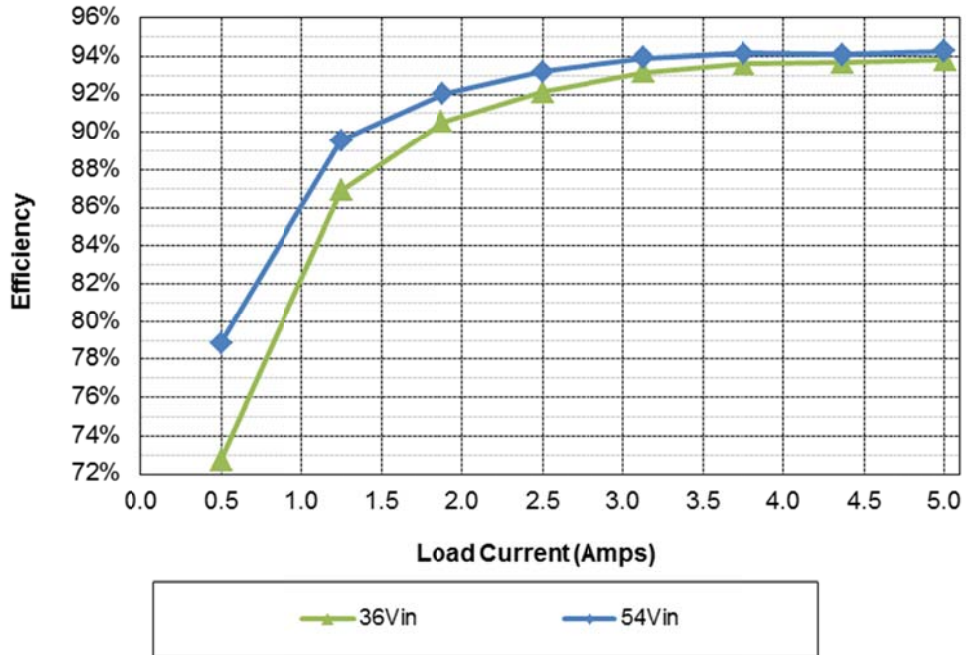
1 Photos

The photographs below show the PMP20742 Rev B prototype assembly. This circuit was built using a PMP20742PCB Rev A.

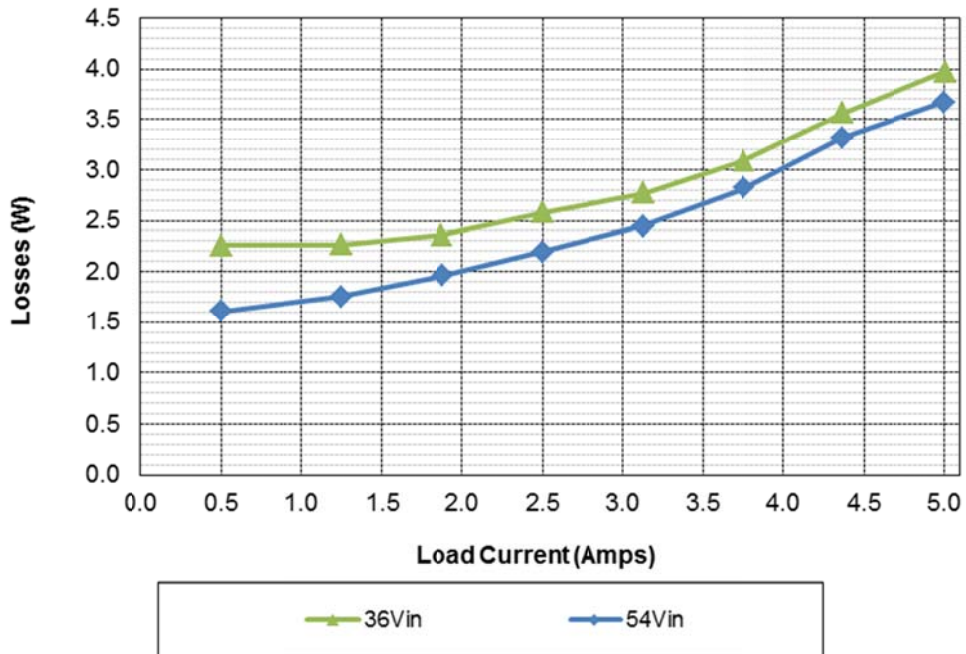


2 Efficiency

2.1 Efficiency Chart



2.2 Power Loss Chart

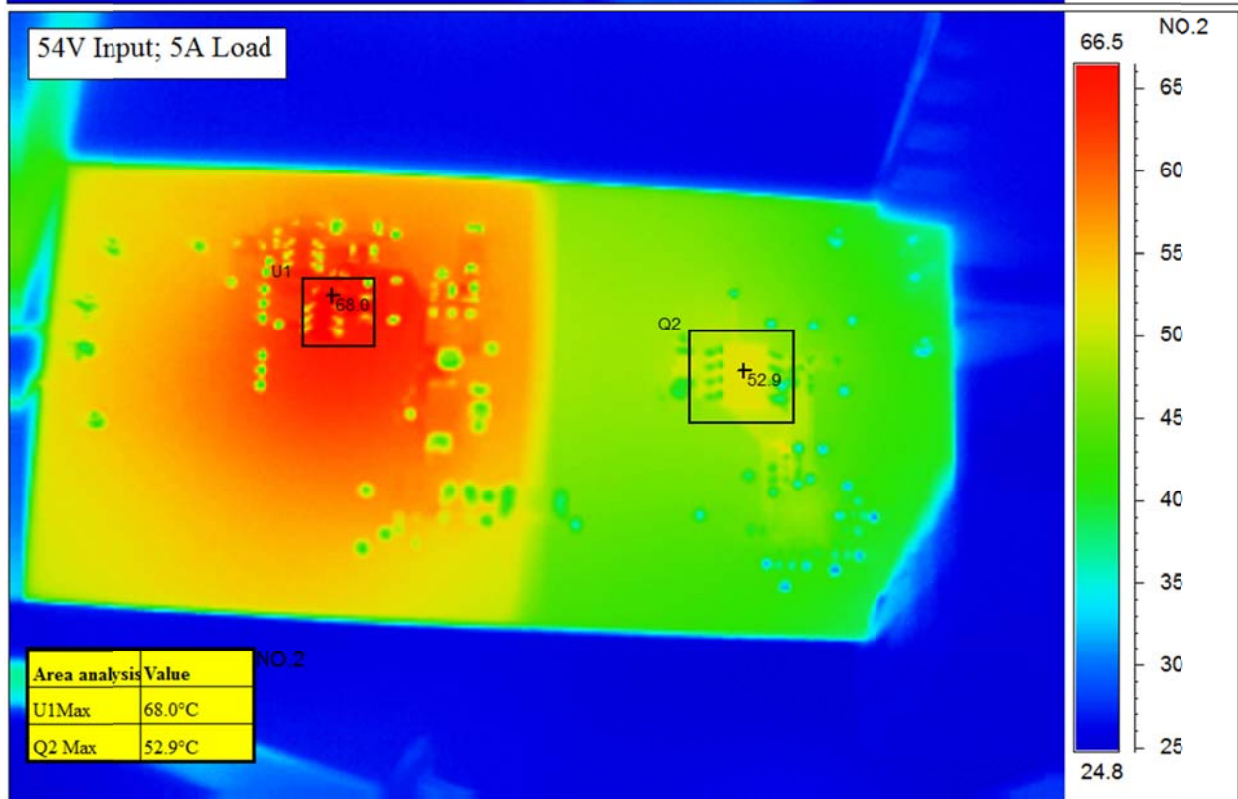
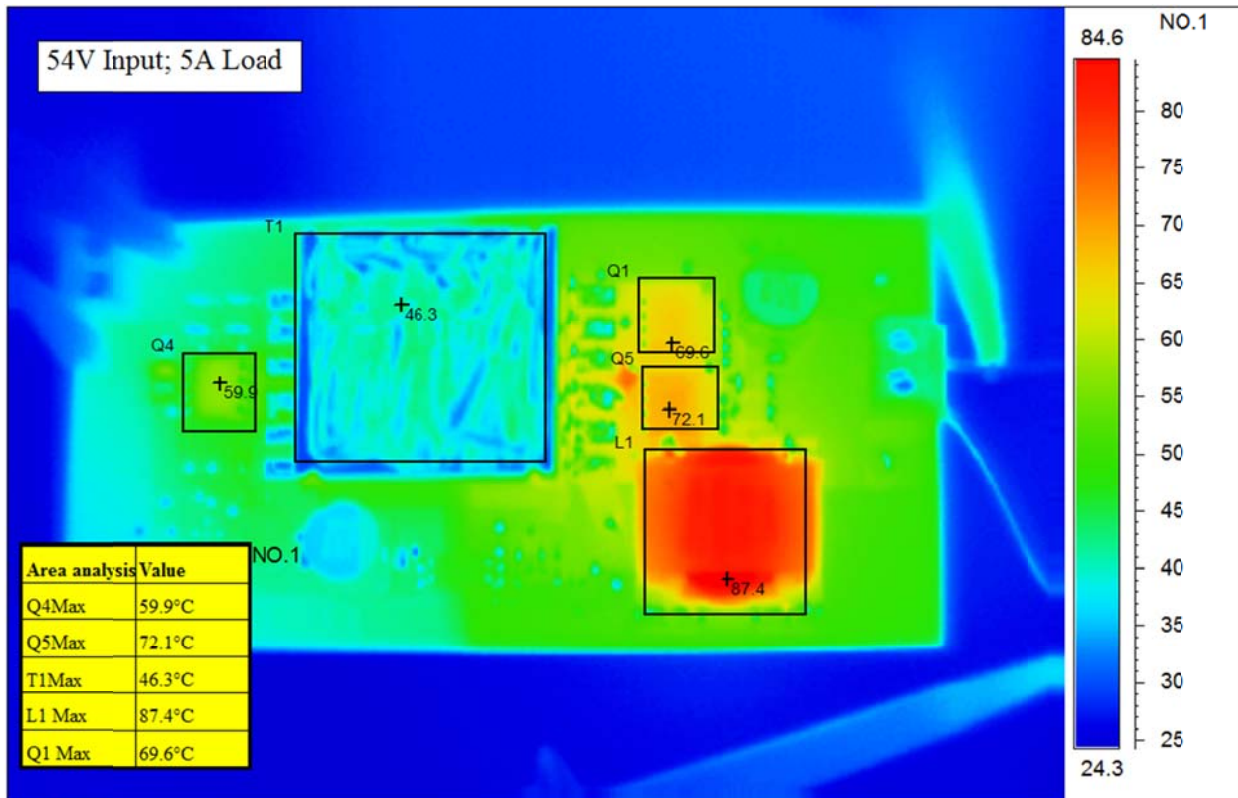


2.3 Raw Data

| 36Vin | | | | | | | |
|--------------|-------|-------|-------|--------|-------|--------|------------|
| lout | Vout | Vin | lin | Pin | Pout | Losses | Efficiency |
| 0.000 | 12.04 | 35.99 | 0.065 | 2.339 | 0.00 | 2.34 | 0.0% |
| 0.500 | 12.05 | 36.01 | 0.230 | 8.282 | 6.03 | 2.26 | 72.7% |
| 1.249 | 12.05 | 36.00 | 0.481 | 17.316 | 15.05 | 2.27 | 86.9% |
| 1.873 | 12.05 | 36.02 | 0.692 | 24.926 | 22.57 | 2.36 | 90.5% |
| 2.501 | 12.05 | 35.99 | 0.909 | 32.715 | 30.14 | 2.58 | 92.1% |
| 3.132 | 12.04 | 36.01 | 1.124 | 40.48 | 37.71 | 2.77 | 93.2% |
| 3.755 | 12.04 | 35.99 | 1.342 | 48.30 | 45.21 | 3.09 | 93.6% |
| 4.37 | 12.04 | 36.01 | 1.560 | 56.18 | 52.61 | 3.56 | 93.7% |
| 5.01 | 12.04 | 36.00 | 1.786 | 64.30 | 60.32 | 3.98 | 93.8% |

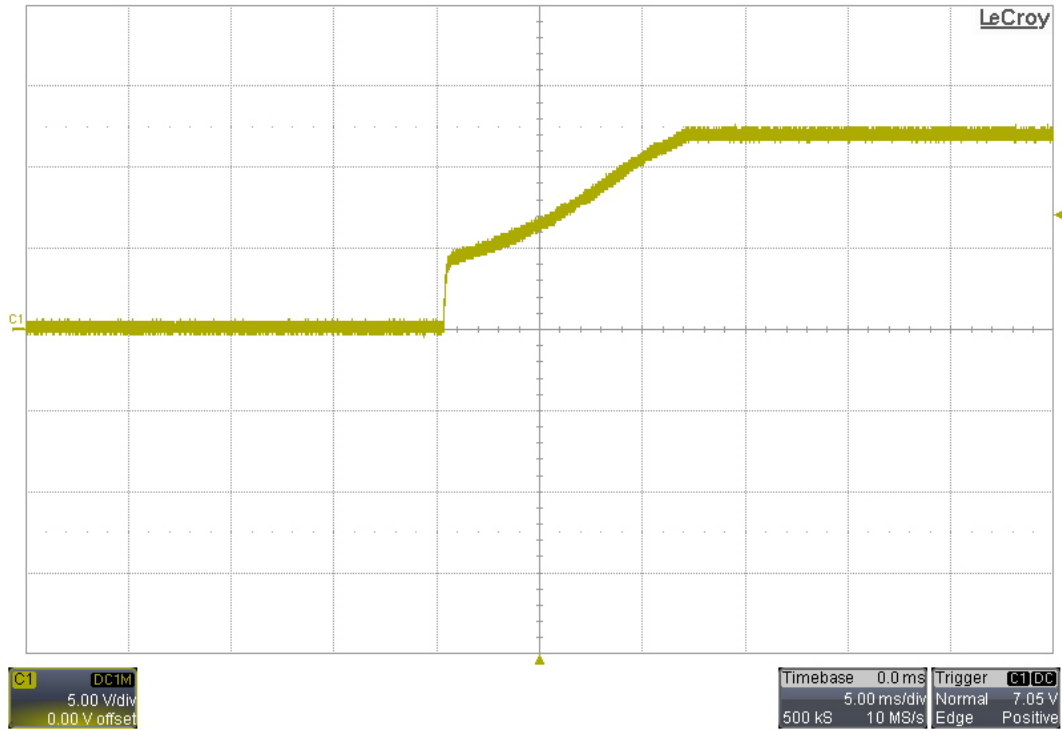
| 54Vin | | | | | | | |
|--------------|-------|-------|-------|--------|-------|--------|------------|
| lout | Vout | Vin | lin | Pin | Pout | Losses | Efficiency |
| 0.000 | 12.05 | 53.99 | 0.030 | 1.620 | 0.00 | 1.62 | 0.0% |
| 0.498 | 12.05 | 53.97 | 0.141 | 7.610 | 6.00 | 1.61 | 78.9% |
| 1.249 | 12.05 | 54.03 | 0.311 | 16.803 | 15.05 | 1.75 | 89.6% |
| 1.876 | 12.05 | 54.00 | 0.455 | 24.570 | 22.61 | 1.96 | 92.0% |
| 2.501 | 12.05 | 53.98 | 0.599 | 32.334 | 30.14 | 2.20 | 93.2% |
| 3.127 | 12.05 | 54.01 | 0.743 | 40.13 | 37.68 | 2.45 | 93.9% |
| 3.756 | 12.04 | 53.98 | 0.890 | 48.04 | 45.22 | 2.82 | 94.1% |
| 4.37 | 12.04 | 53.99 | 1.036 | 55.93 | 52.61 | 3.32 | 94.1% |
| 5.00 | 12.04 | 53.99 | 1.183 | 63.87 | 60.20 | 3.67 | 94.3% |

3 Thermal Images

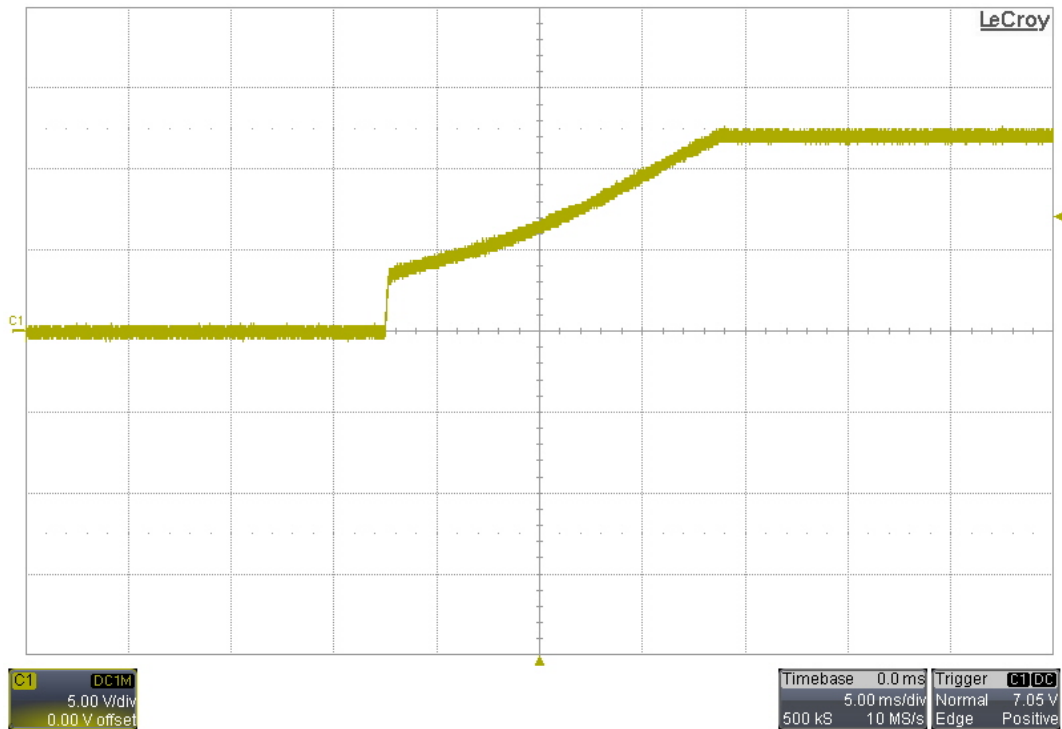


4 Startup

4.1 Startup – 54Vin, No Load

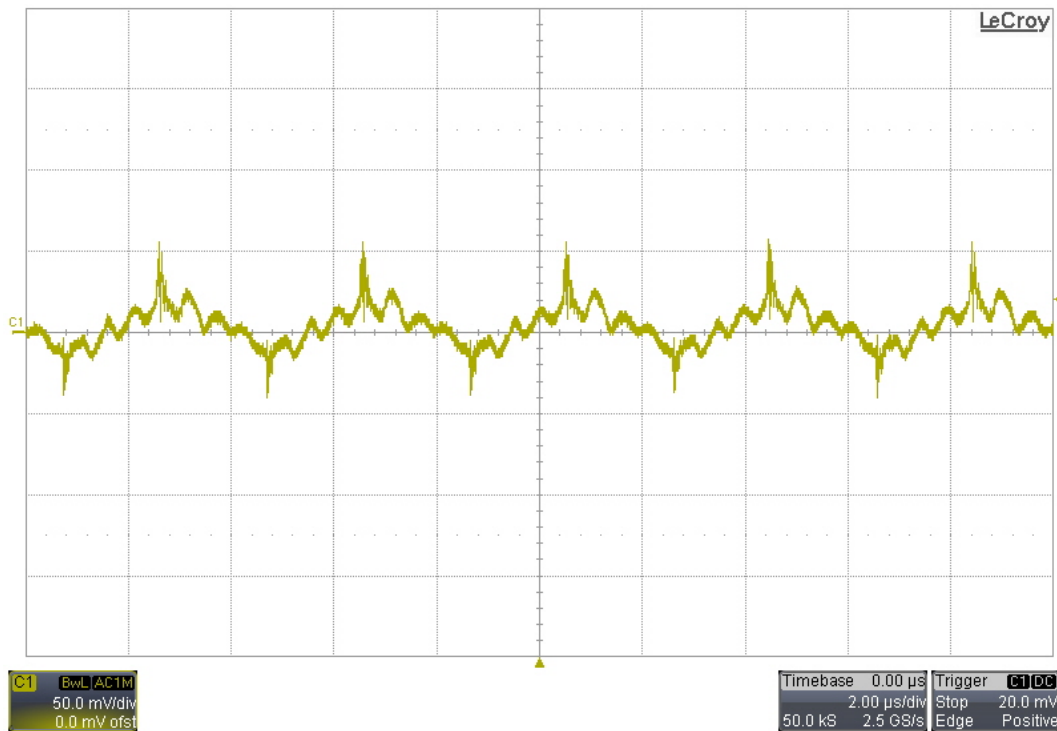


4.2 Startup – 54Vin, 3Ω Load

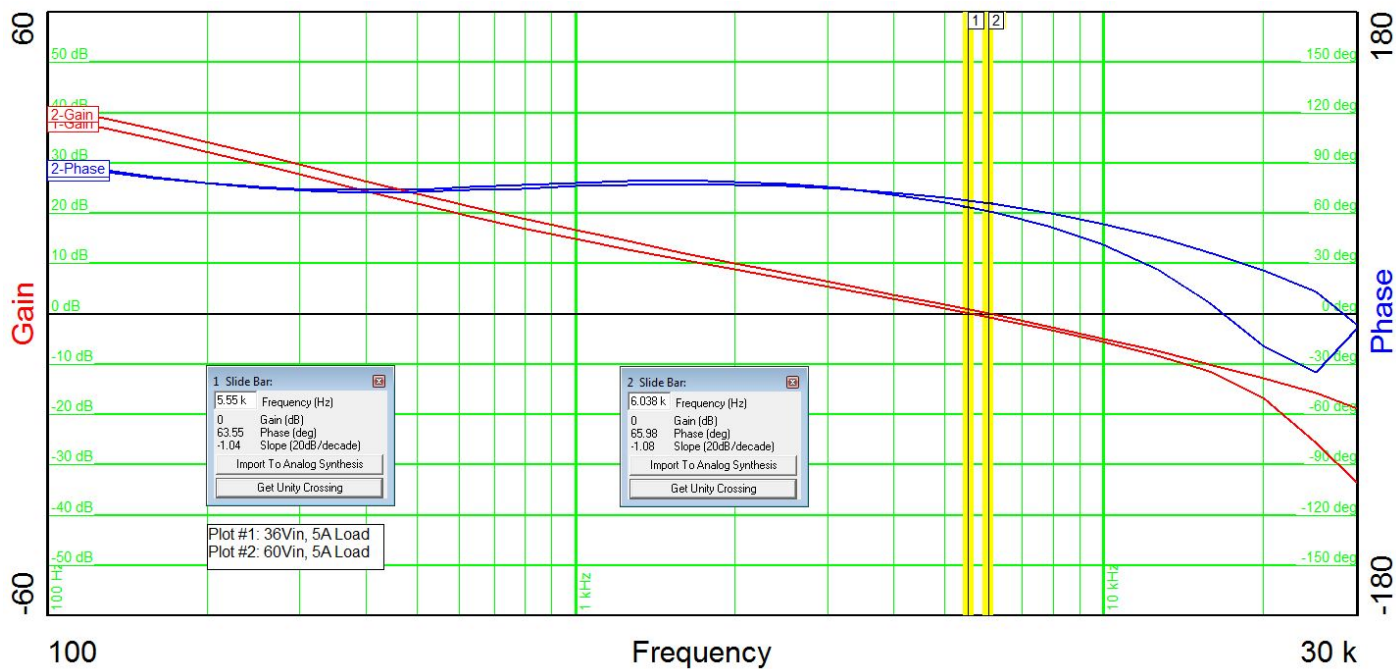


5 Output Ripple Voltage

5.1 54V Input, 5A Load

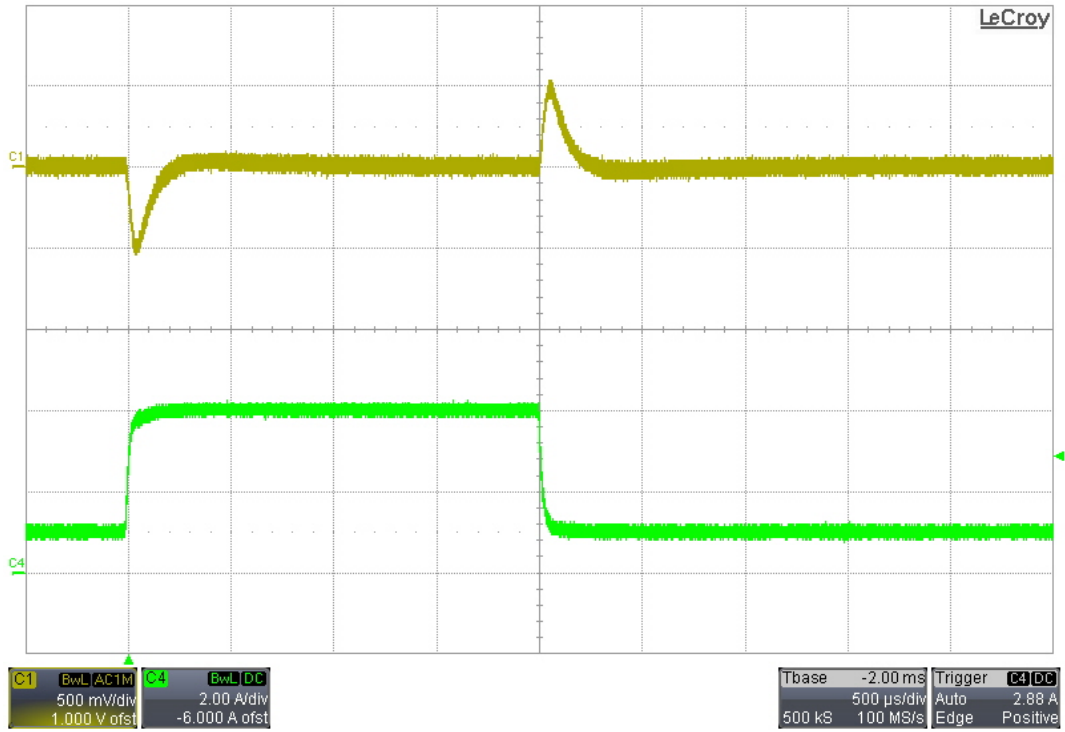


6 Loop Response



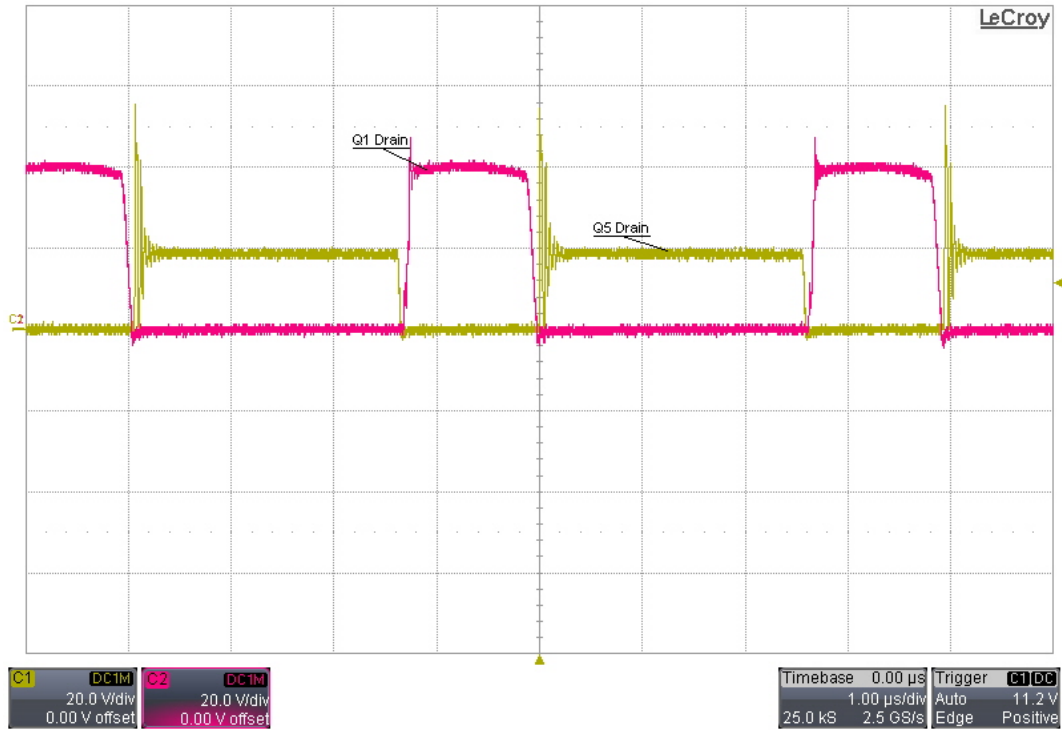
7 Load Transients

7.1 54Vin, 1A to 4A

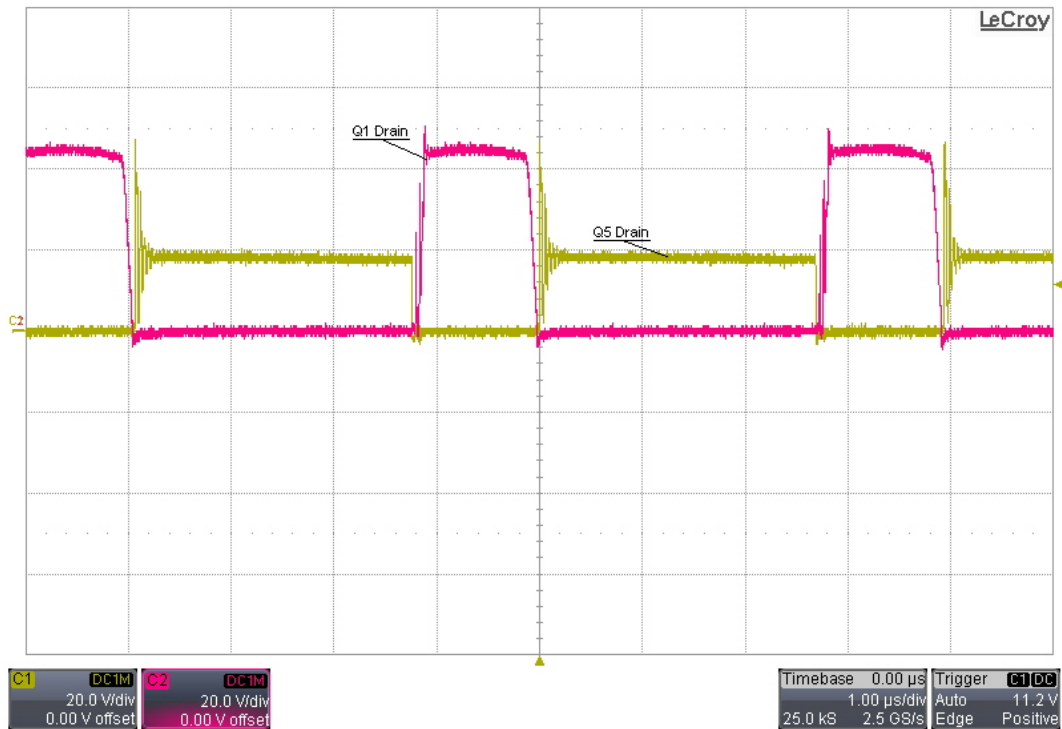


8 Switching Waveforms

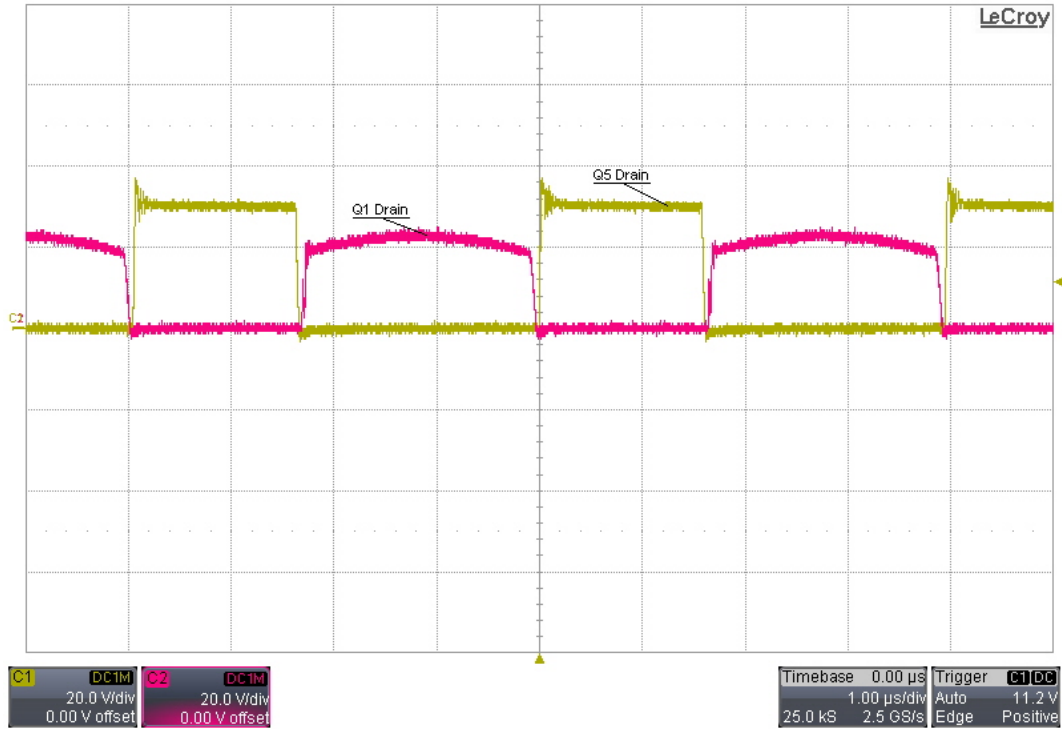
8.1 Secondary – 36V Input, No Load



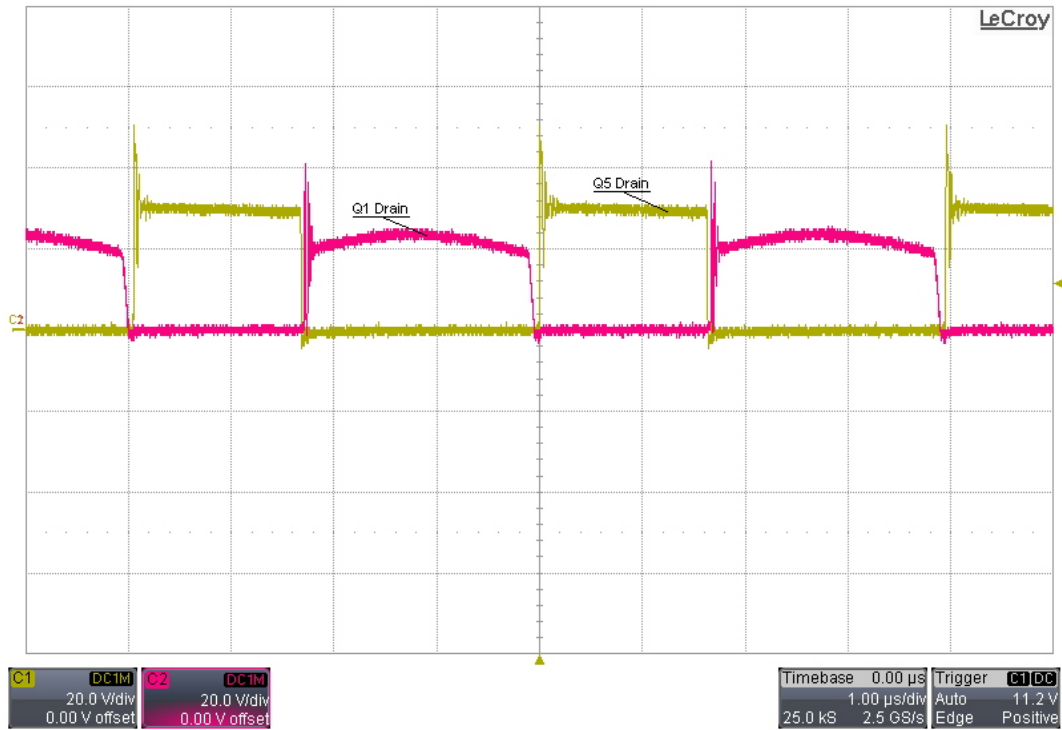
8.2 Secondary – 36V Input, 5A Load



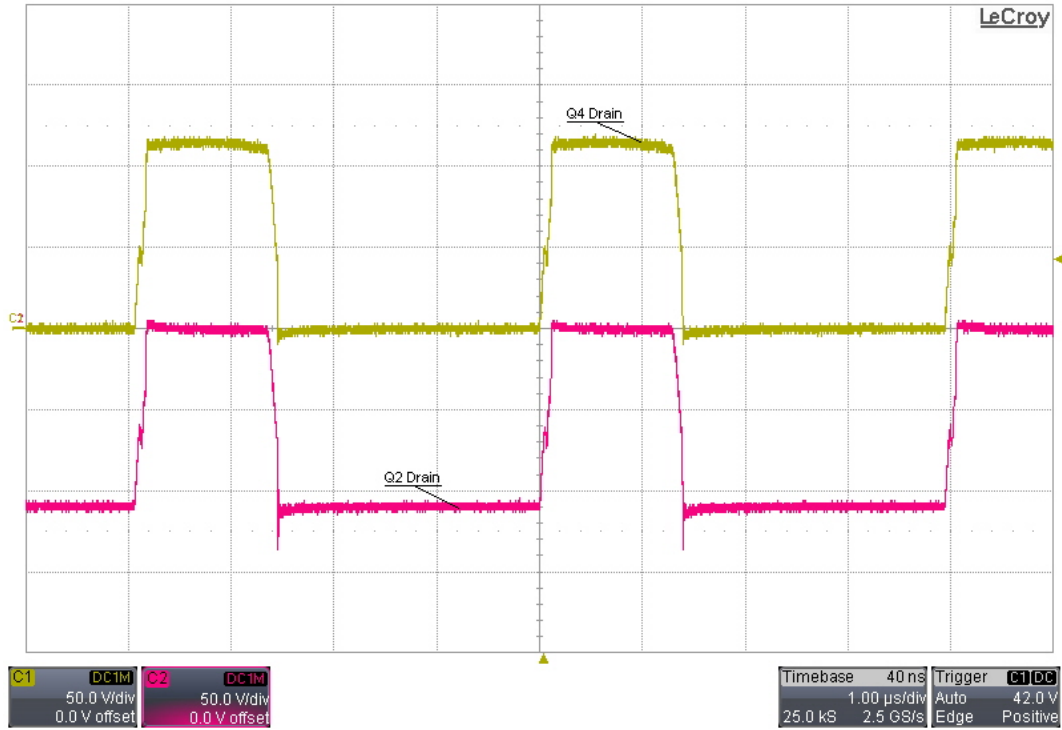
8.3 Secondary – 60V Input, No Load



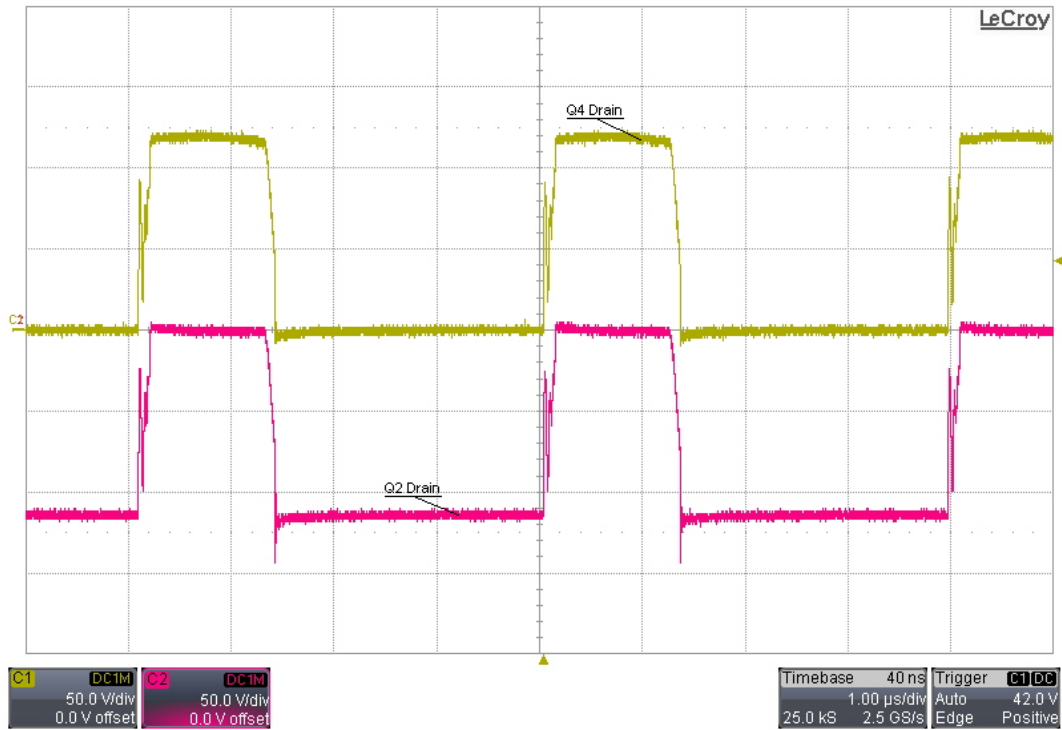
8.4 Secondary – 60V Input, 5A Load



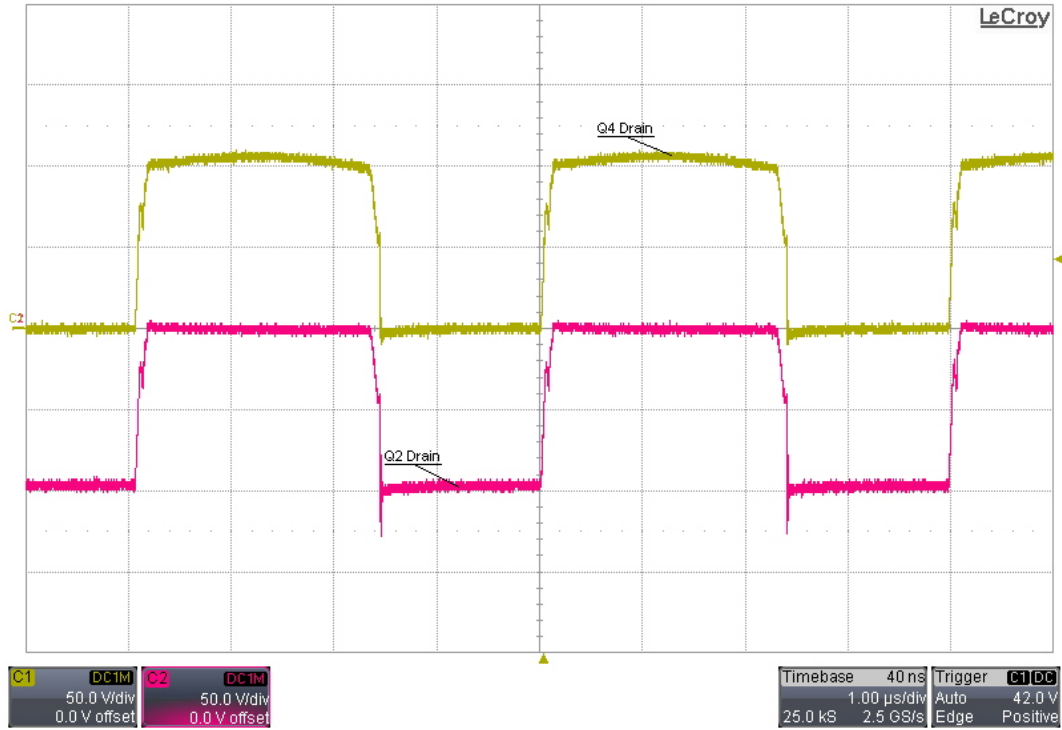
8.5 Primary – 36V Input, No Load



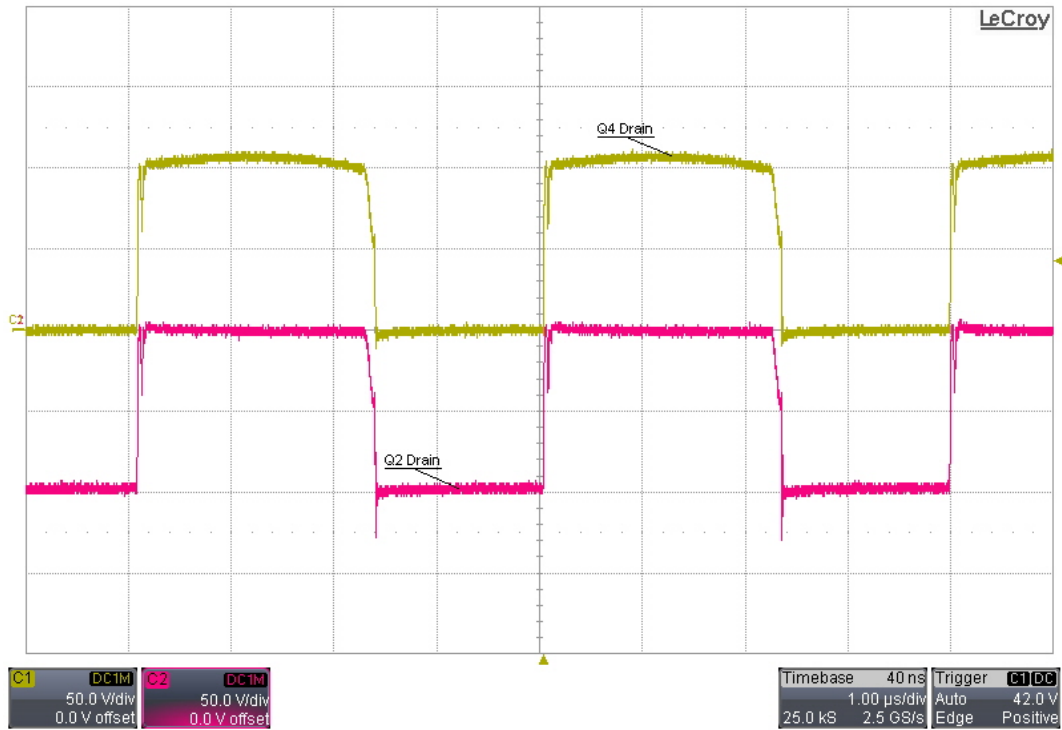
8.6 Primary – 36V Input, 5A Load



8.7 Primary – 60V Input, No Load



8.8 Primary – 60V Input, 5A Load



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