

## 1 Regulation / Efficiency / Thermal

**Regulation vs. load and input:** With PFM mode disabled output is consistently between 3.230 V and 3.236 V.

**Efficiency:**  $V_{out} I_{out}$  at output terminals vs.  $V_{in} I_{in}$  at Input terminals  
Customer requirements are 90% or better at 100mA & 350mA loads at 3.4 V to 3.8 V input

Input DC volts	Input milli-amps	Output DC volts	Output milli-amps	Efficiency in percent
3.41	4.04	3.230	0	N/A
3.80	5.18	3.231	0	N/A
5.41	10	3.234	0	N/A
6.6	18	3.235	0	N/A
3.404	98.5	3.230	98.8	95.2
3.801	89.4	3.231	98.9	94.0
5.40	71.3	3.234	99.0	83.2
6.61	68.3	3.235	99.0	70.9
3.400	344.4	3.231	350.2	96.6
3.800	308.3	3.232	350.2	96.6
5.41	224.5	3.235	350.4	93.3
6.61	196.1	3.235	350.5	87.5
3.405	543	3.232	549	96.0
3.80	486	3.232	549	96.1
5.40	349	3.235	550	94.4
6.60	298	3.236	550	90.5
3.325	773	3.220 (note 1)	771	96.6
3.407	765	3.231	772	95.7
3.807	686	3.232	772	95.5
5.40	491	3.235	774	94.4
6.60	410	3.236	766	91.6

Note 1: edge of drop out 100% conduction

### Thermal at max steady state load: no air flow

6.61  $V_{in}$ , 3.236V $_{out}$  at 770mA

Max temp rise on Q1, Q2, L1: 8 degrees C

Waveforms to follow:

Section 2: Start up: page 2

Section 3: Load transients: pages 3-4

Section 4: Output ripple: page 5

Section 5: Main switching waveform: page 6

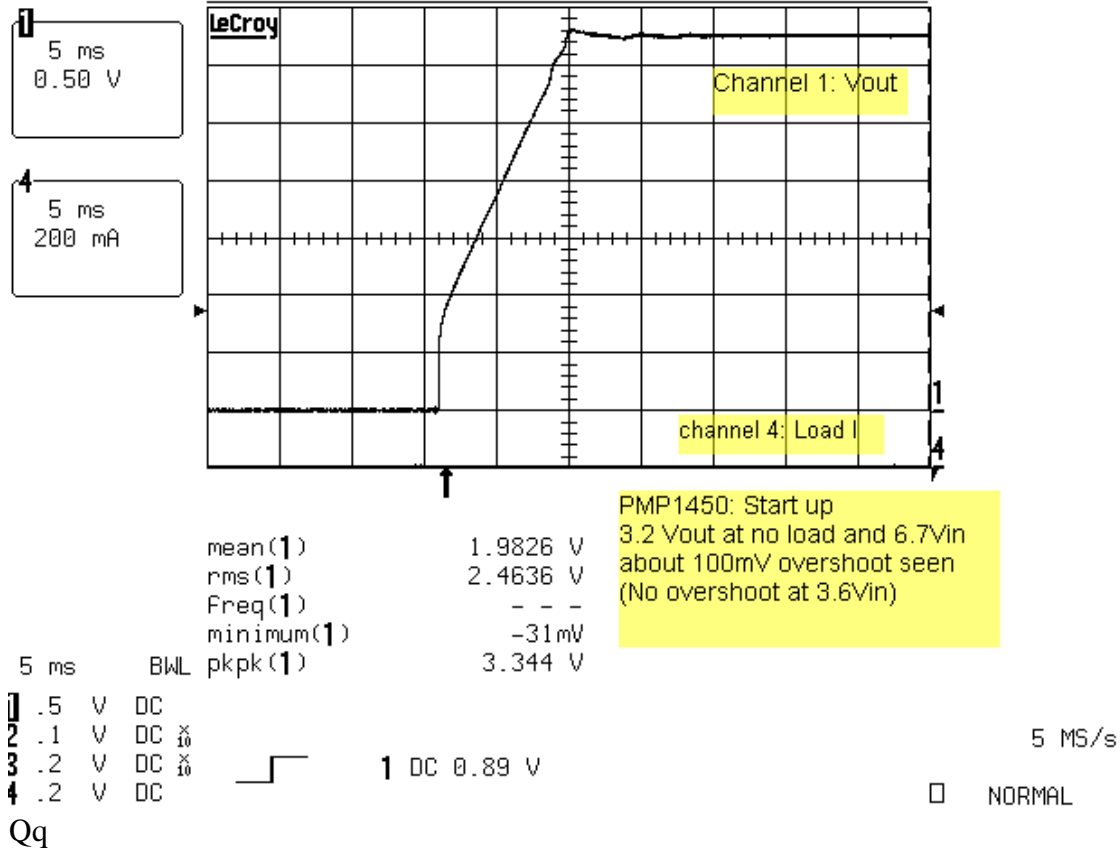
## 2 Start Up

Start up at No Load: 3.2V output off 6.7V input:

100mV overshoot seen

12-Aug-05

13:27:13

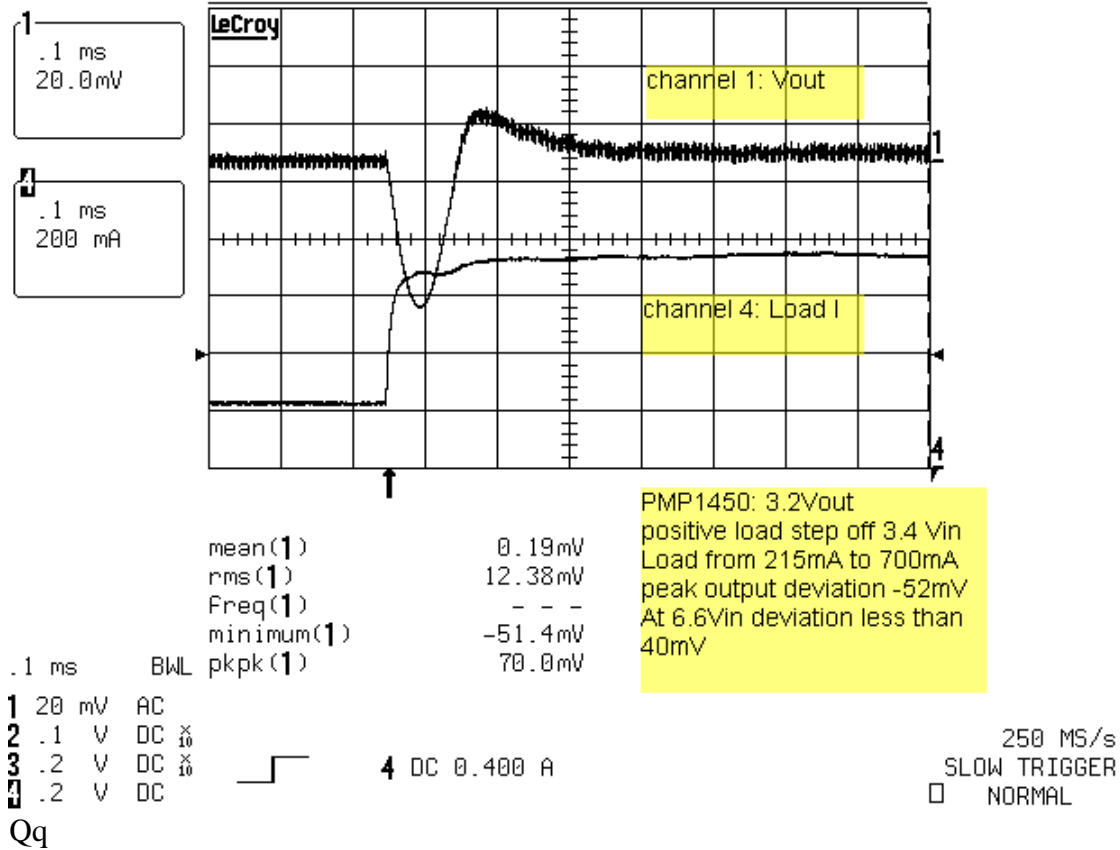


### 3 Load Transients

3.2V output off 3.4 volts input: step load from 215 mA to 700 mA:

12-Aug-05

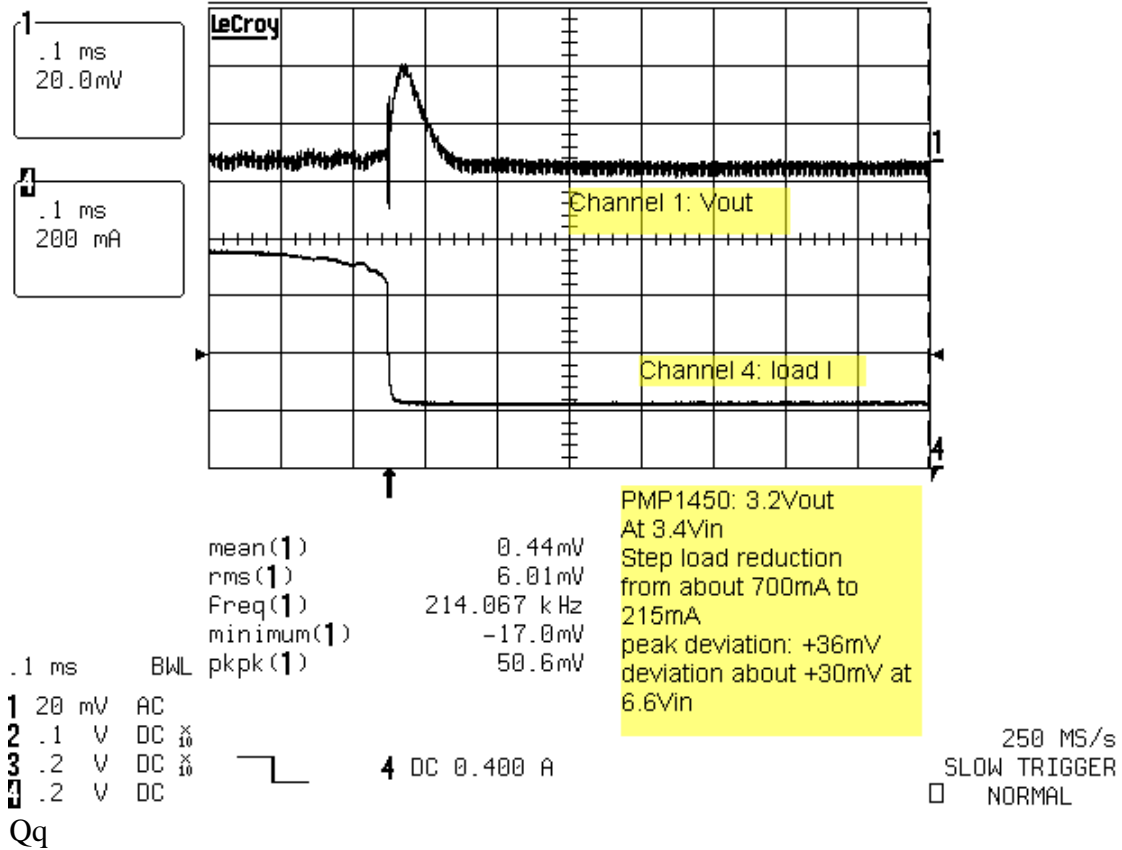
13:19:47



3.2V output off 3.4 volts input: step load reduction from 700 mA to 215 mA:

12-Aug-05

13:20:34

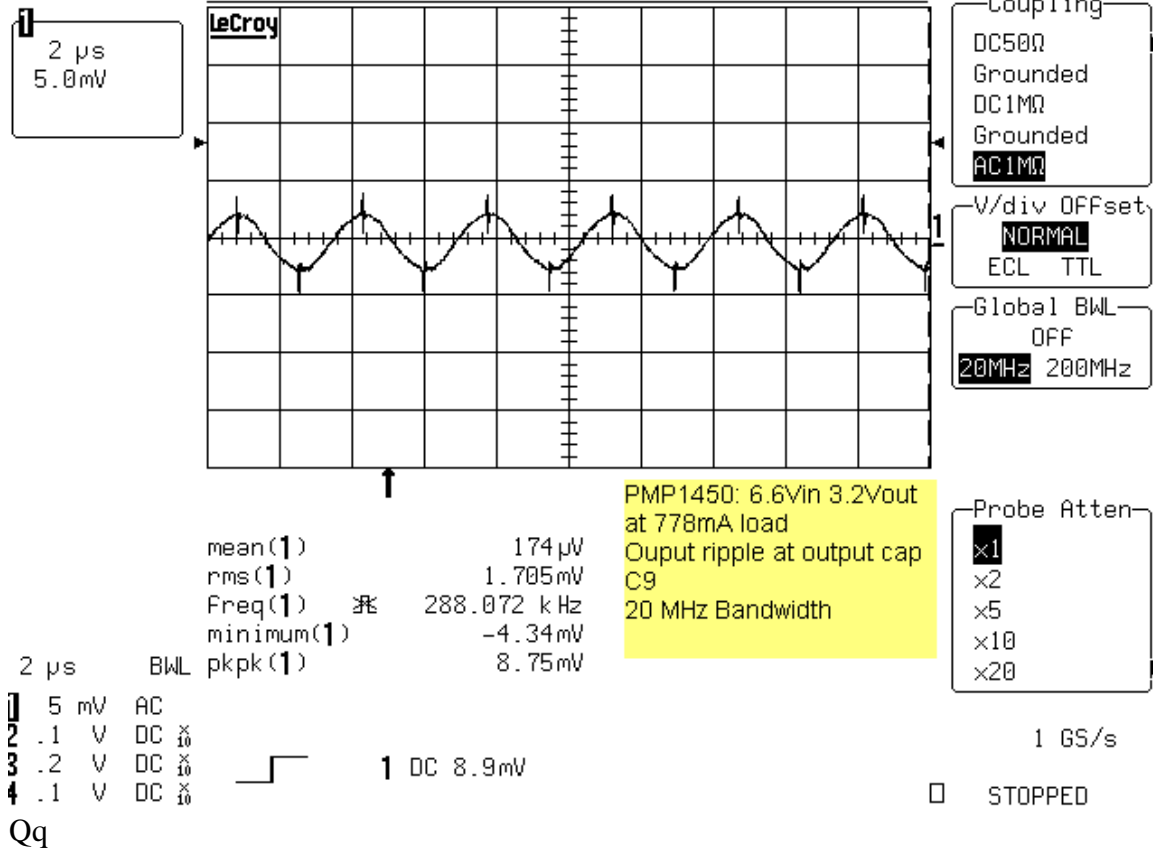


## 4 Output Ripple

Output Ripple: 3.2V at 778 mA Load off 6.6V input at output cap C9

12-Aug-05

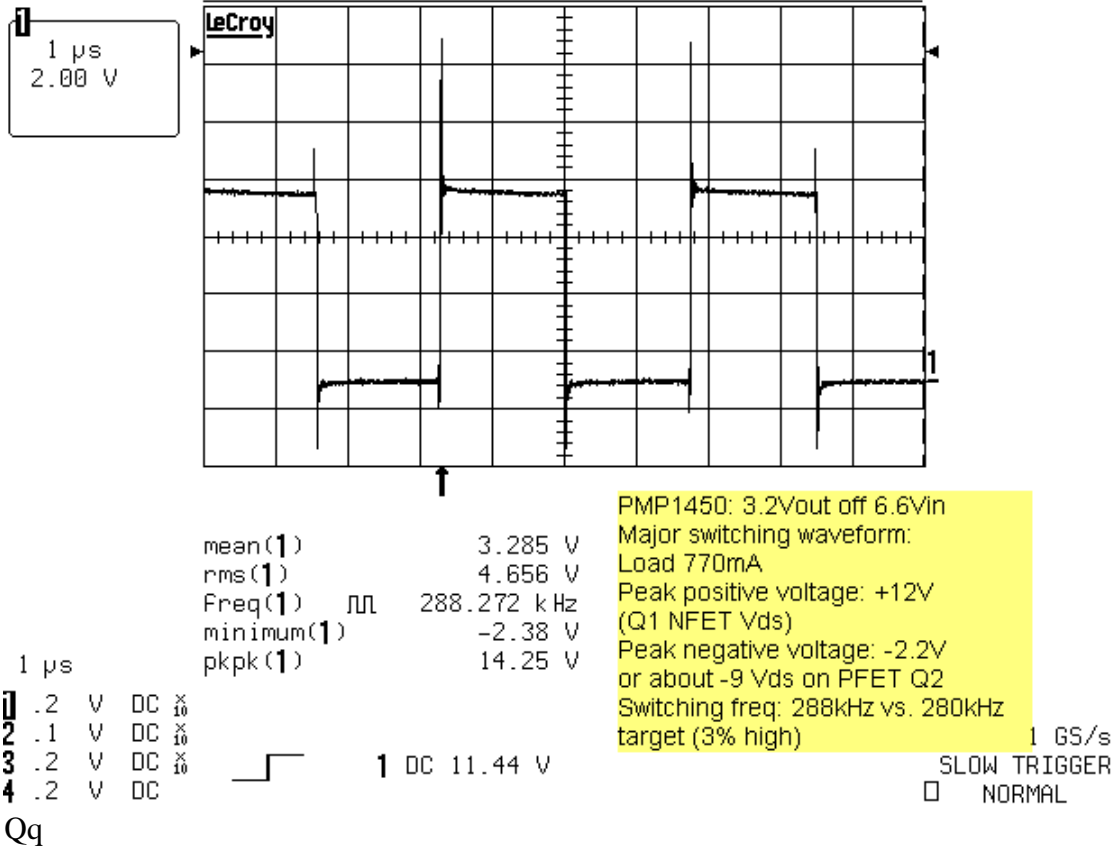
13:11:43



## 5 Major switching waveform:

Drains of Buck FET's Q1 & Q2 with respect to ground: 3.6Vin; Vout = 3.2V at 770mA

15-Aug-05  
16:11:01



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