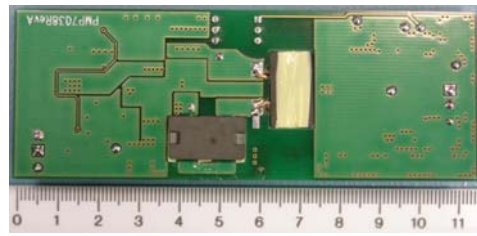


The PMP7038 is a DC/DC SMPS LLC resonant half bridge design. It has the following specification:

- 7.5W DC/DC SMPS
- Input voltage range: 4.75VDC – 5.25VDC
- Output voltage: 5V
- Output current: 1.5Amax
- Galvanic isolation: Yes 4kVrms
- Dimensions: 110mm × 40mm (only 6mm height)
- One side assembly



PCB - Top side view



PCB - Bottom side view

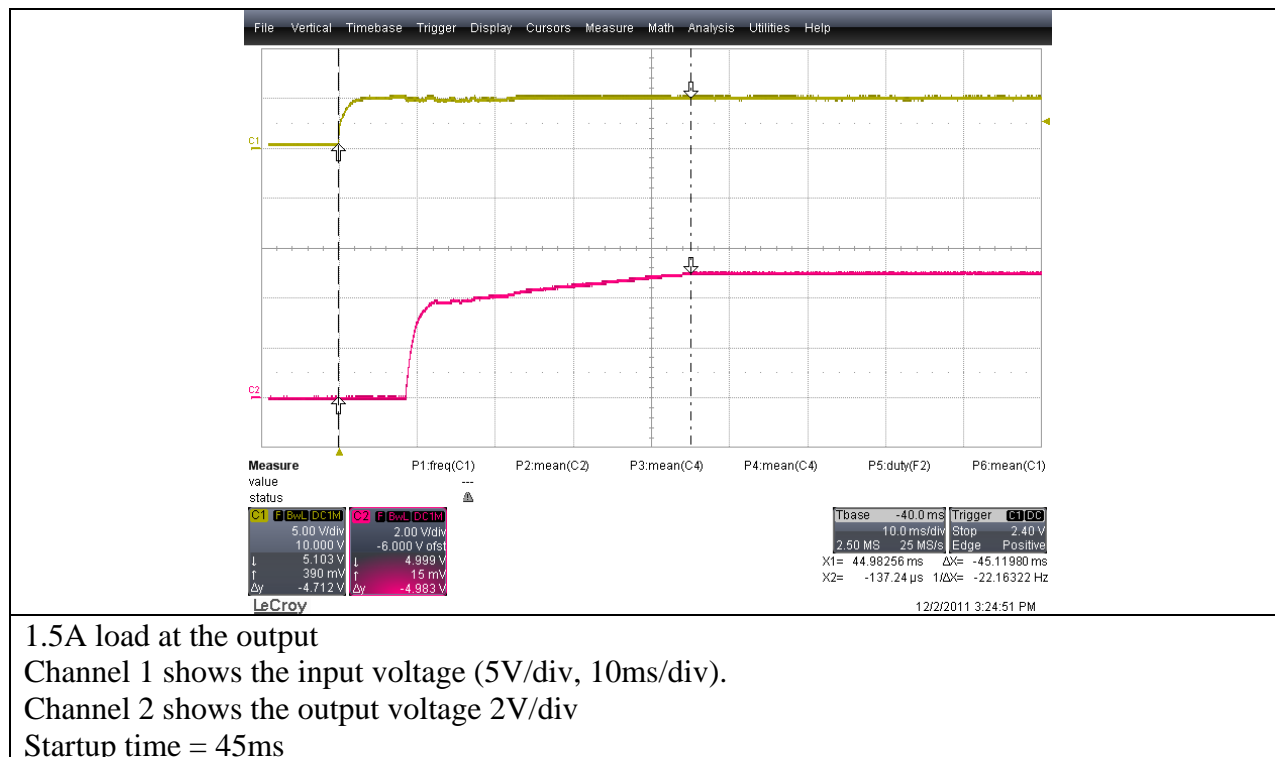


PCB - Side view

If not other described, all tests are done at 5VDC input voltage.

## 1 Startup

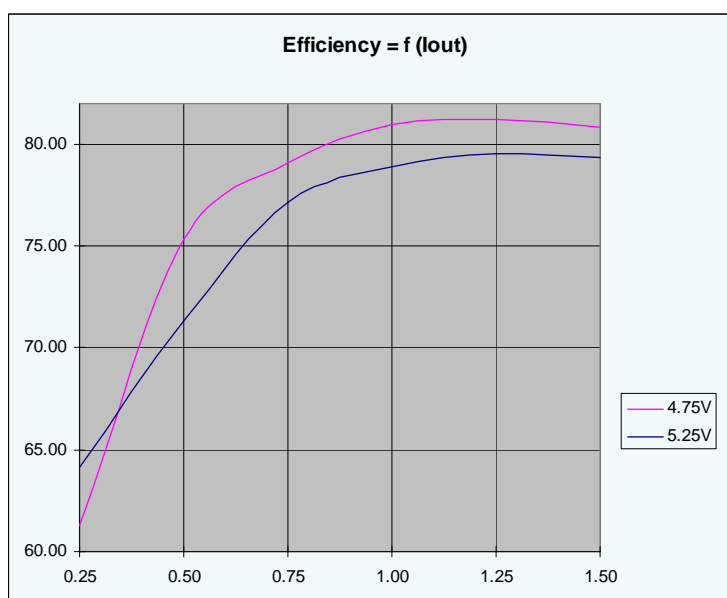
The output voltage and current at startup are shown in the image below.



## 2 Current consumption, Efficiency

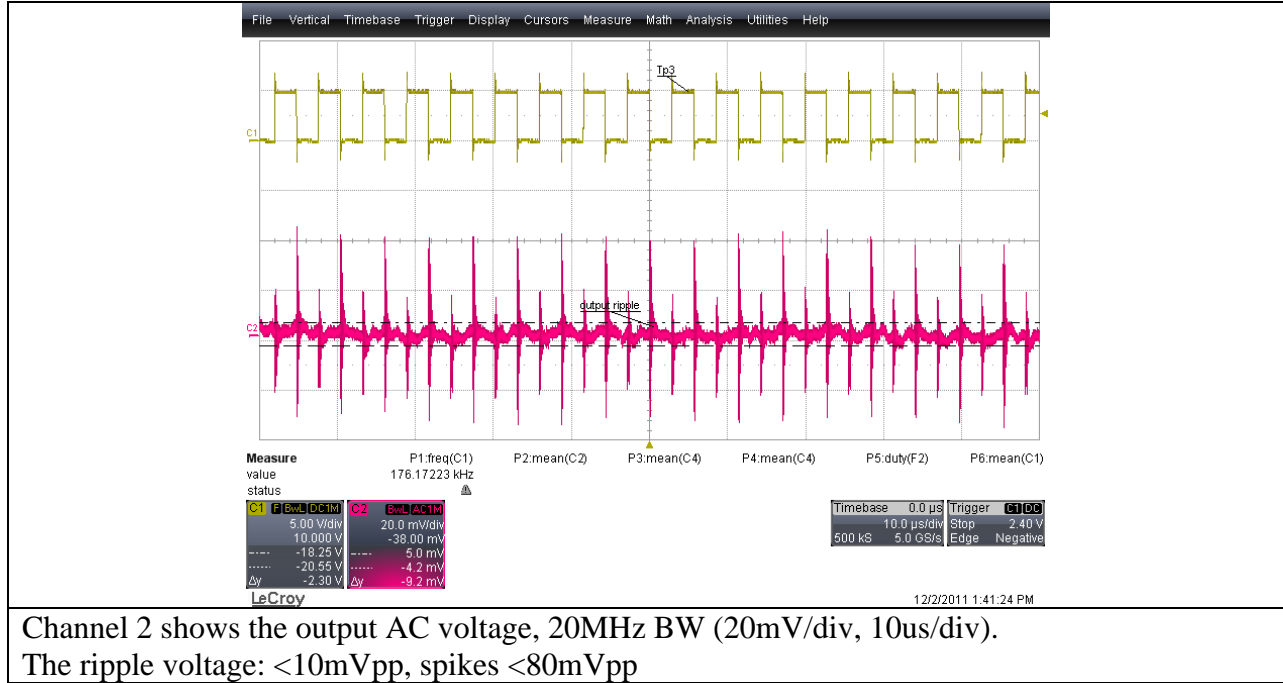
4.75V							
Uout	5.02	5.01	5.01	5.01	5.00	5.00	4.99
Iout	0.000	0.250	0.500	0.750	1.000	1.250	1.500
Pout	0.000	1.253	2.505	3.758	5.000	6.250	7.485
Uin	4.750	4.750	4.750	4.750	4.750	4.750	4.750
Iin	0.056	0.430	0.700	1.000	1.300	1.620	1.950
Pin	0.266	2.043	3.325	4.750	6.175	7.695	9.263
Plosses	0.27	0.79	0.82	0.99	1.18	1.45	1.78
Pout/Pmax %	0.00	16.70	33.40	50.10	66.67	83.33	99.80
eta	0.00	61.32	75.34	79.11	80.97	81.22	80.81

5.25V							
Uout	5.02	5.01	5.01	5.01	5.00	5.00	5.00
Iout	0.000	0.250	0.500	0.750	1.000	1.250	1.500
Pout	0.000	1.253	2.505	3.758	5.000	6.250	7.500
Uin	5.250	5.250	5.250	5.250	5.250	5.250	5.250
Iin	0.049	0.372	0.669	0.928	1.207	1.497	1.800
Pin	0.257	1.953	3.512	4.872	6.337	7.859	9.450
Plosses	0.26	0.70	1.01	1.11	1.34	1.61	1.95
Pout/Pmax %	0.00	16.70	33.40	50.10	66.67	83.33	100.00
eta	0.00	64.13	71.32	77.12	78.90	79.52	79.37



### 3 Output Ripple Voltage and current

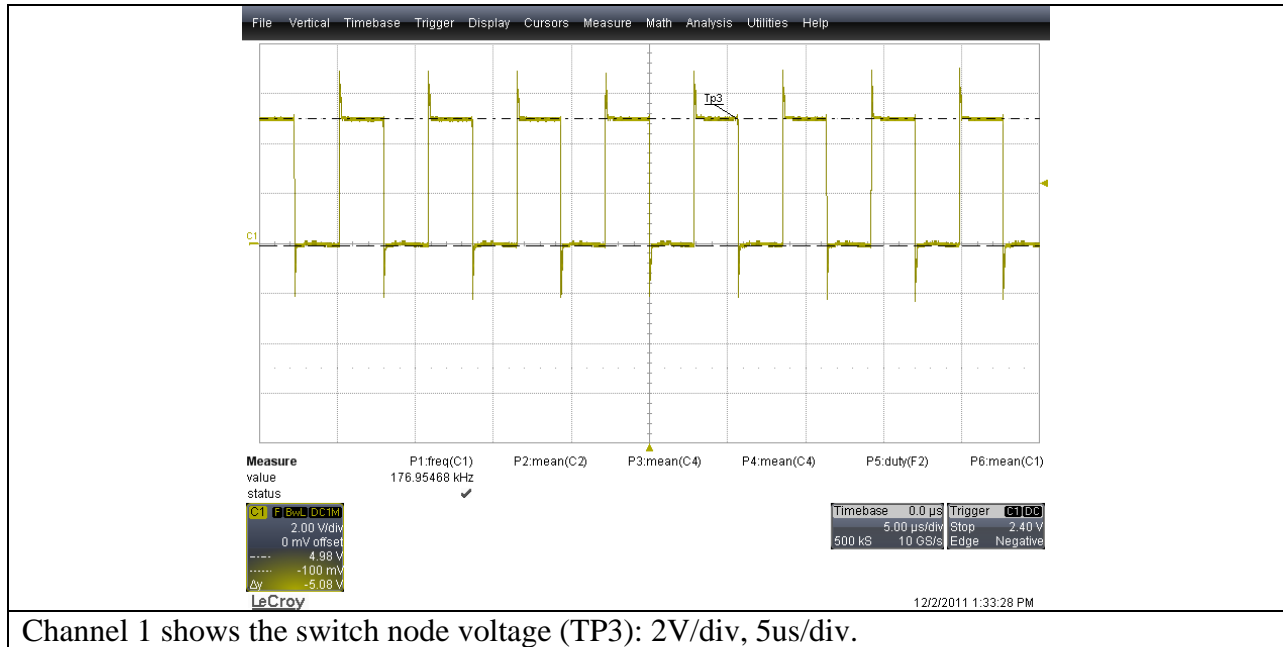
The output ripple voltage is shown in the plot below. Load 1.5A.



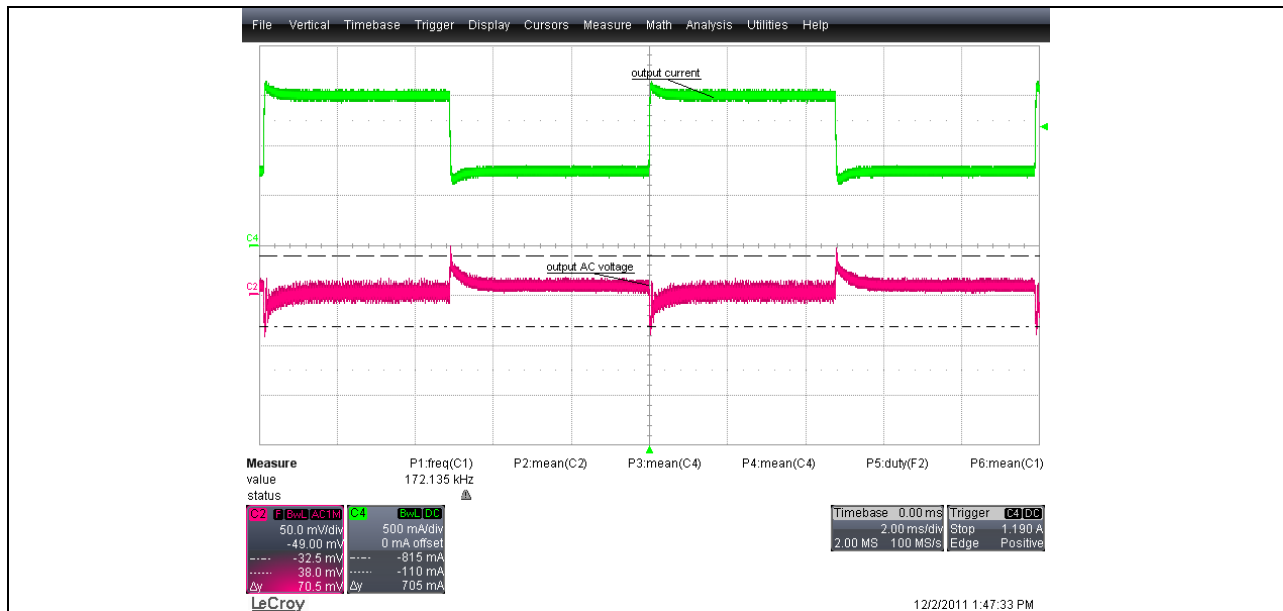
Channel 2 shows the output AC voltage, 20MHz BW (20mV/div, 10us/div).  
The ripple voltage: <10mVpp, spikes <80mVpp

### 4 Switching Node Waveform

The image below shows the drain- source voltage.

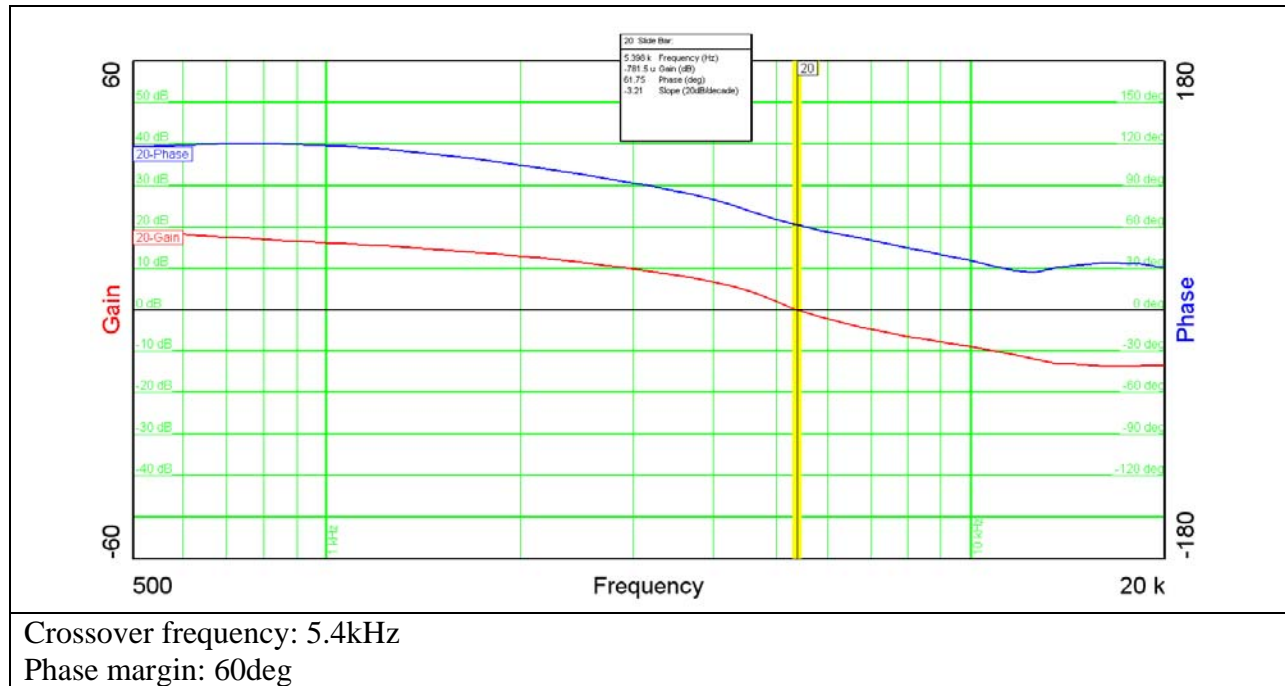


### 5 Load step response

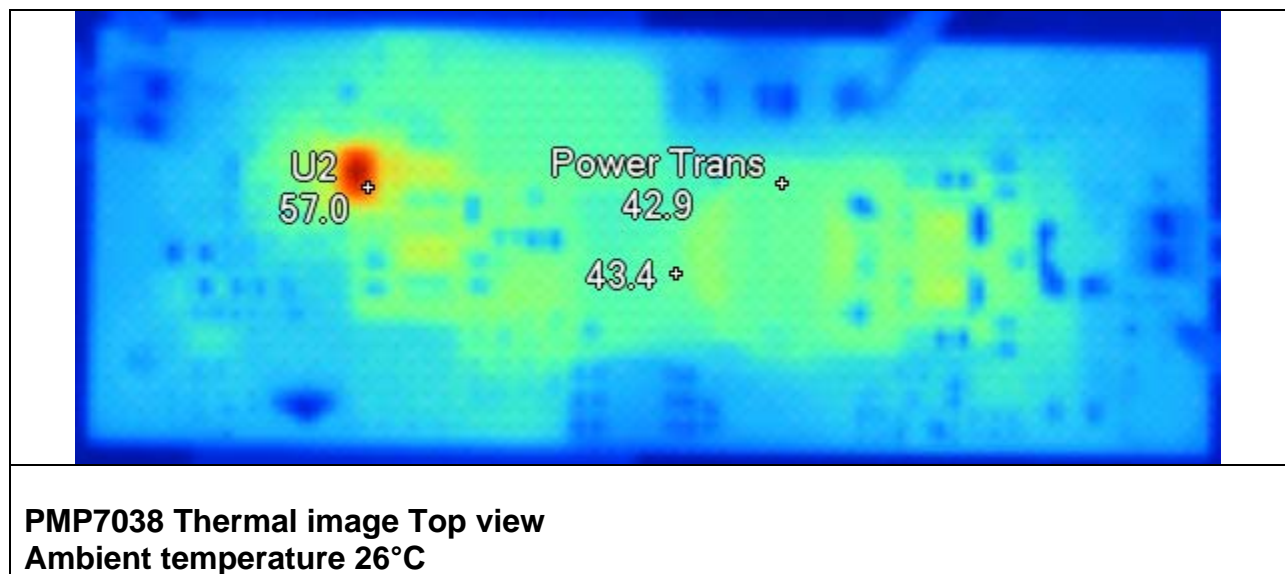


## 6 Loop Response

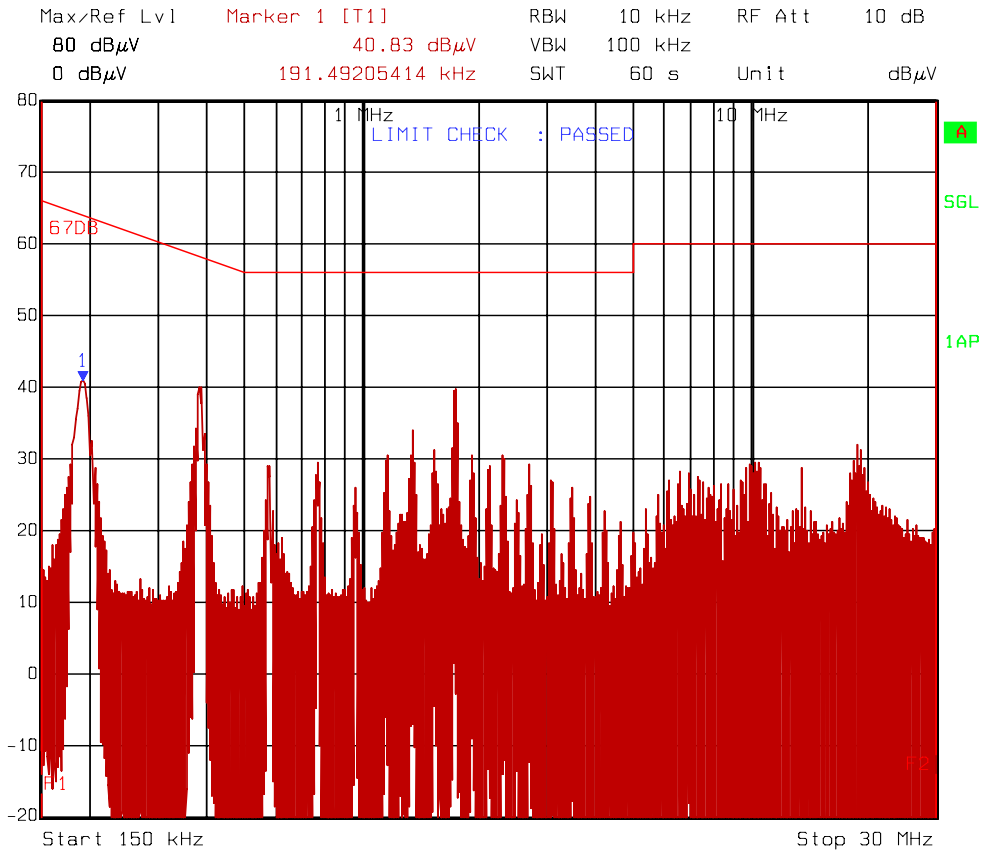
Measured Bode plot below



## 7 Thermal Image



### 8 EMI Measurements



Title: FF1o1  
Date: 2.DEC.2011 13:24:44

**Conducted emission measurements on output – Not agency approved**  
**Uin = 5VDC**  
**Iout = 1.5A**

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