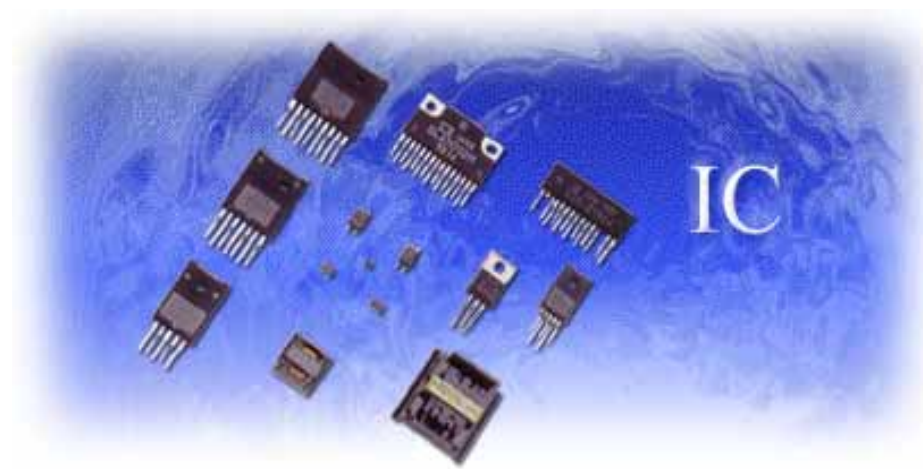


# SSC9502S

## Proposal Report



|                         |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| <b>Contents</b>         | <b>Output: 24V/6A,12V/3A<br/>Input: 282Vac (400Vdc)<br/>Pout= 180W</b> |
| <b>Applicatio<br/>n</b> |                                                                        |
| <b>Master</b>           | <b>Sato</b>                                                            |
| <b>Checked b<br/>y</b>  | <b>Wu</b>                                                              |
| <b>Checked b<br/>y</b>  | <b>Chao</b>                                                            |
| <b>Written By</b>       | <b>C Chang</b>                                                         |
| <b>Date</b>             | <b>2008 / 06 / 19</b>                                                  |

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## Efficiency & Temperature Check

### Efficiency check

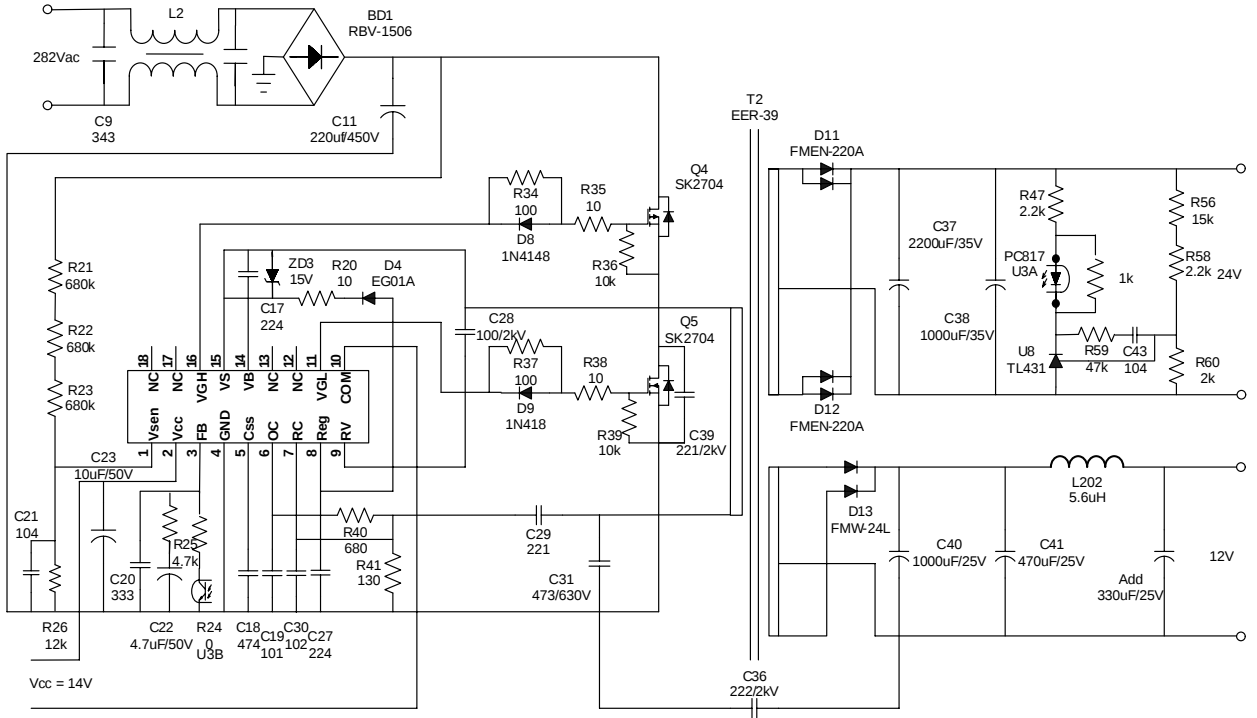
| VinAC(V)<br>( ) | VoutDC(V) | Iout<br>(A) | VoutDC(V)<br>( ) | Iout<br>(A) | Pout<br>(W) | Pin<br>(W) | Eff.<br>(%) |
|-----------------|-----------|-------------|------------------|-------------|-------------|------------|-------------|
|                 | 24V       |             | 12V              |             |             |            |             |
| 282             | 23.99     | 6           | 11.73            | 3           | 179.13      | 196.07     | 91.4        |

### Temperature check

Ta = 25

|                    |          |     |
|--------------------|----------|-----|
| VinAC(V)           |          | 282 |
| Bridge Diode( )    |          | 55  |
| IC body( )         |          | 44  |
| High side MOS( )   |          | 55  |
| Low side MOS( )    |          | 57  |
| Transformer<br>( ) | 1st wire | 44  |
|                    | 2st wire | 49  |
|                    | core     | 43  |
| 24V Diode<br>( )   | D11      | 53  |
|                    | D12      | 48  |
| 12V Diode( )       | D13      | 37  |

# Circuit diagram



## Transformer specification

Hybrid IC: SSC9502S

Input range: 282Vac

Output power: 180W (24V/6A,12V/3A)

Transformer:

Core: EER-40

Lp : 470uH

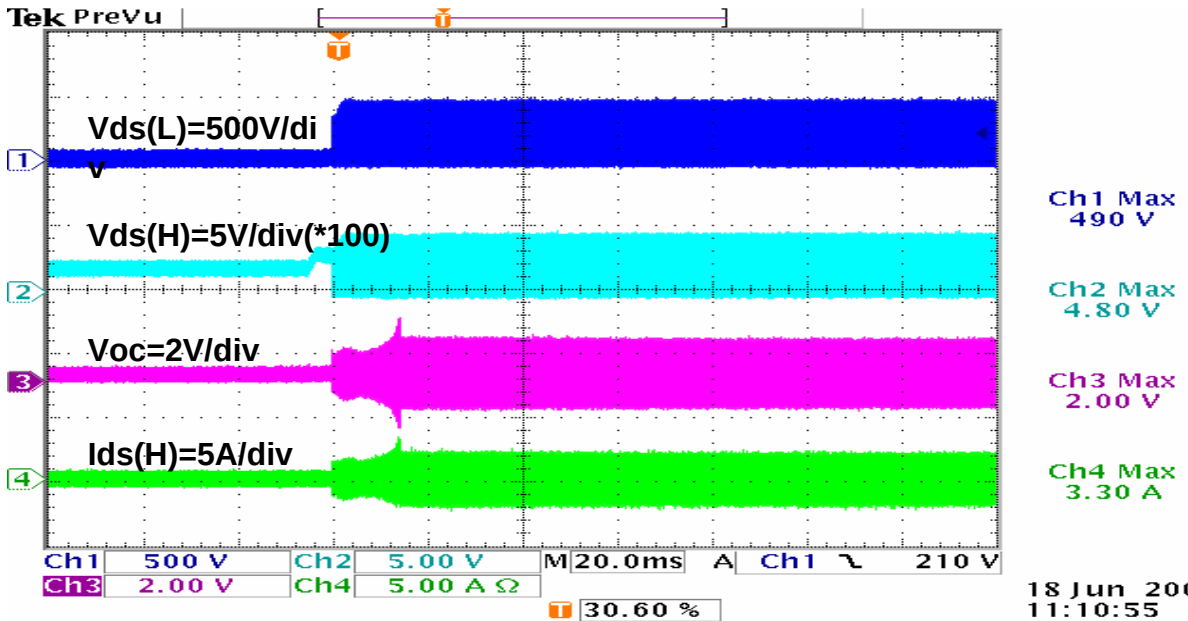
Gap: 0.4mm

Lr : 107uH

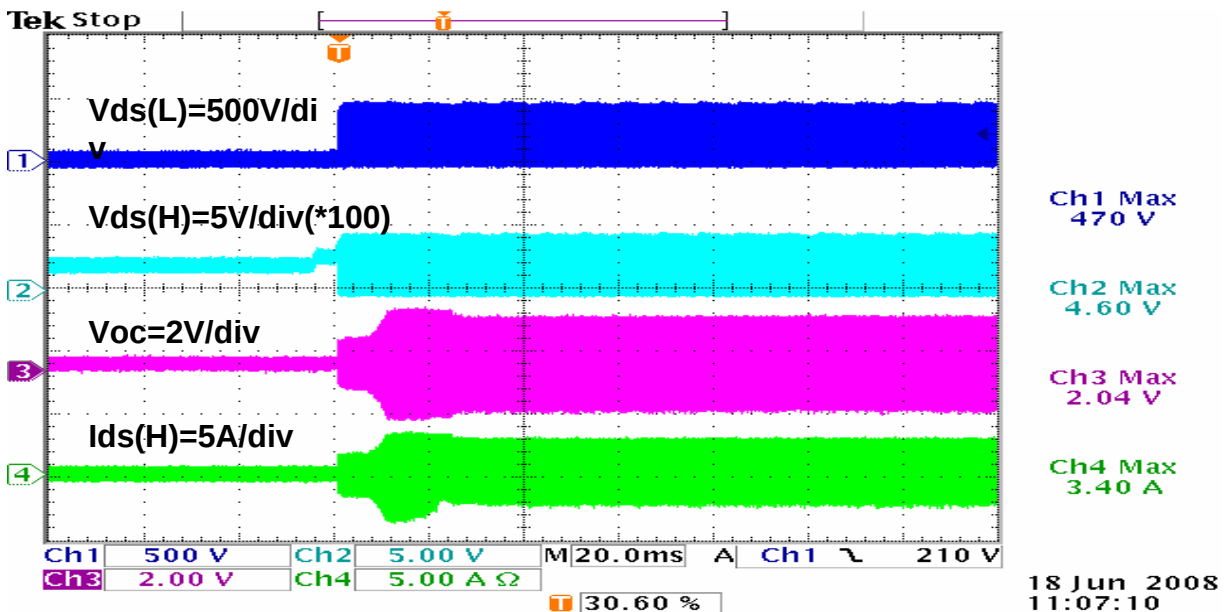
| Name      |        | Mark | Turn (T) | Wire (mm) | Winding type |
|-----------|--------|------|----------|-----------|--------------|
| Primary   |        | P1   | 36       | 0.1Ø*80   | Solenoid     |
| Secondary | 24V/6A | S1   | 4        | 0.1Ø*120  | Solenoid     |
|           | 12V/3A | S2   | 4        | 0.1Ø*80   | Solenoid     |
|           | 24V/6A | S1'  | 2        | 0.1Ø*120  | Solenoid     |
|           | 12V/6A | S2'  | 2        | 0.1Ø*80   | Solenoid     |

## start-up waveforms check

No load (24V/0A,12V/0A)

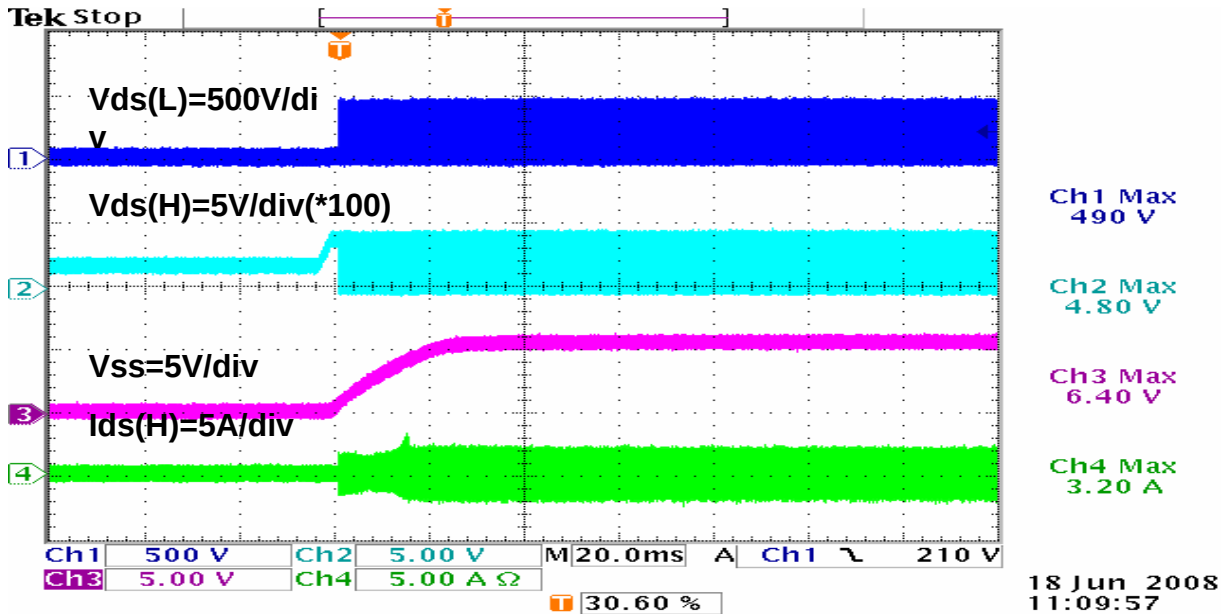


Max load (24V/6A,12V/3A)

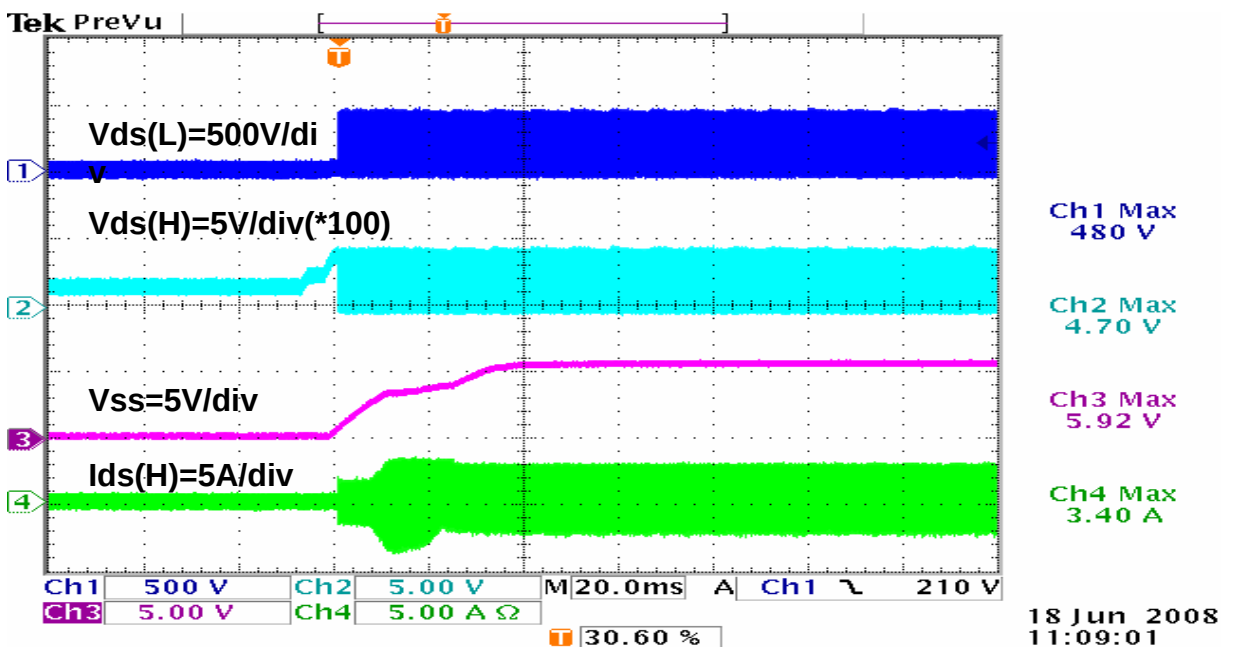


# start-up waveforms check

No load (24V/0A,12V/0A)

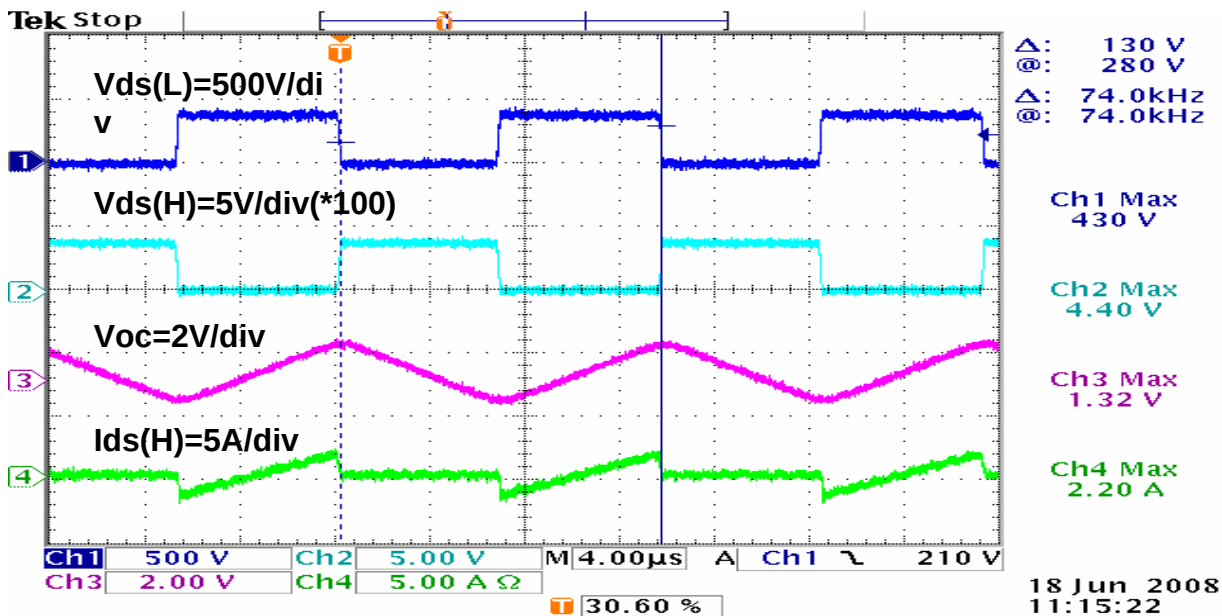


Max load (24V/6A,12V/3A)

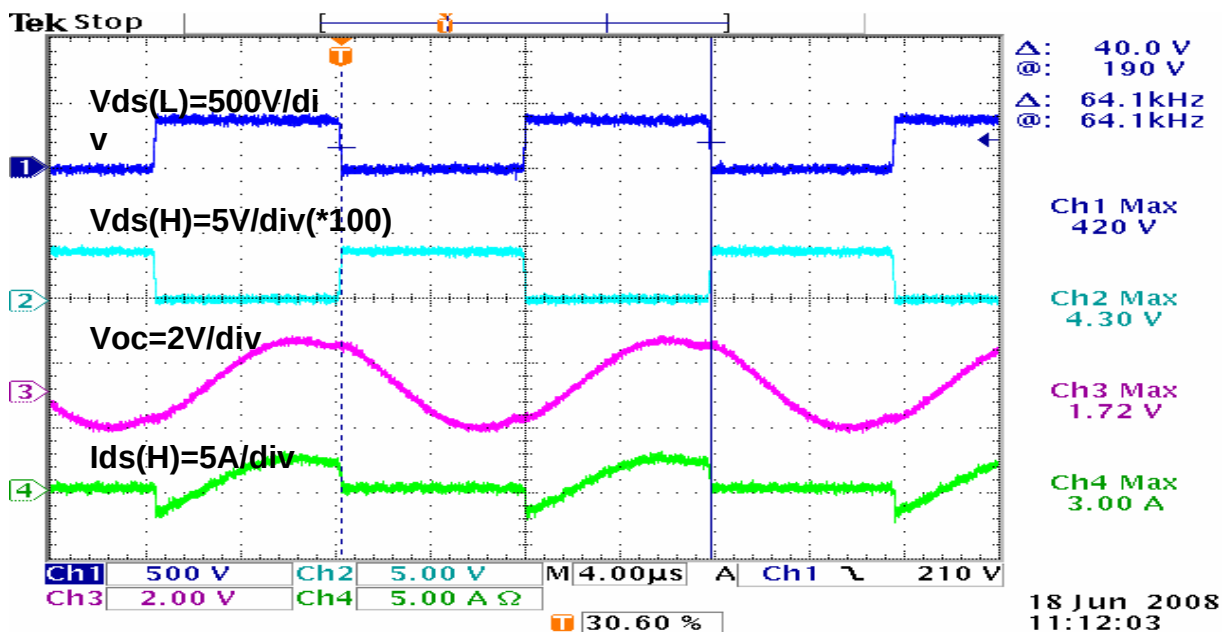


## OC pin waveforms check

No load (24V/0A,12V/0A)

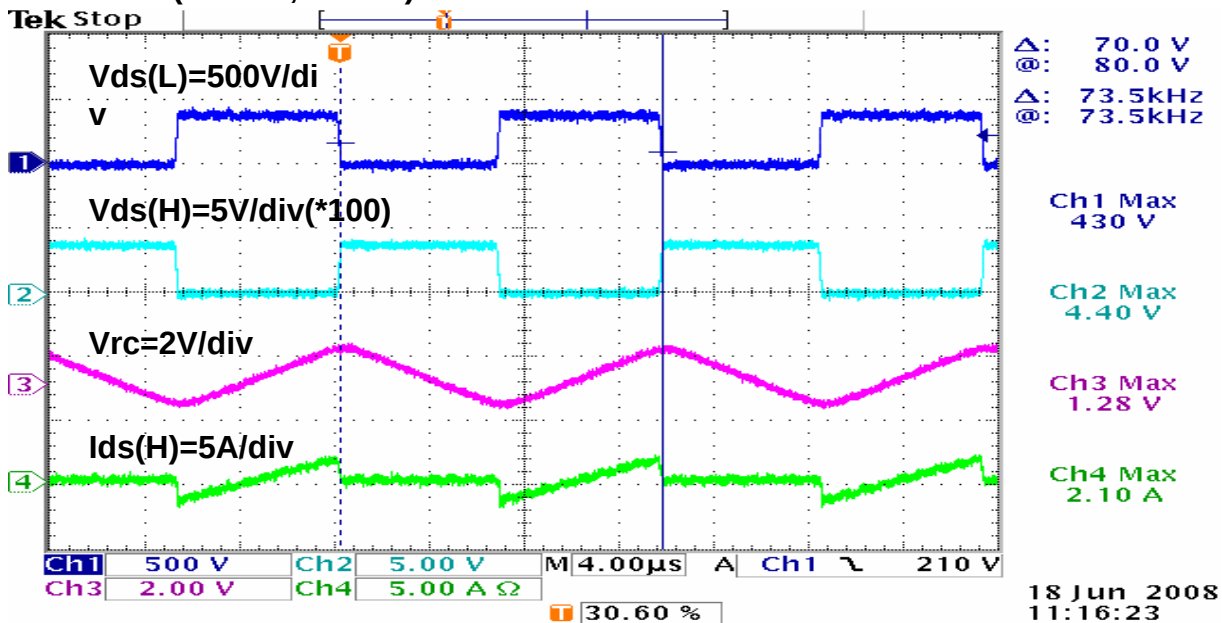


Max load (24V/6A,12V/3A)

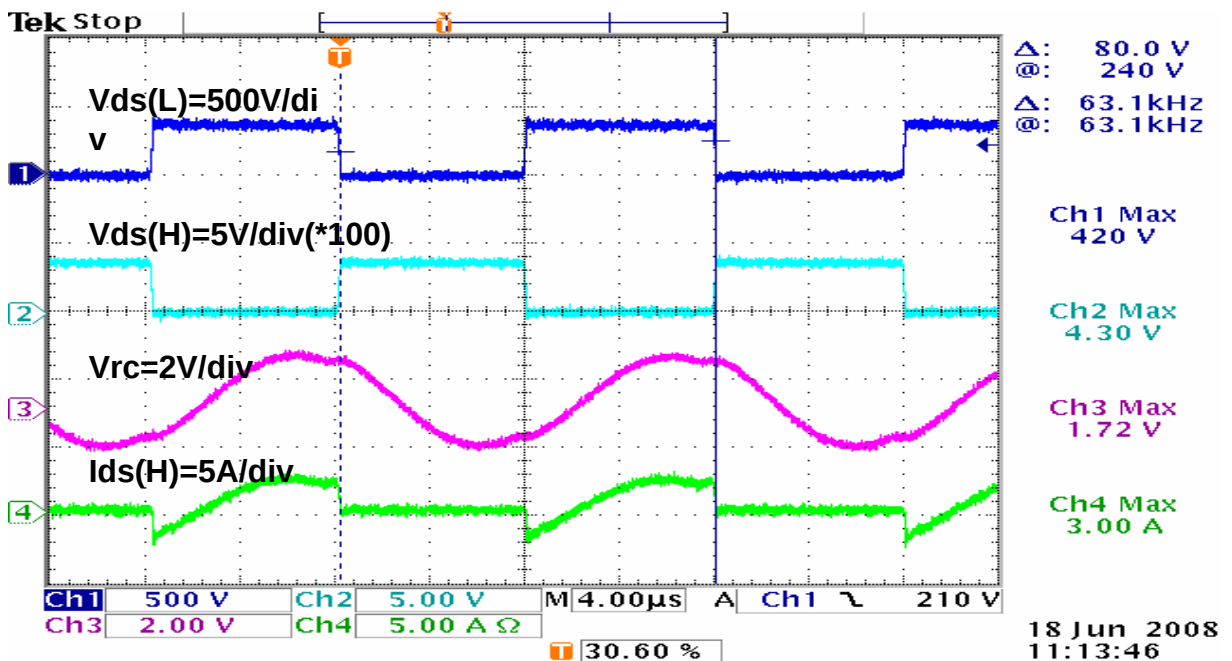


## RC pin waveforms check

No load (24V/0A,12V/0A)

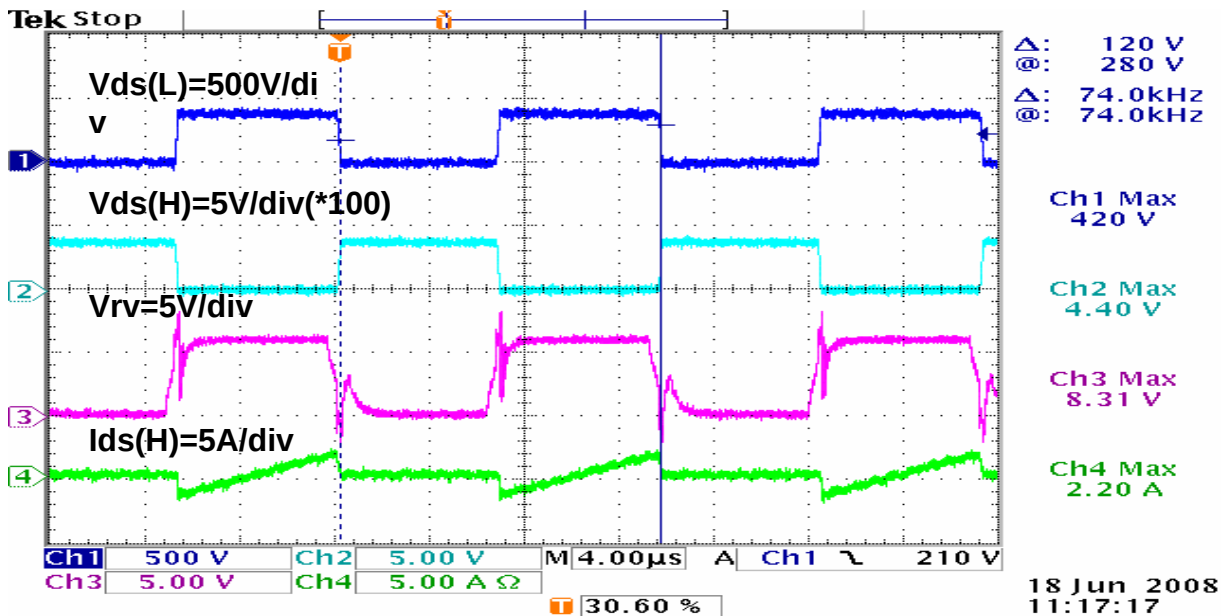


Max load (24V/6A,12V/3A)

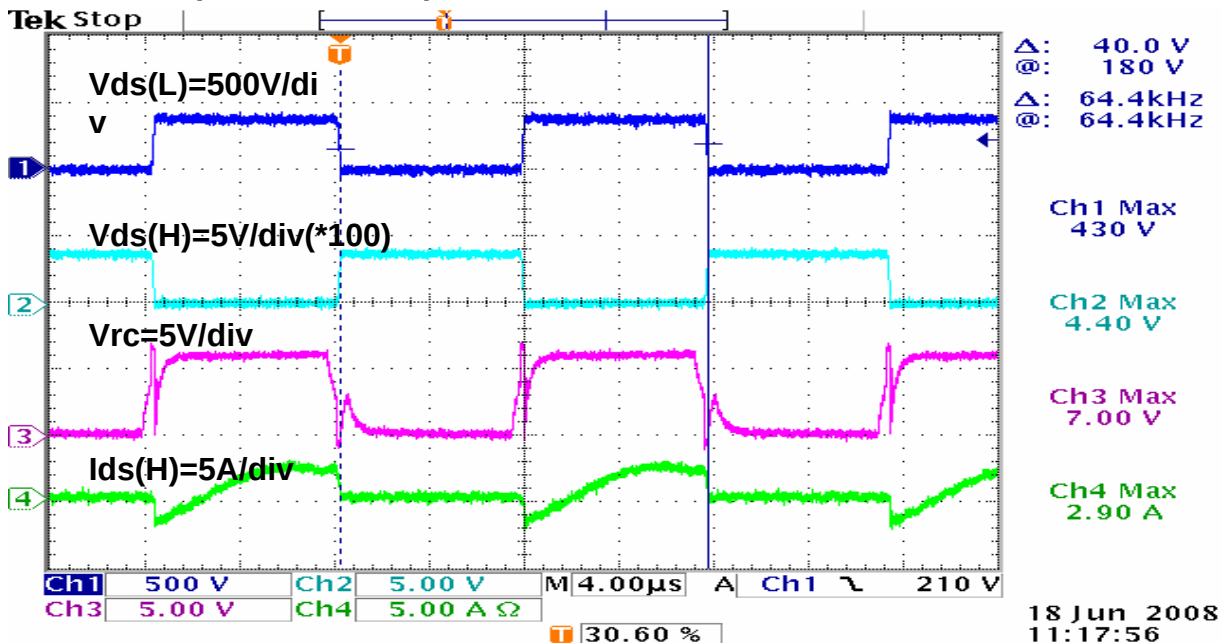


## RV pin Waveforms check

No load (24V/0A,12V/0A)

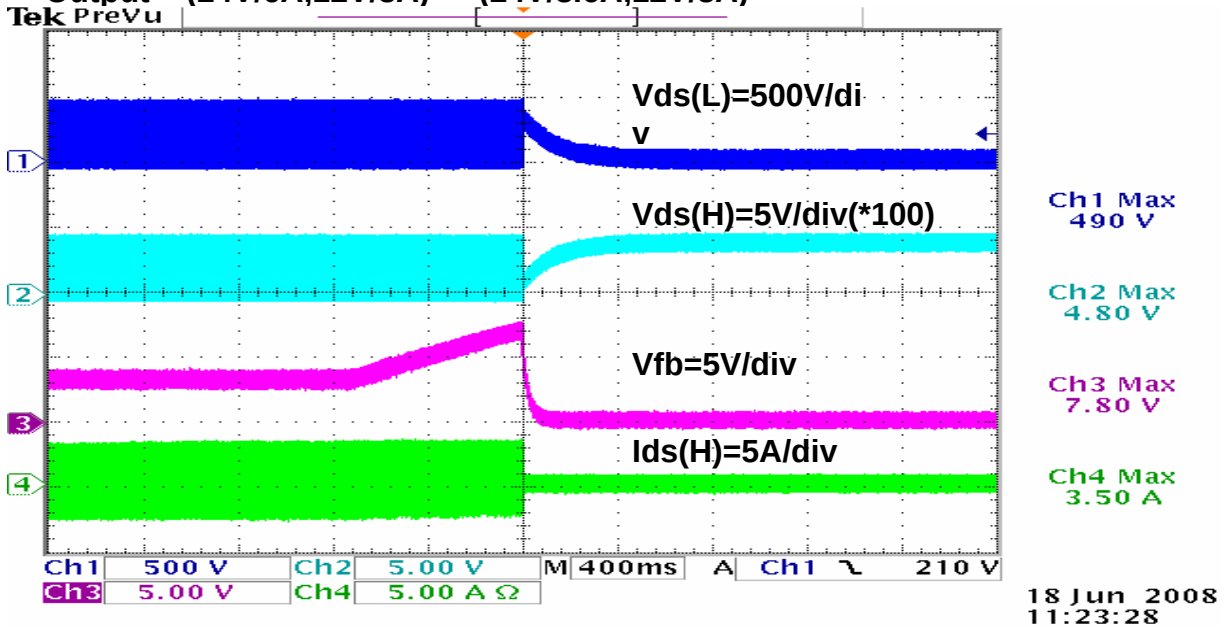


Max load (24V/6A,12V/3A)

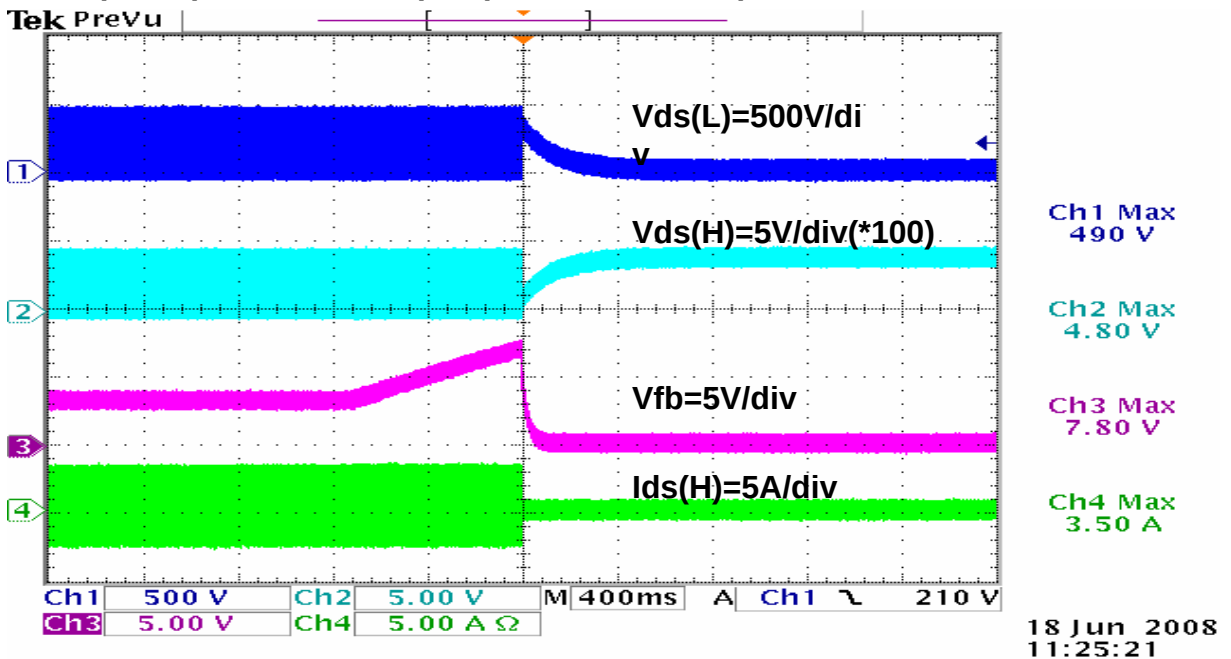


# OLP Waveforms check

Output = (24V/6A,12V/3A) → (24V/8.6A,12V/3A)



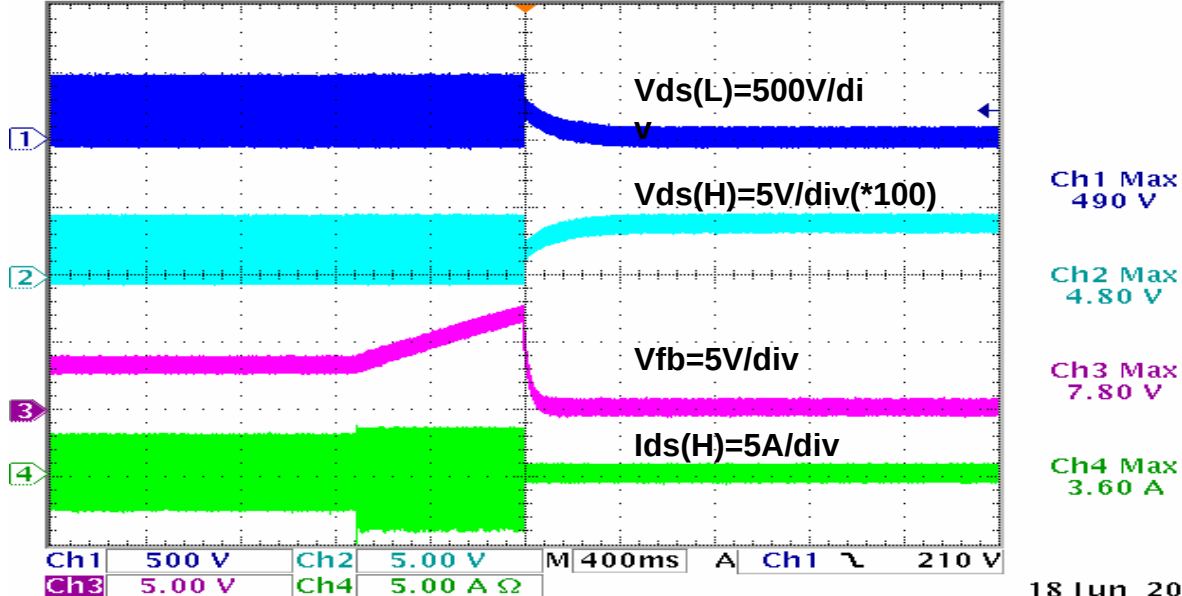
Output = (24V/6A,12V/3A) → (24V/6A,12V/8.6A)



2<sup>nd</sup> Capacitor short Waveforms check

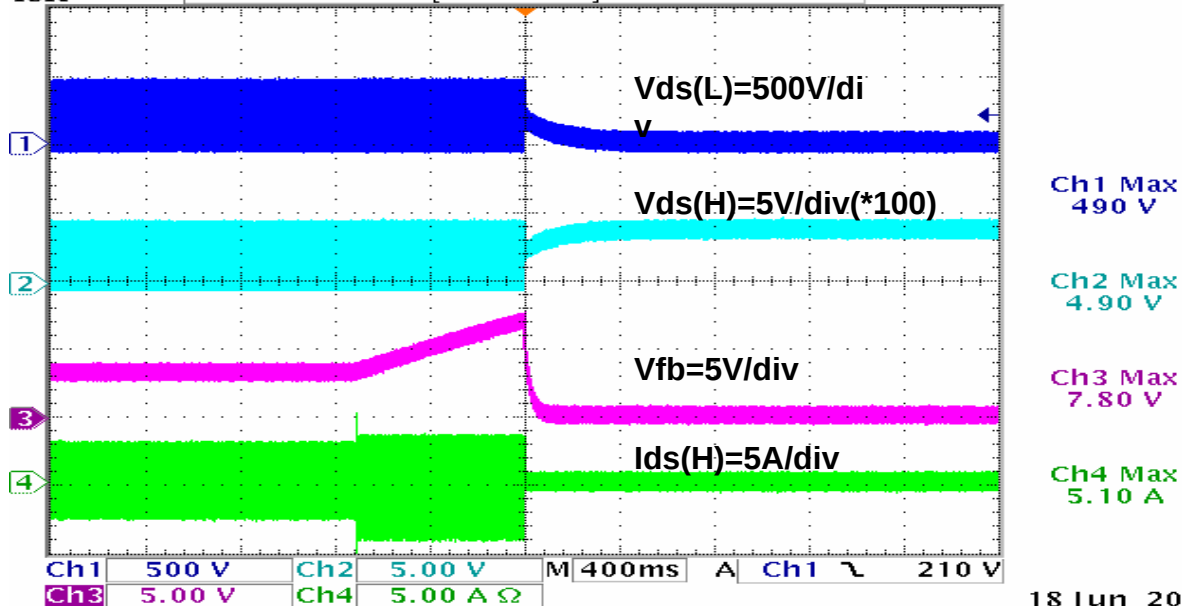
24V line

Tek PreVu

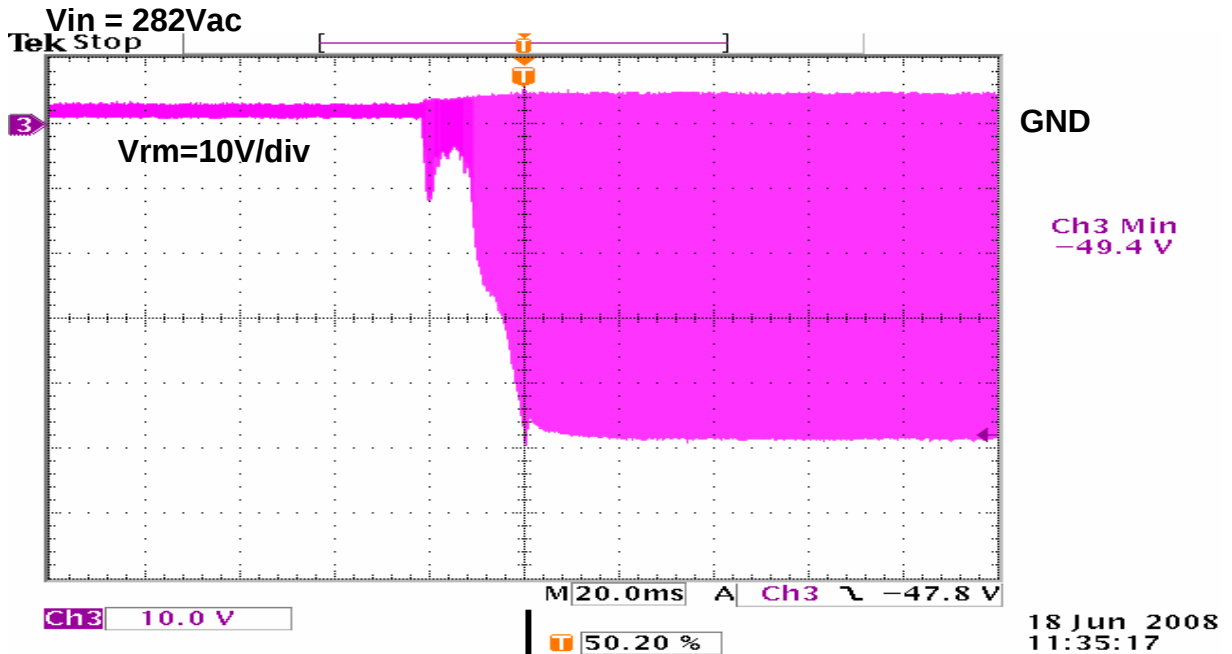
18 Jun 2008  
11:27:42

12V line

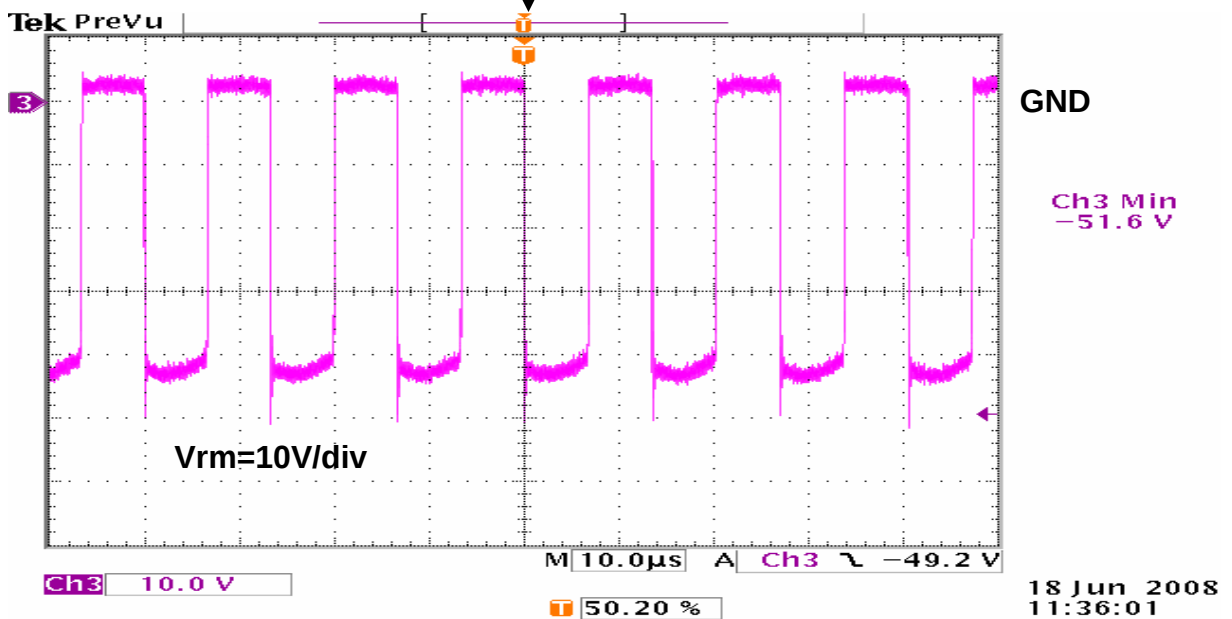
Tek PreVu

18 Jun 2008  
11:29:25

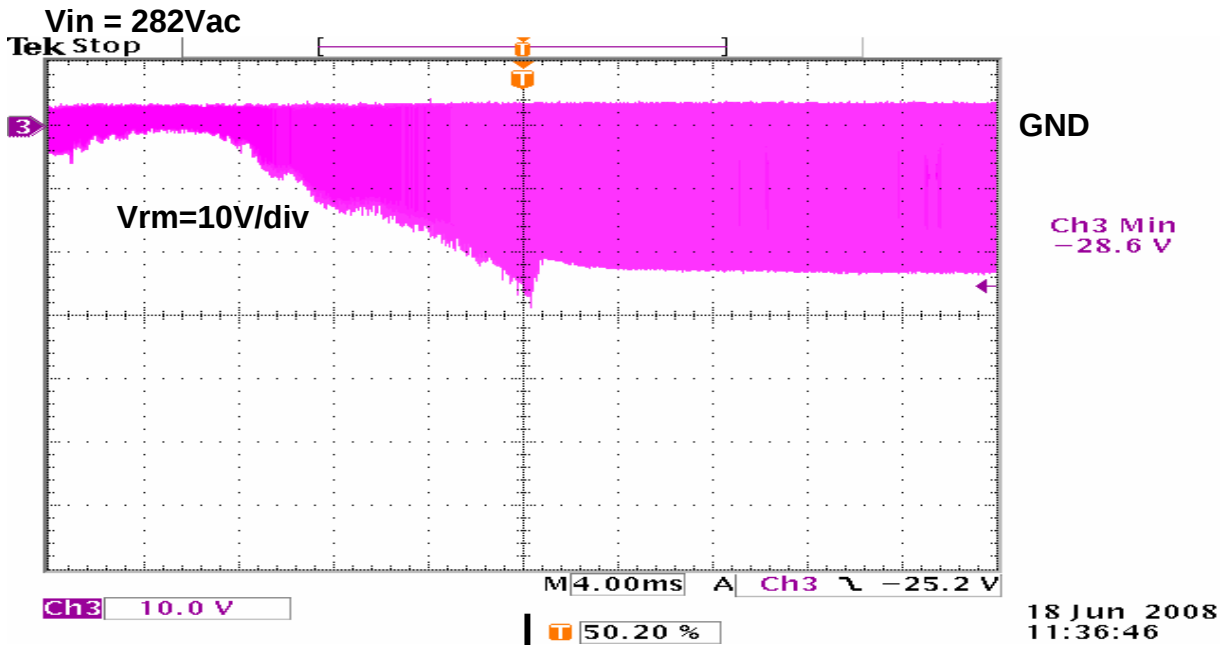
## 24V Vrm Waveforms check



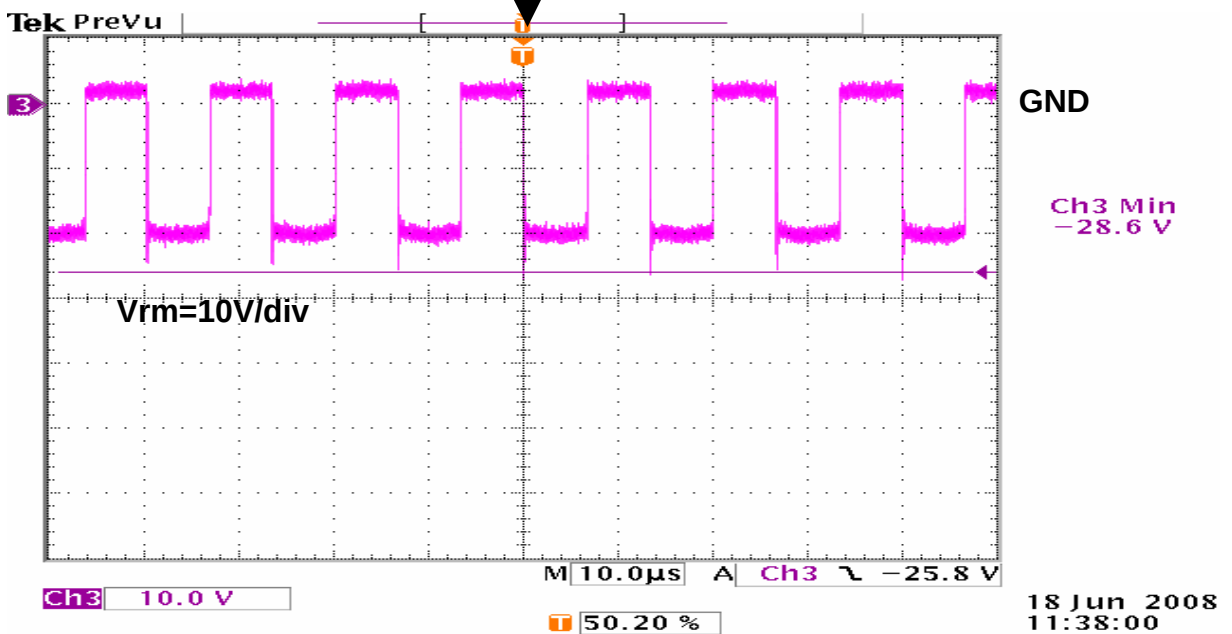
Enlarged



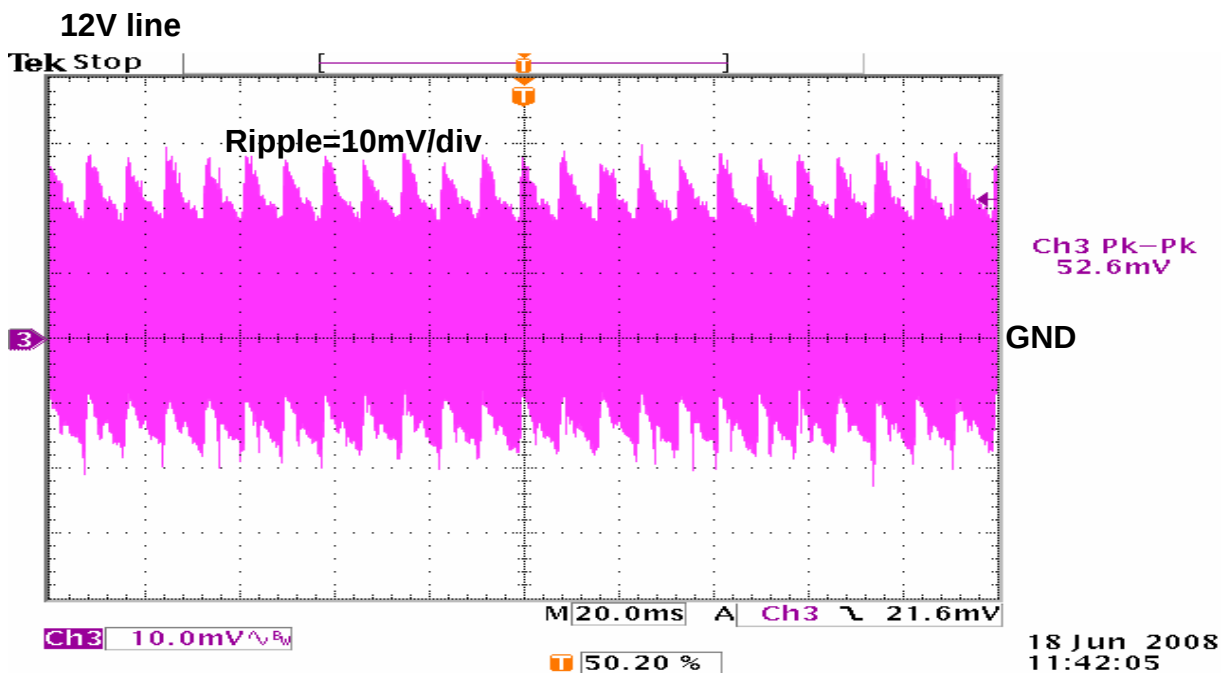
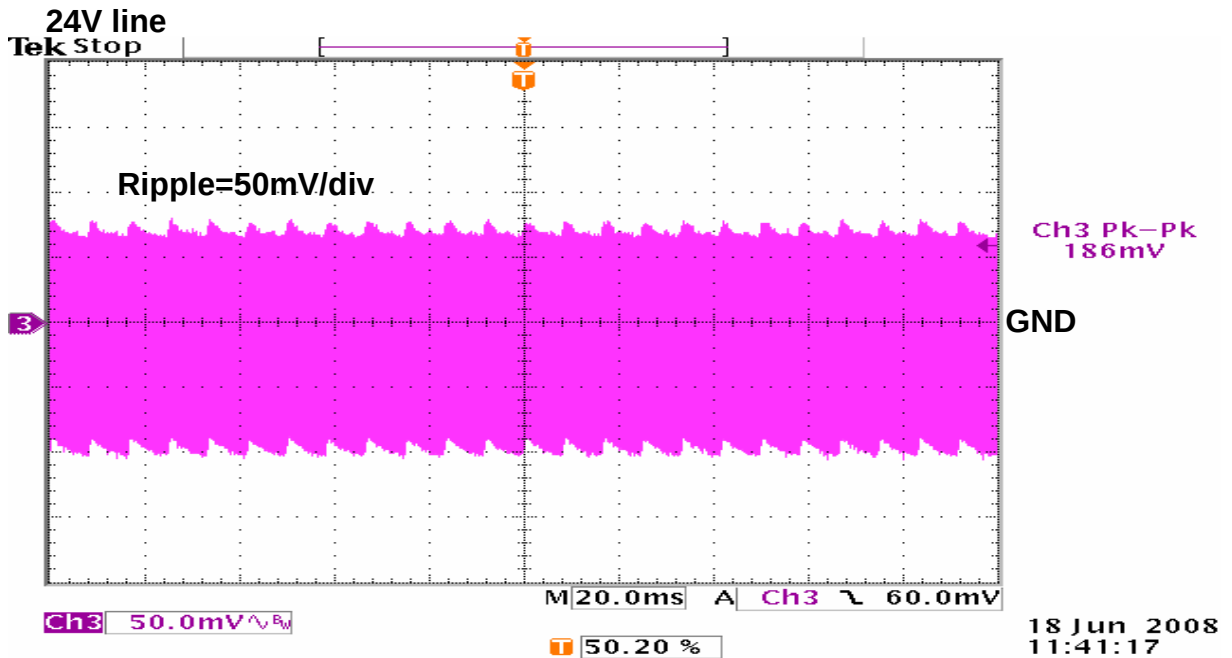
# 12V Vrm Waveforms check



Enlarged



## Output ripple check at Max load



Test condition: 20MHz band width, a 10uF capacitor in parallel with a 0.1uF capacitor.