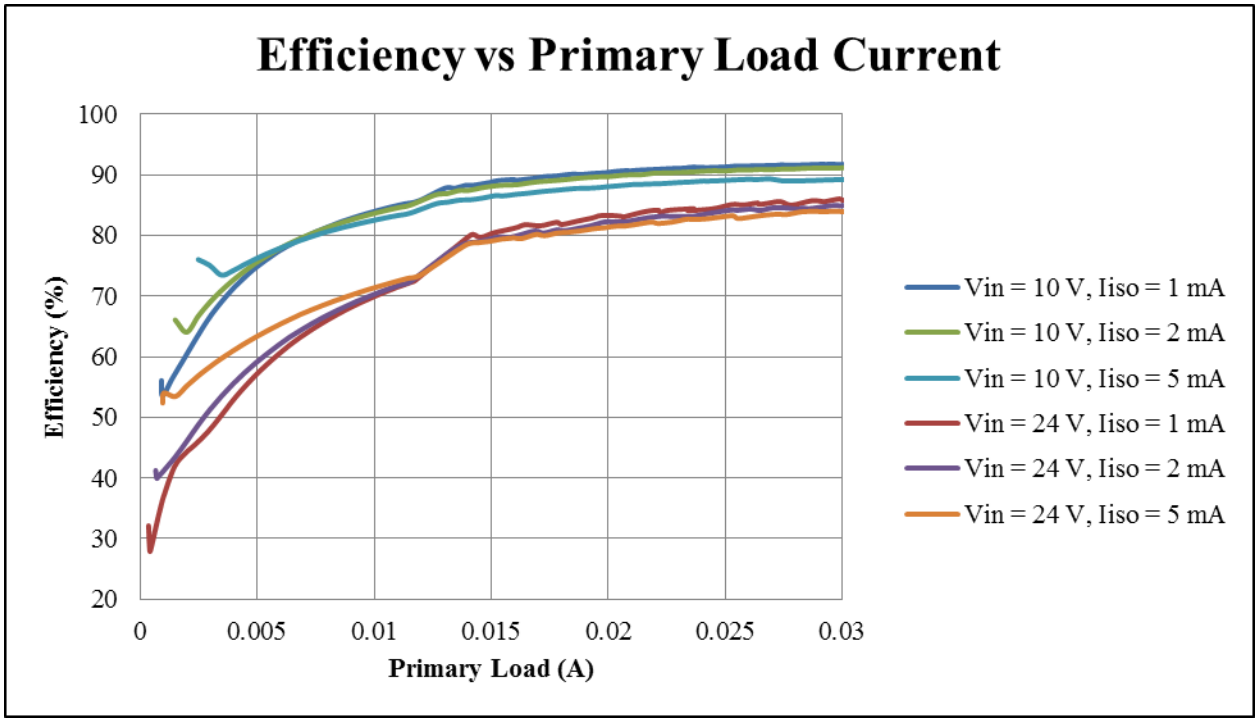
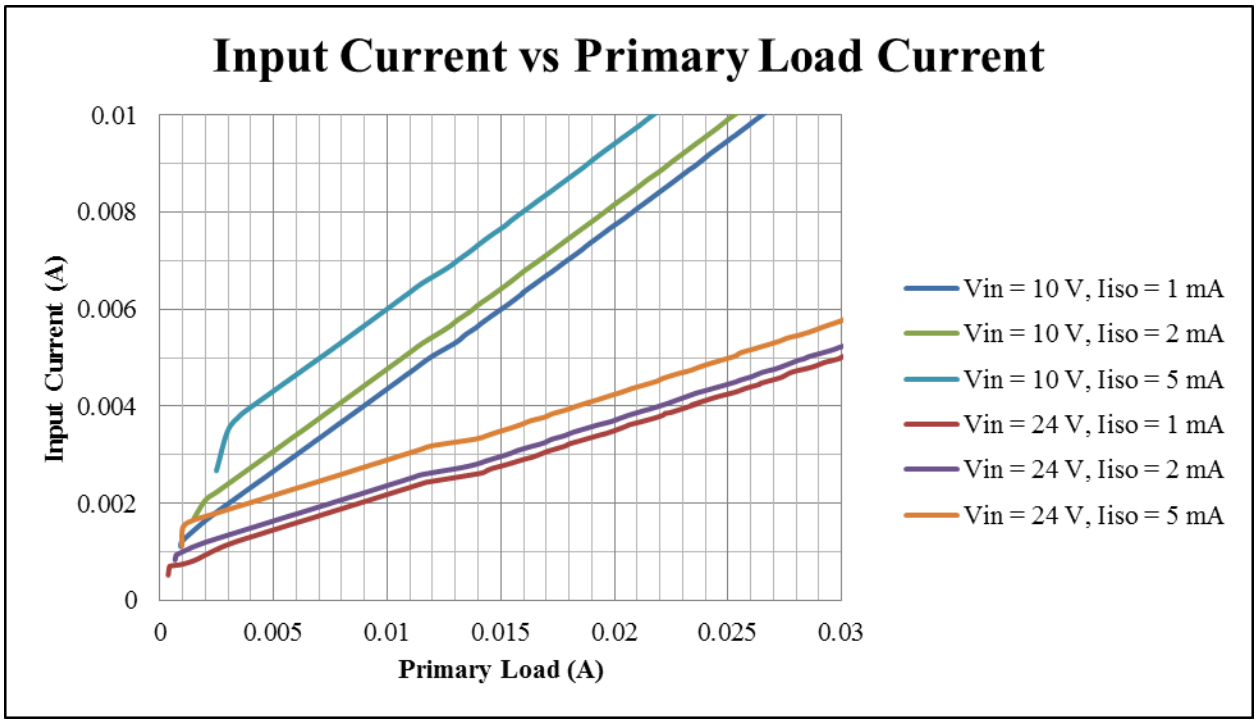
1 Efficiency

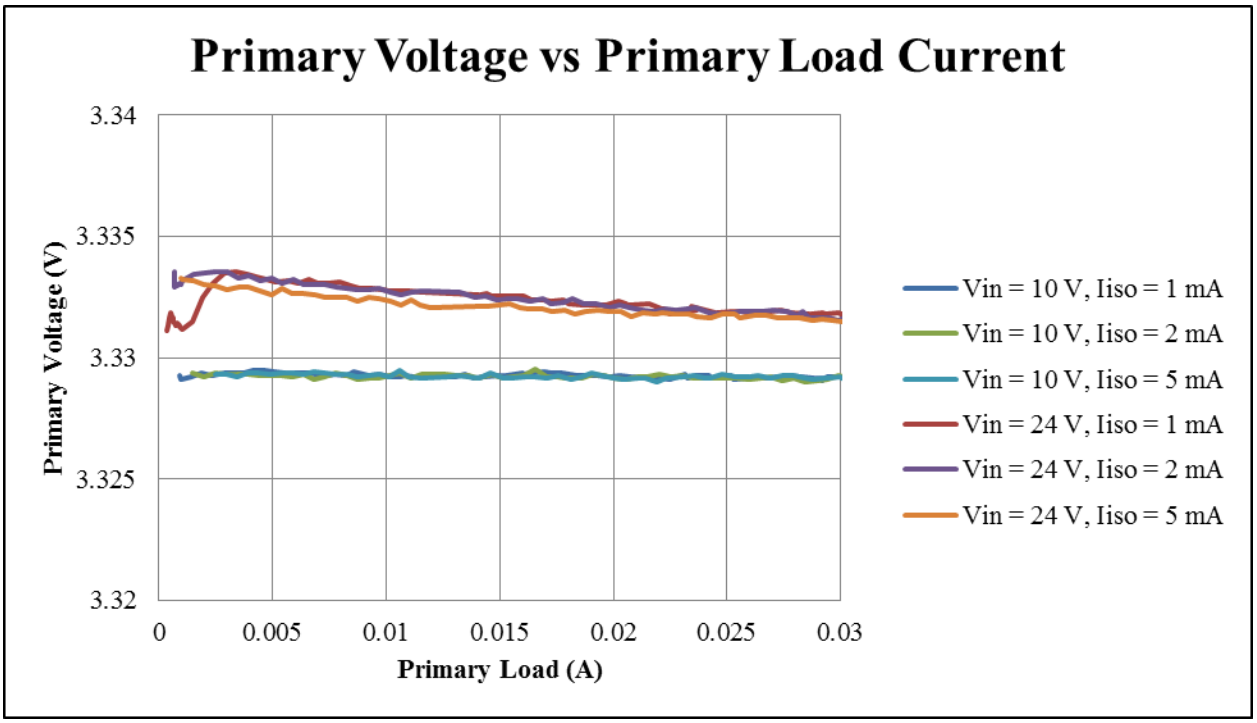
The following graphs show the efficiency and input current versus primary load current. The 3.3V isolated load was kept at a fixed resistance while the 3.3V primary load was varied. The measurements are taken with a 10 V and 24 V input.

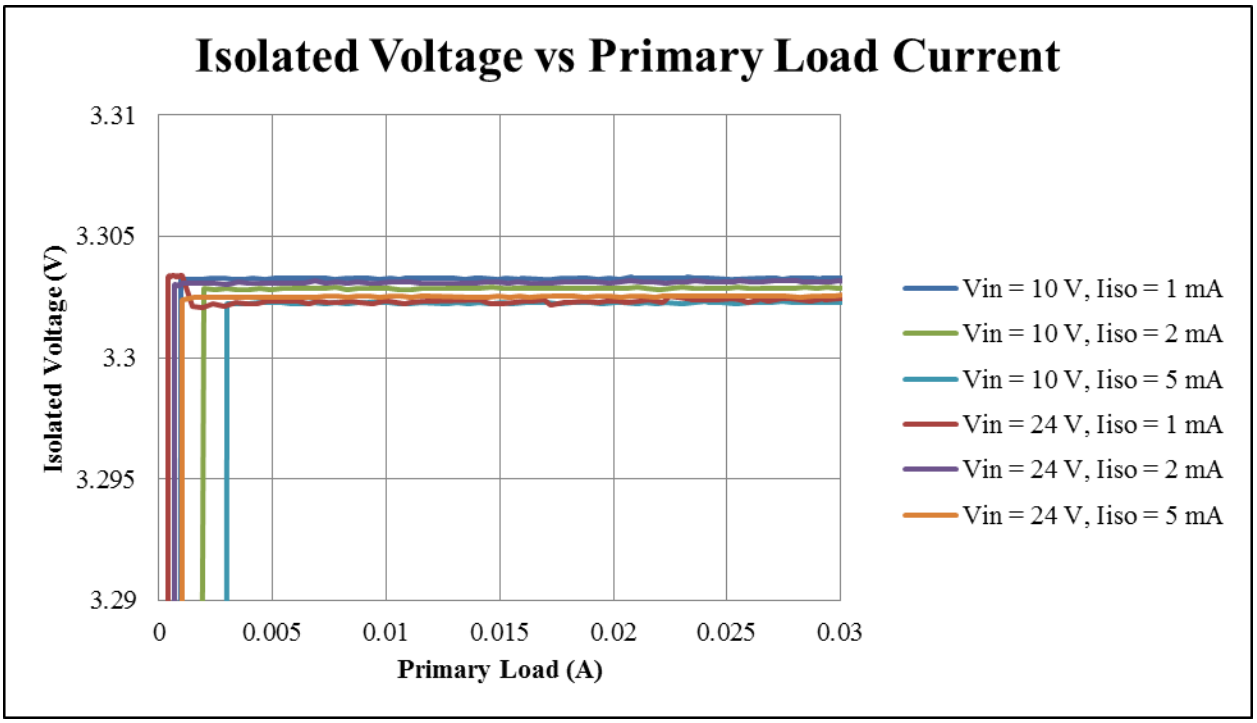



Input Current vs Primary Load Current
Input Current (A)
0.01
0.008
0.006
0.004
0.002
0
0
0.005
0.01
0.015
0.02
0.025
0.03
Primary Load (A)
Vin = 10 V, Iiso = 1 mA
Vin = 10 V, Iiso = 2 mA
Vin = 10 V, Iiso = 5 mA
Vin = 24 V, Iiso = 1 mA
Vin = 24 V, Iiso = 2 mA
Vin = 24 V, Iiso = 5 mA

2 Regulation

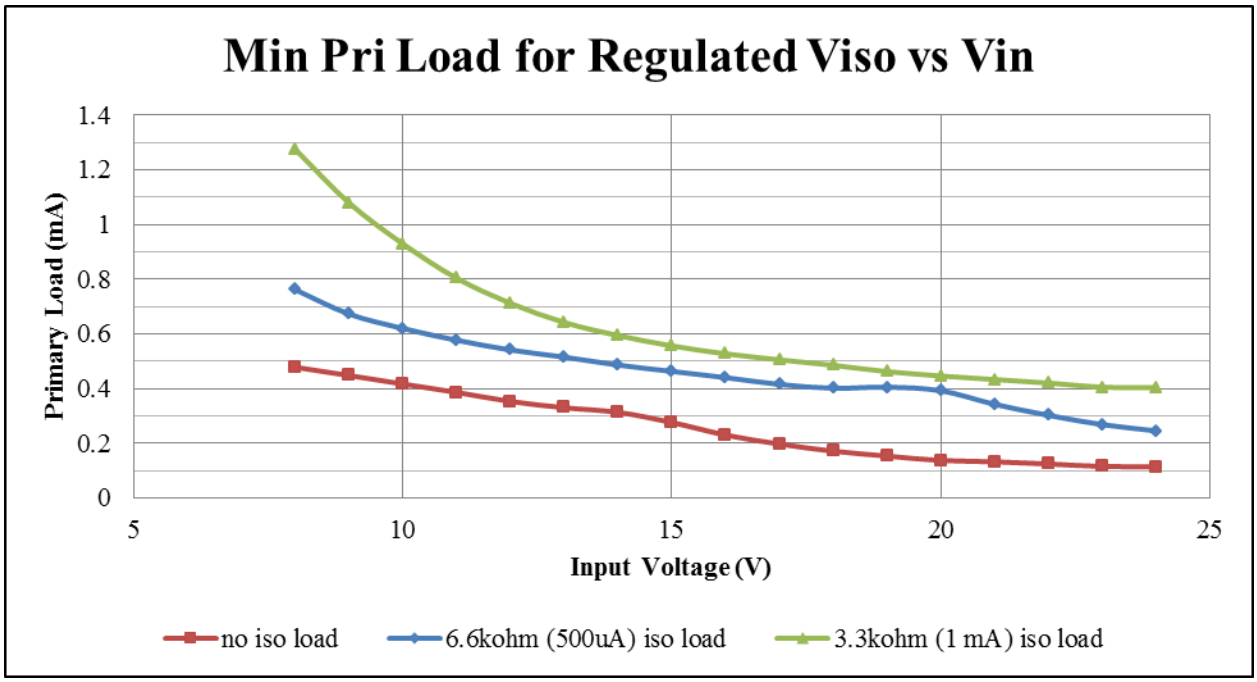
The following graphs show the load regulation for both outputs. The 3.3V isolated load was kept at a fixed resistance while the 3.3V primary load was varied. The measurements are taken with a 10 V and 24 V input.

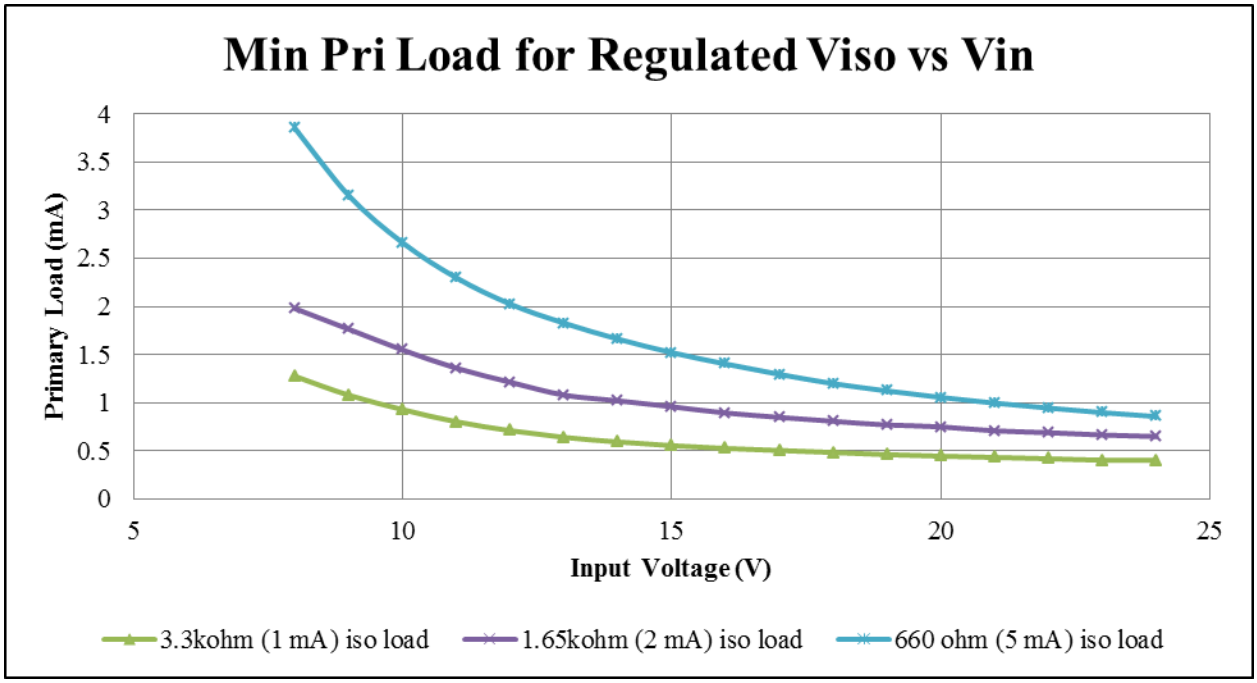




3 Minimum Primary Load

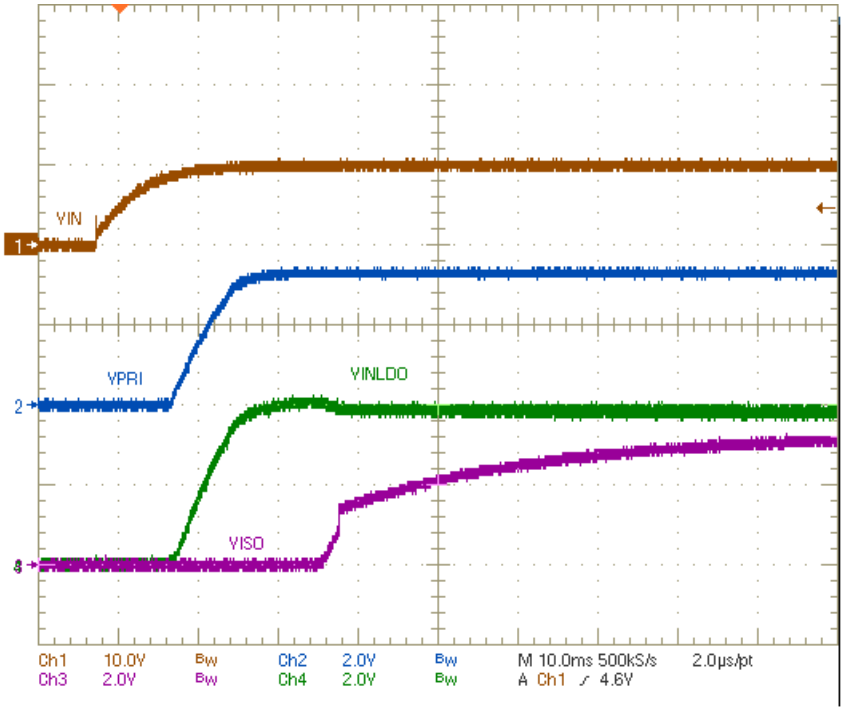
In this topology a minimum primary load is required to regulate the isolated output. The following graphs show the minimum primary load required to bring the isolated output within 1% of 3.3V with varying input voltage. At each input voltage the 3.3V isolated load was kept at a fixed resistance while the 3.3V primary load was increased.

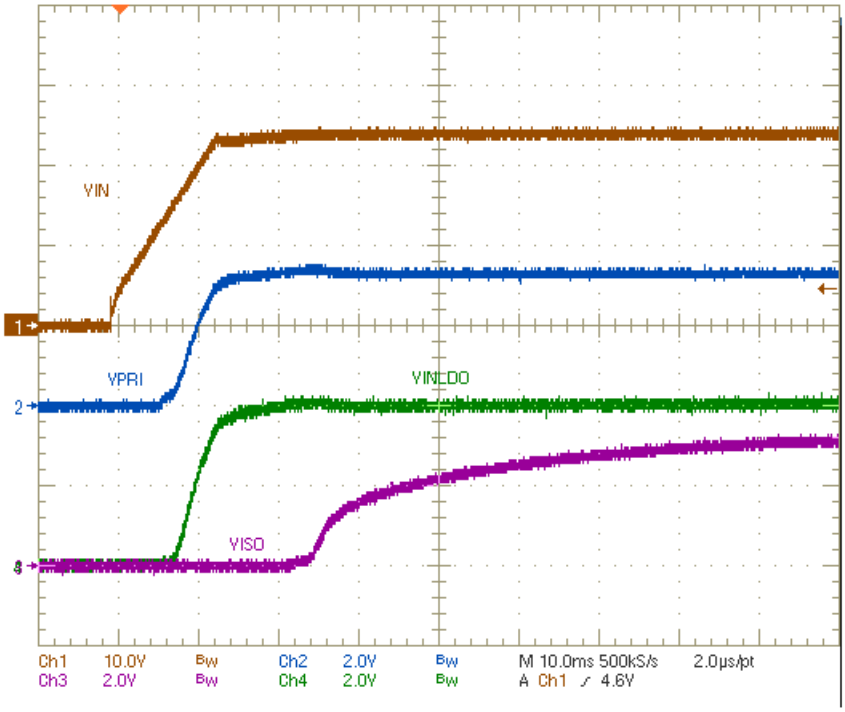




4 Startup

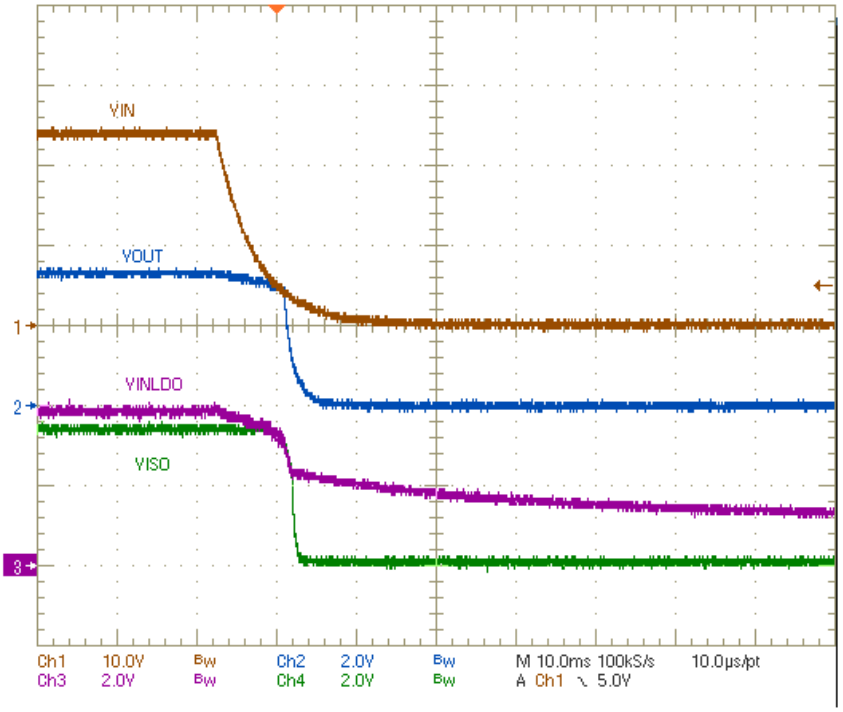
The following images show the startup waveform at max load with Vin = 10V and Vin = 24V. Startup is tested by turning on the Vin voltage supply.
(Channel 1 = VIN at TP1, Channel 2 = VOUT at TP6, Channel 3 = VISO at TP3, Channel 4 = IN pin of LDO)

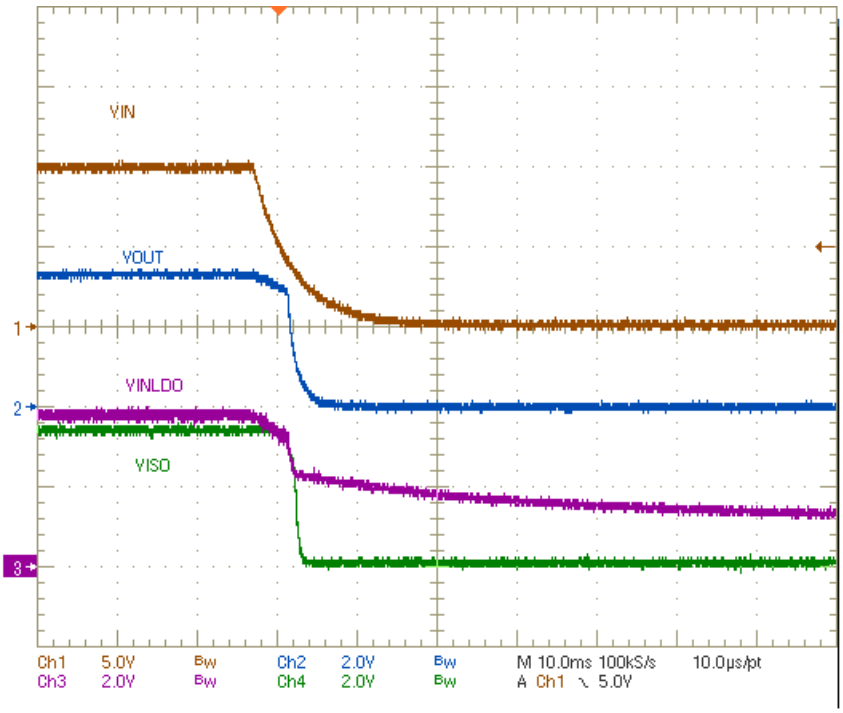




5 Shutdown

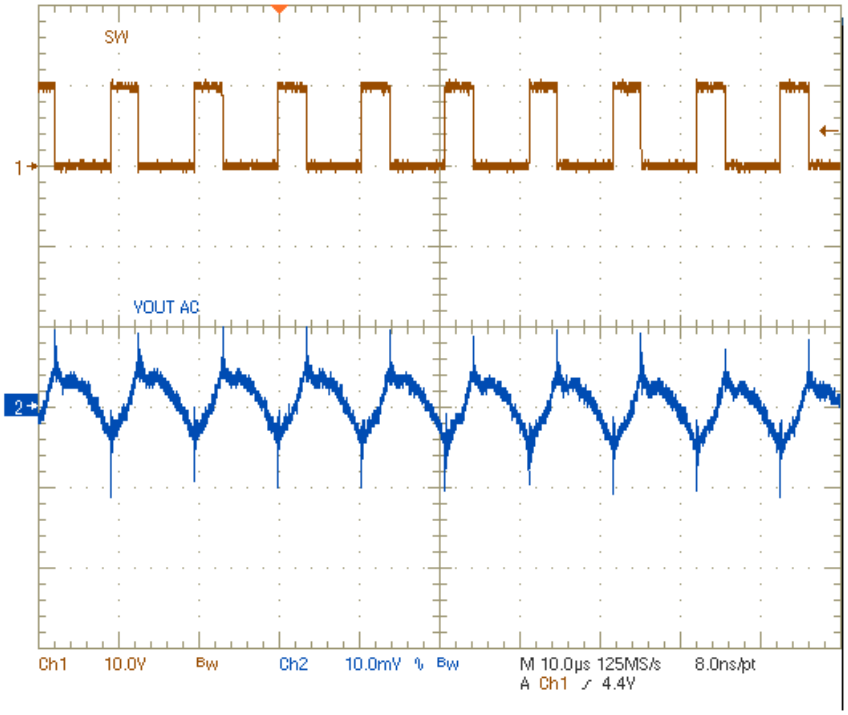
The following images show the shutdown waveform at max load with Vin = 10V and Vin = 24V. Shutdown is tested by turning off the VIN voltage supply.
(Channel 1 = VIN at TP1, Channel 2 = VOUT at TP6, Channel 3 = VISO at TP3, Channel 4 = IN pin of LDO)

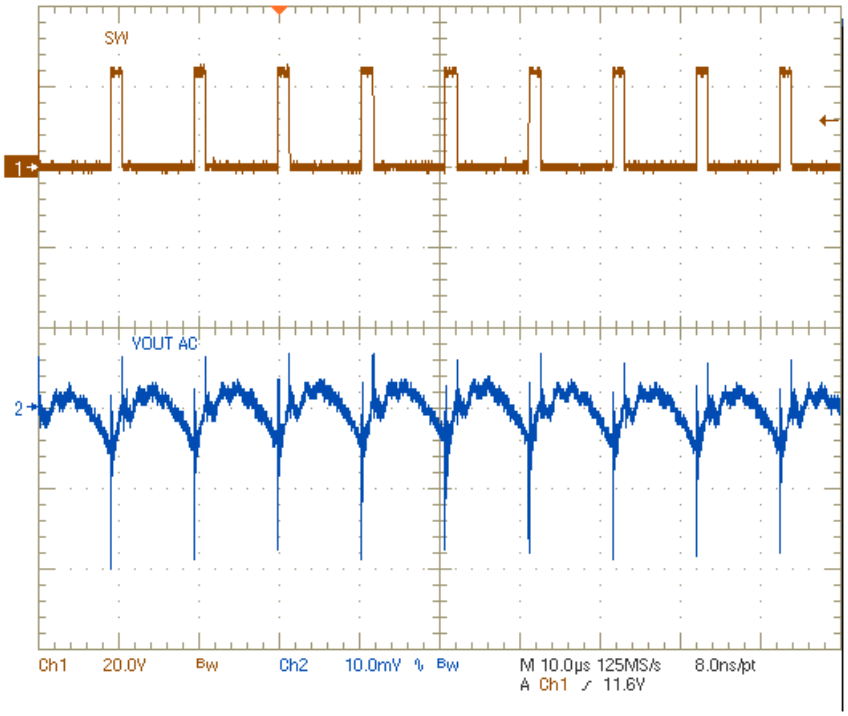




6 Switching Node and Output Ripple

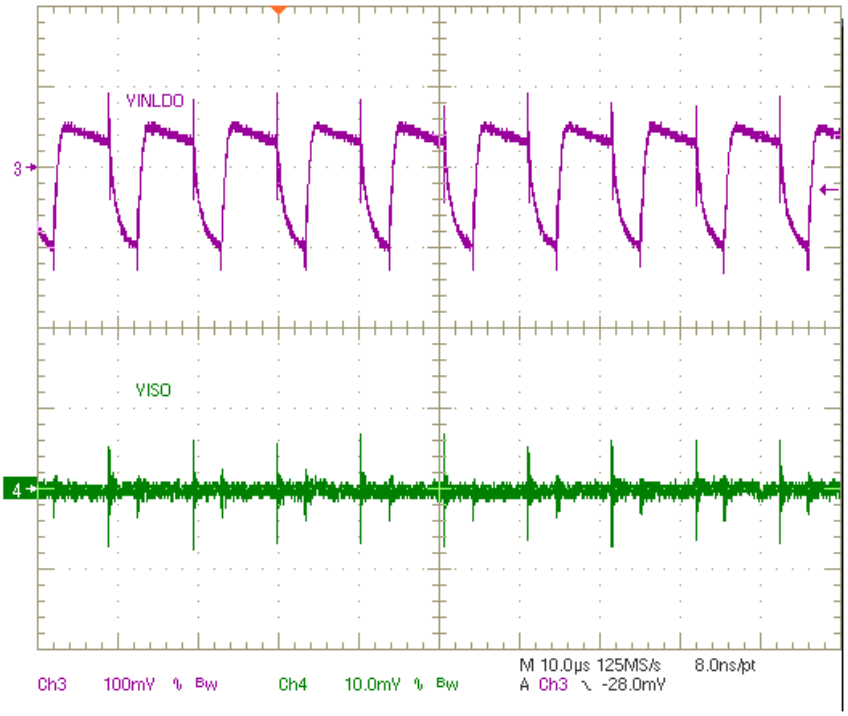
The following images show the output voltage ripple at max load with Vin = 10 V and Vin = 24 V. (Channel 1 = Switching Node PH, Channel 2 = VOUT AC coupled at TP6)

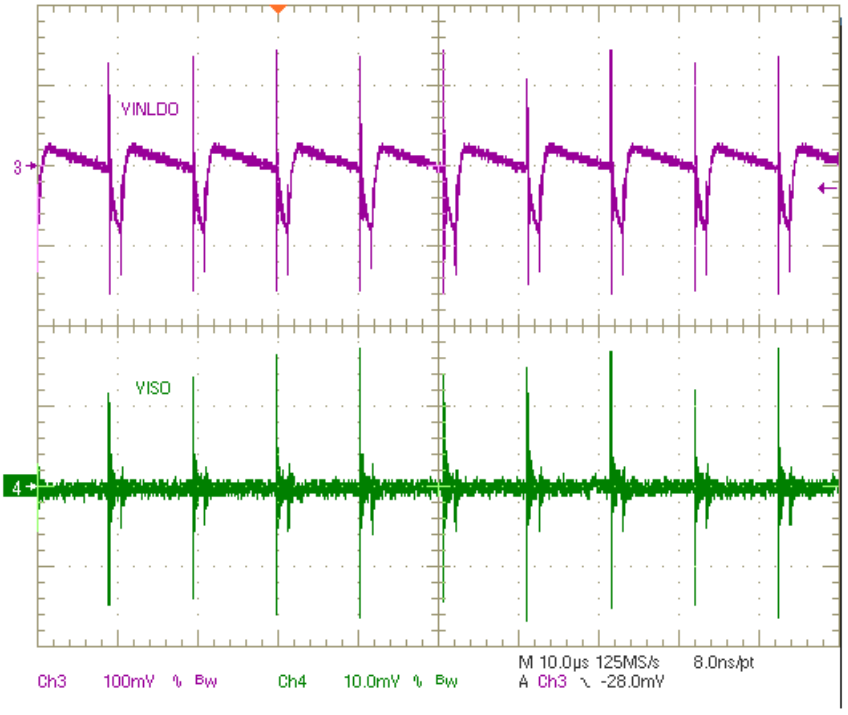




7 Isolated Output Ripple and LDO IN ripple

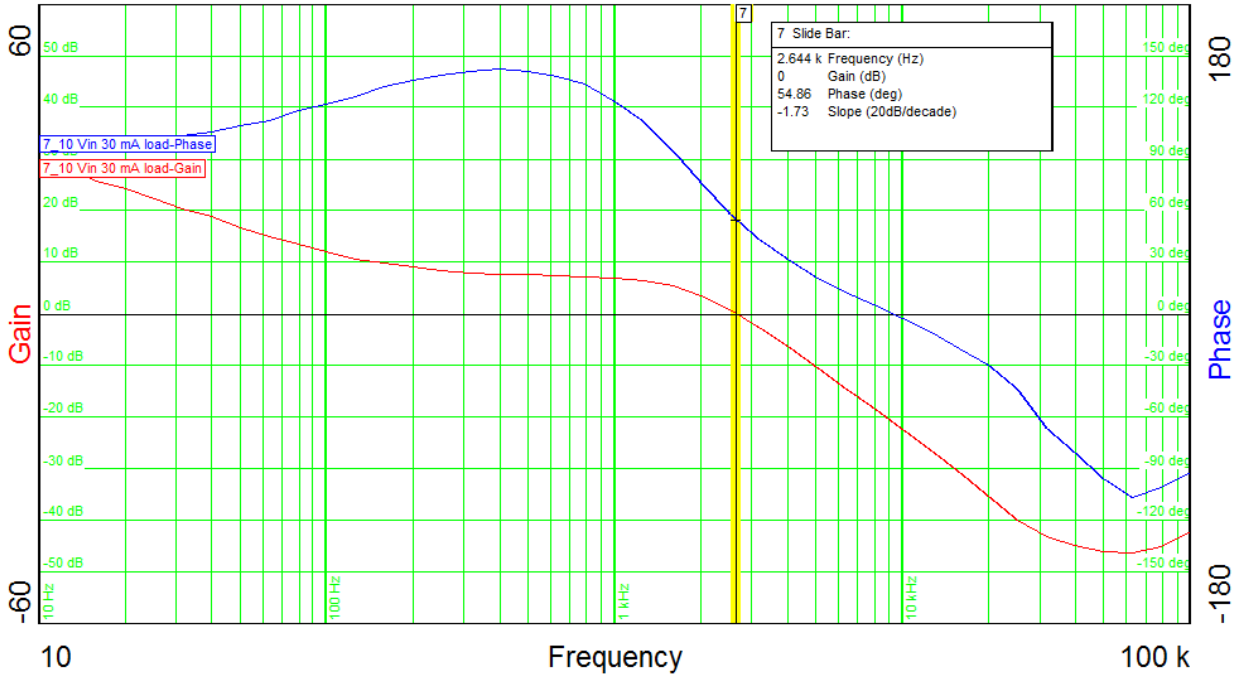
The following images show the isolated output ripple at max load with Vin = 10 V and Vin = 24 V. (Channel 3 = LDO IN pin AC coupled, Channel 2 = VISO at TP3 AC coupled)

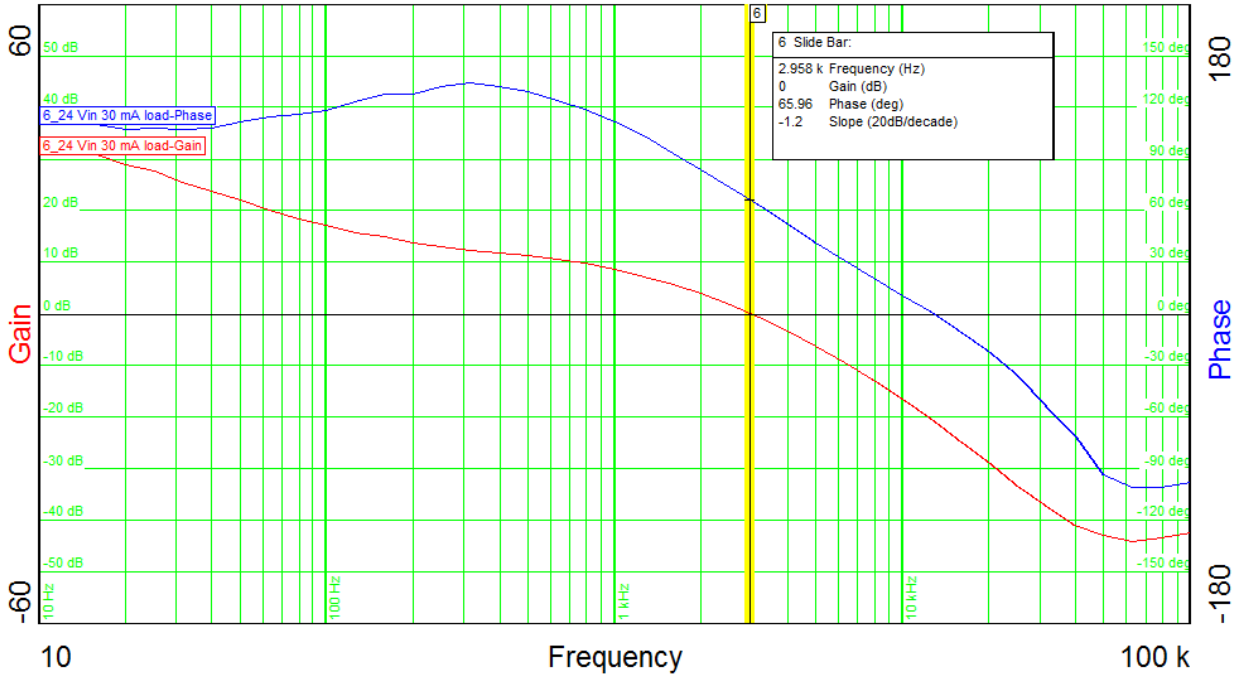




8 Loop Response

The following images show the loop response at max load with Vin = 10 V and Vin = 24 V.





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