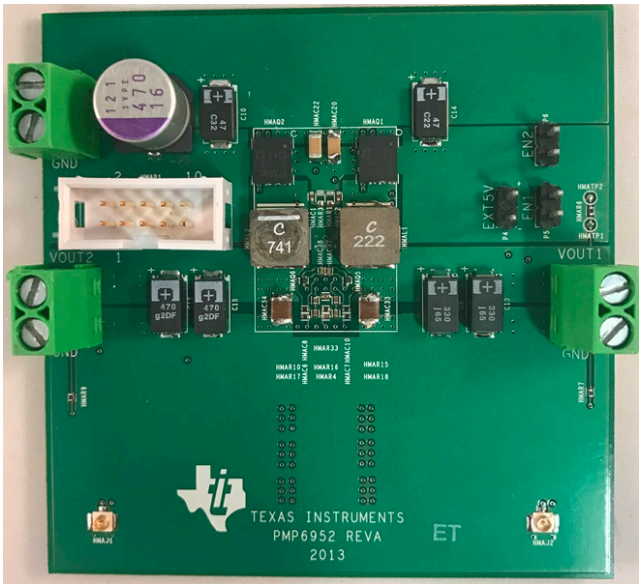
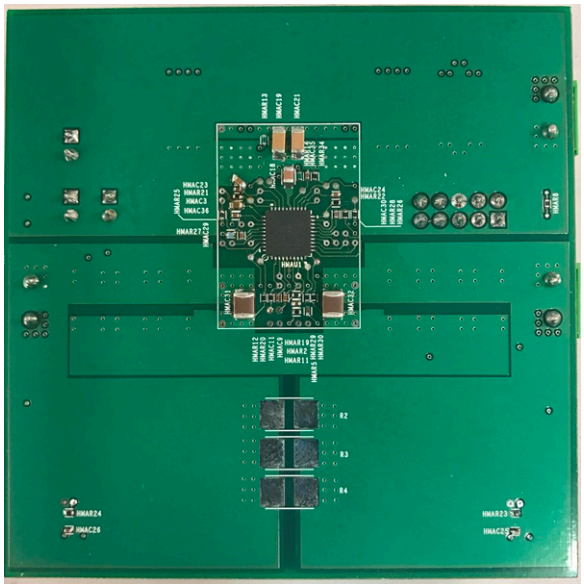
PMP6952 Rev A Test Results

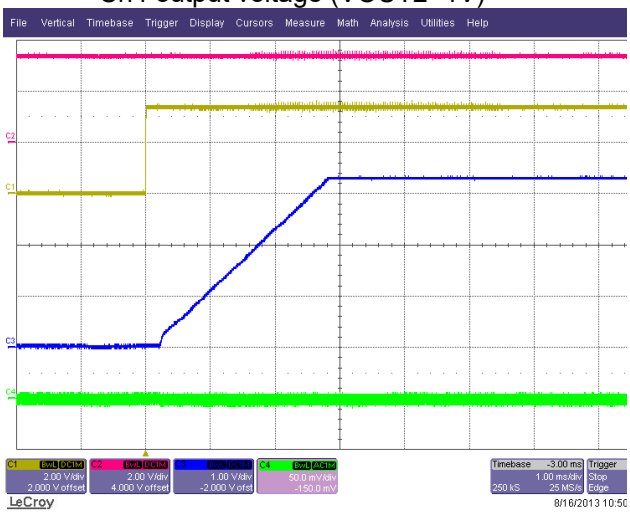
Photo of the prototype





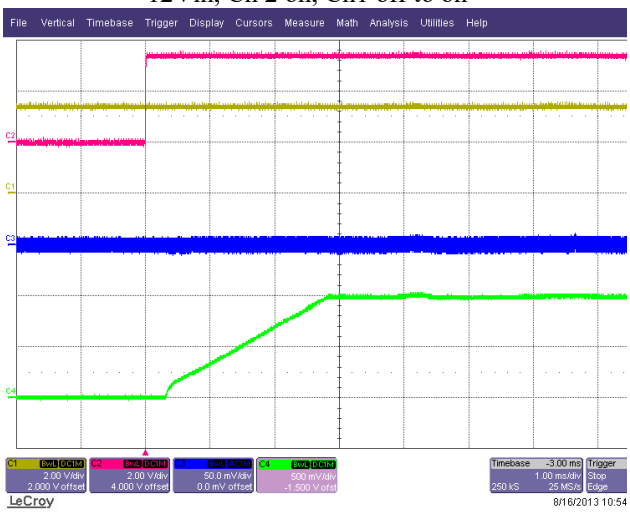
1 Startup and shutdown

- Ch1 enable signal EN1
- Ch2 enable signal EN2
- Ch3 output voltage (VOUT1=3.3V)
- Ch4 output voltage (VOUT2=1V)

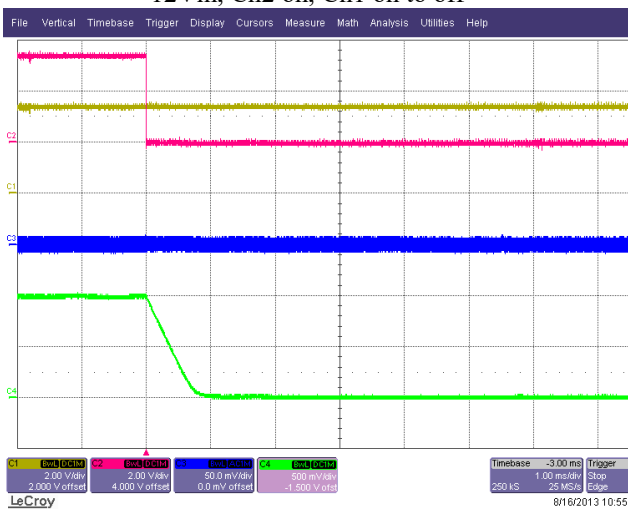


12Vin, Ch 2 on, Ch1 off to on

12Vin, Ch2 on, Ch1 on to off



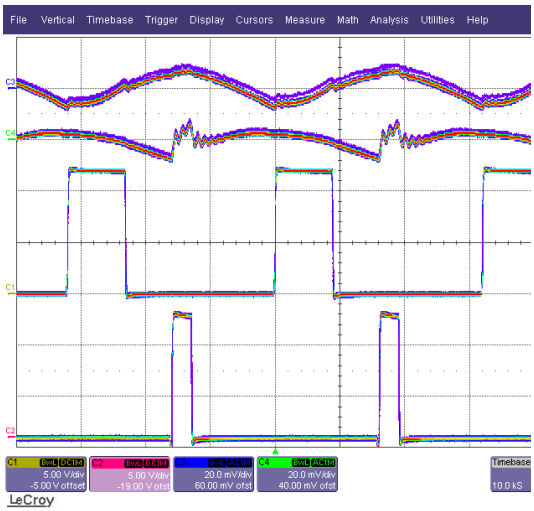
12Vin, Ch1 on, Ch2 off to on



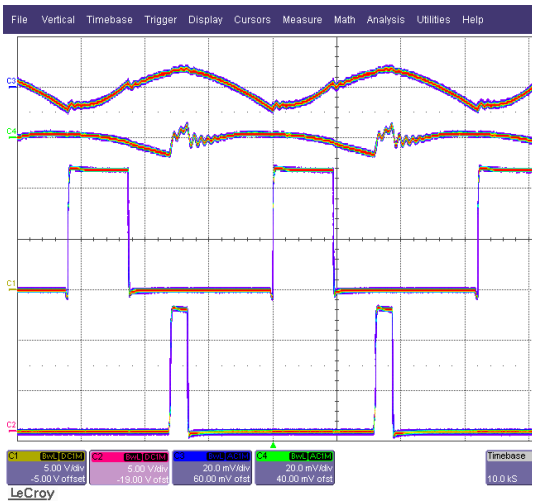
12Vin, Ch1 on, Ch2 on to off

2 Output Ripple

- Ch1 Switch-node (3.3V)
- Ch3 Output voltage (AC coupling)
- Ch2 Switch-node (1V)
- Ch4 Output voltage (AC coupling)



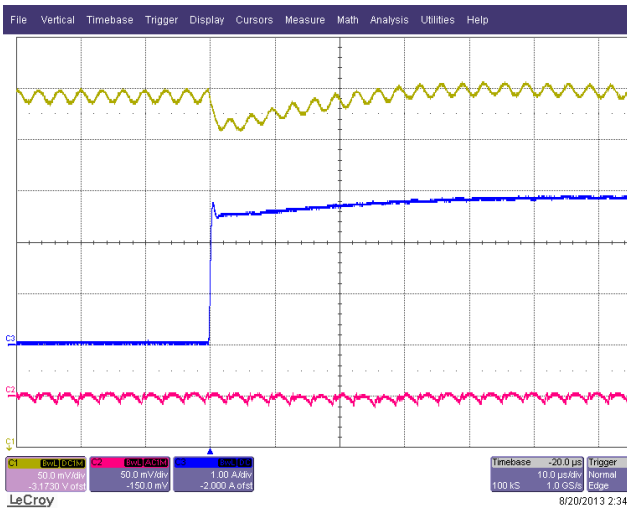
12Vin, Ch1 at 3.3V/1.2A, Ch2 at 1V/15A (Cout2=2x 100uF, 6.3V, 1210+2x470uF, 4V, 10mohm, 7343), VOUT2=16mVpp



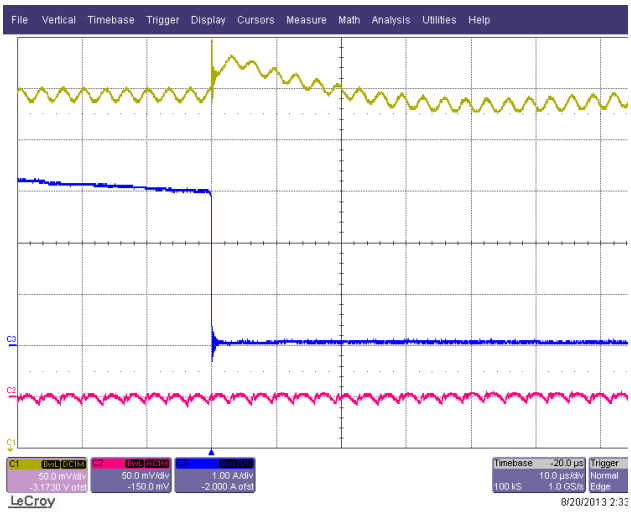
12Vin, Ch1 at 3.3V/12A, Ch2 at 1V/1.5A (Cout1=2x 100uF, 6.3V, 1210+2x330uF, 6.3V, 45mohm, 7343), VOUT1=20mVpp

3 Transient

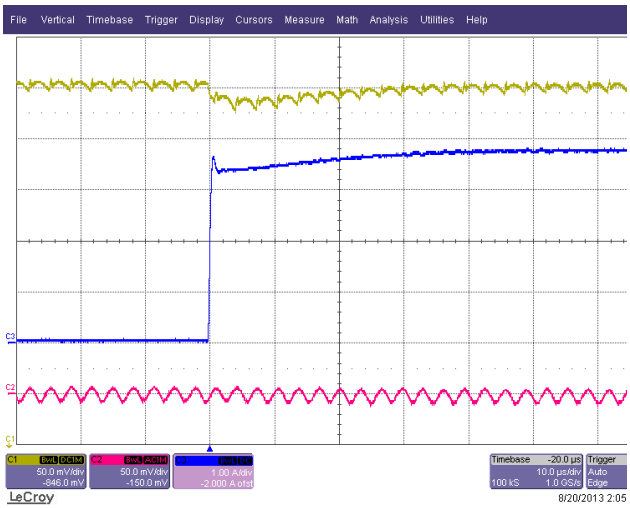
- Output voltage of channel undergoing transient test (DC coupling)
- Output voltage of channel with static load (AC coupling)
- Transient current



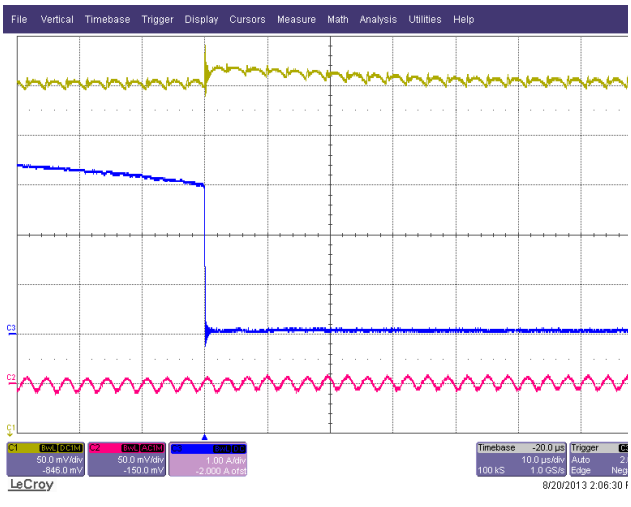
12Vin, Ch1 3.3V/9A to 12A Load Step, Ch2 1V/7.5A static load (-30mV)



12Vin, Ch1 3.3V/12A to 9A Load Step, Ch2 1V/7.5A static load (+30mV)



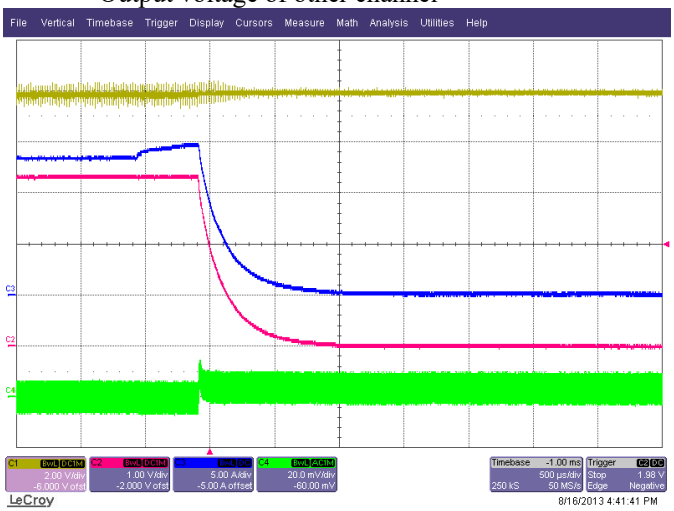
12Vin, Ch2 1V/11.25A to 15A Load Step, Ch1 3.3V/6A static load (-25mV)



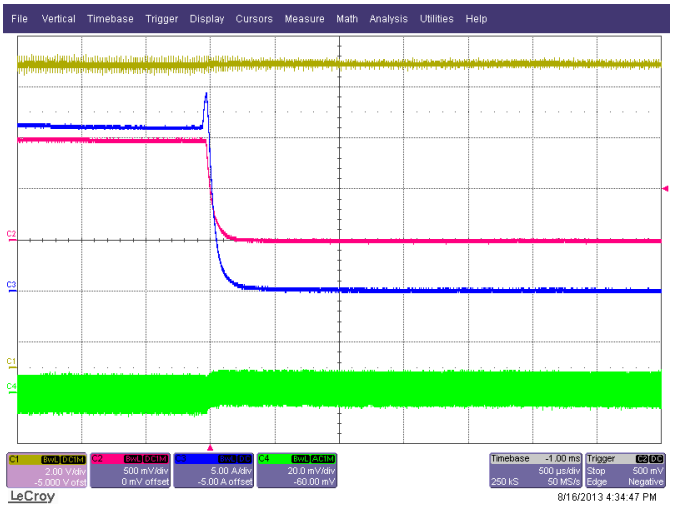
12Vin, Ch2 1V/15A to 11.25A Load Step, Ch1 3.3V/6A static load (+20mV)

4 Over-Current protection

- Input voltage
- Output voltage of channel under test
- Load current
- Output voltage of other channel



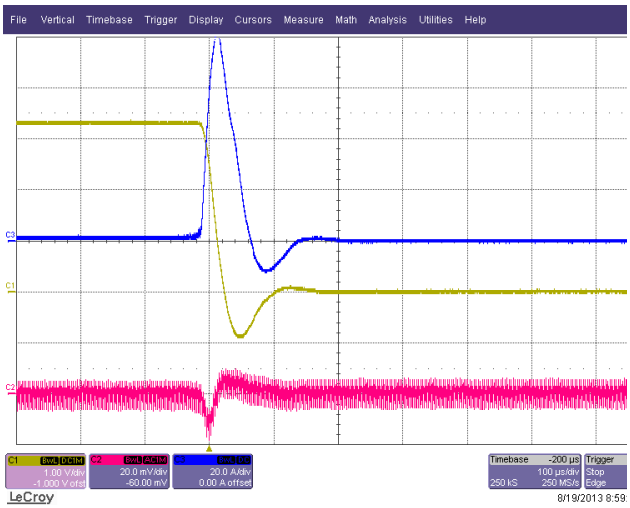
12Vin, Ch1 load regulation and over-current protection, Ch2 1V/7.5A load



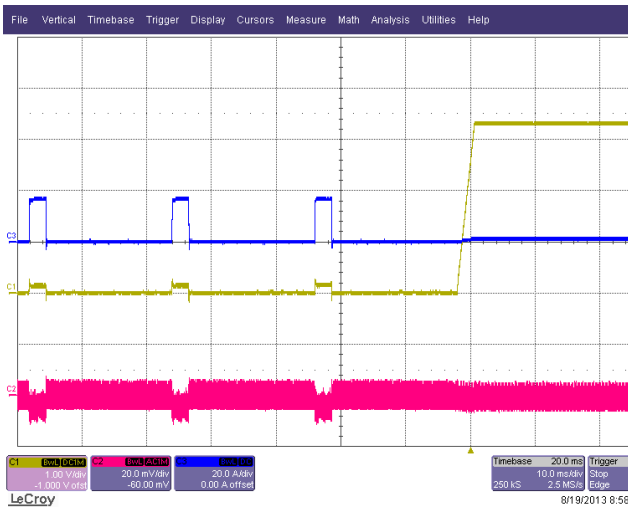
12Vin, Ch2 load regulation and over-current protection, Ch1 3.3V/6A load

5 Short-Circuit Protection

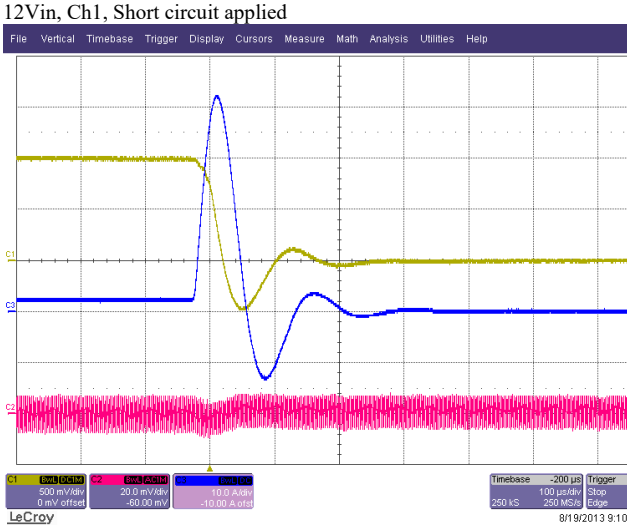
- Output voltage of channel being shorted
- Output voltage of other channel
- Short-circuit current



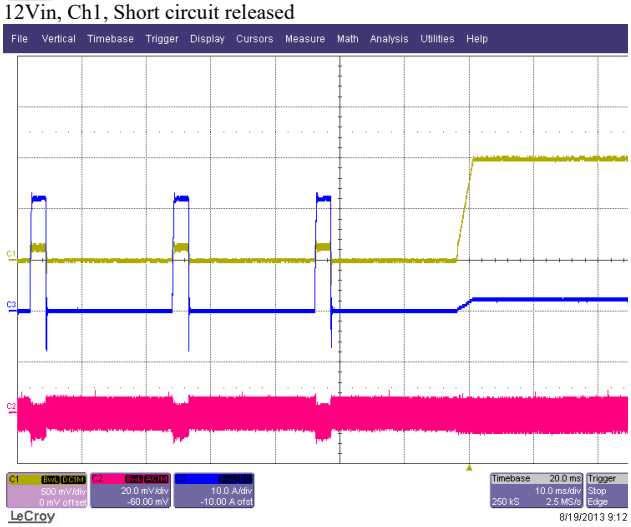
12Vin, Ch1, Short circuit applied



12Vin, Ch1, Short circuit released

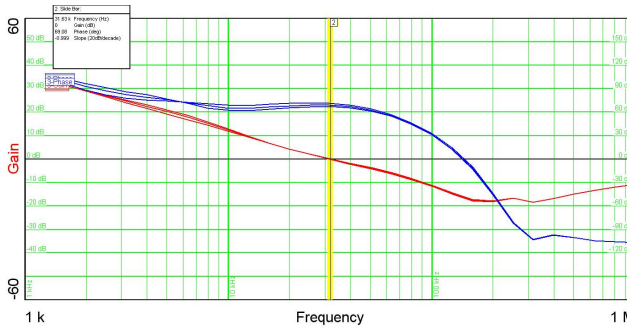


12Vin, Ch2, Short circuit applied

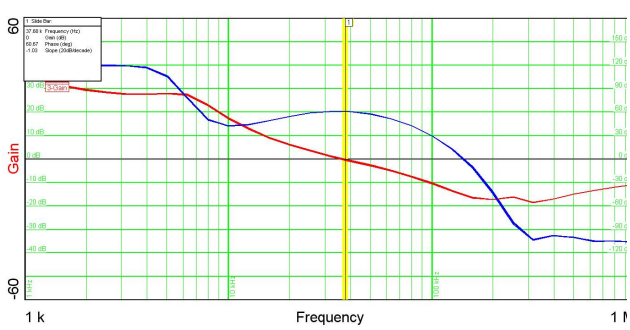


12Vin, Ch2, Short circuit released

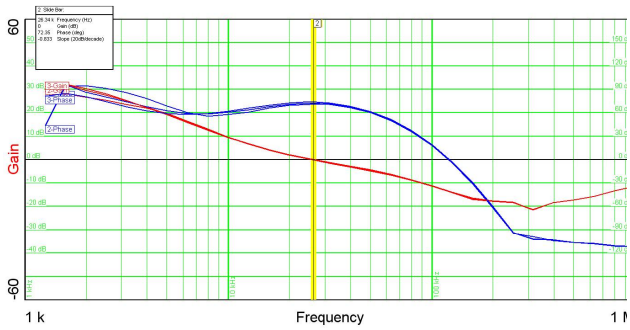
6 Bode Plot



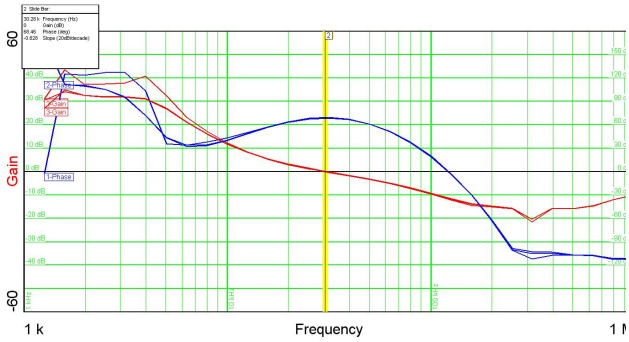
8, 10, 12Vin, 1.0Vout, 10% Load(fc=31.6k, pm=69, gm=16db)



8, 10, 12Vin, 1.0Vout, 100% Load(fc=37.7k, pm=60.7, gm=15db)

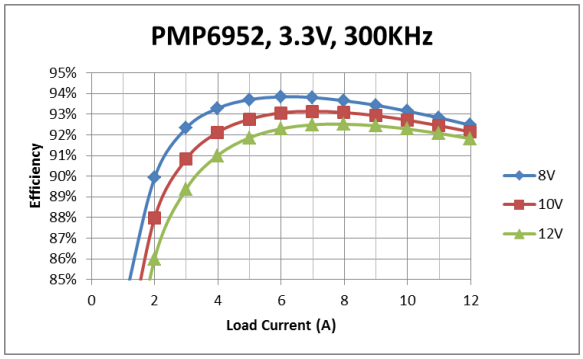


8,10,12Vin, 3.3Vout, 10% Load(fc=26.3k, pm=72.4, gm=13db)

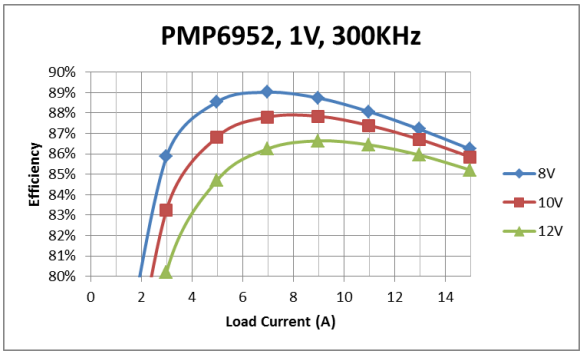


8,10,12Vin, 3.3Vout, 100% Load(fc=30.3k, pm=68.5, gm=12db)

7 Efficiency



3.3V efficiency @300kHz



1.0V efficiency @300kHz

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