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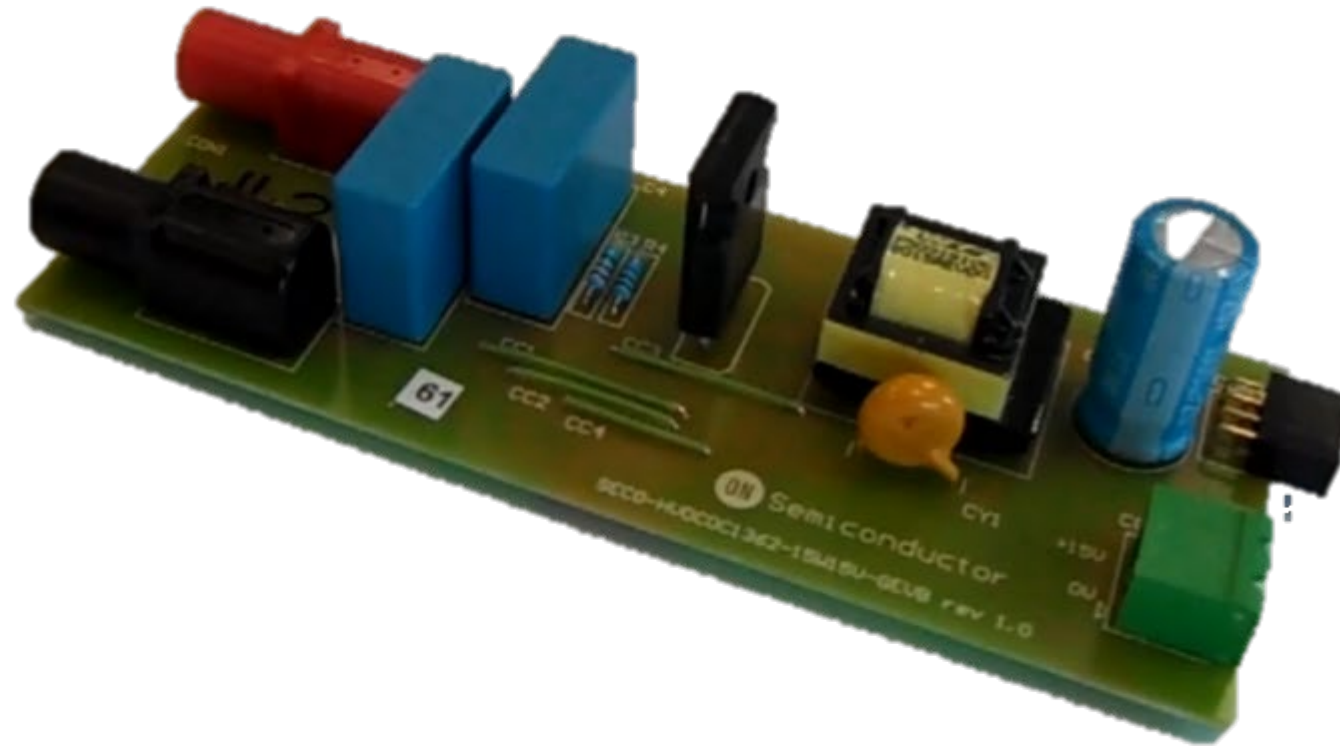
**High voltage Auxiliary power supply
250V – 900VDC/15VDC@15W testing rev. 1.0**

SECO-HVDCDC1362-15W15V-GEVB

Public Information



**Automotive QR Fly-back:
250V – 900V DC in / 15V DC out @15W
SECO-HVDCDC1362-15W15V-GEVB**



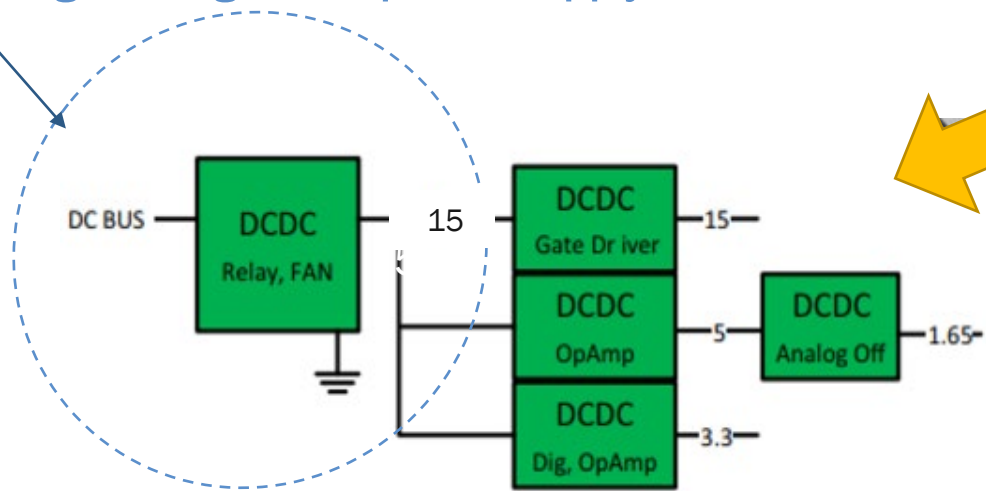
Looking at the system level – Auxiliary power solutions

Auxiliary Power supply - NCV1362
PSR Flyback – 250-900V/15V 15W

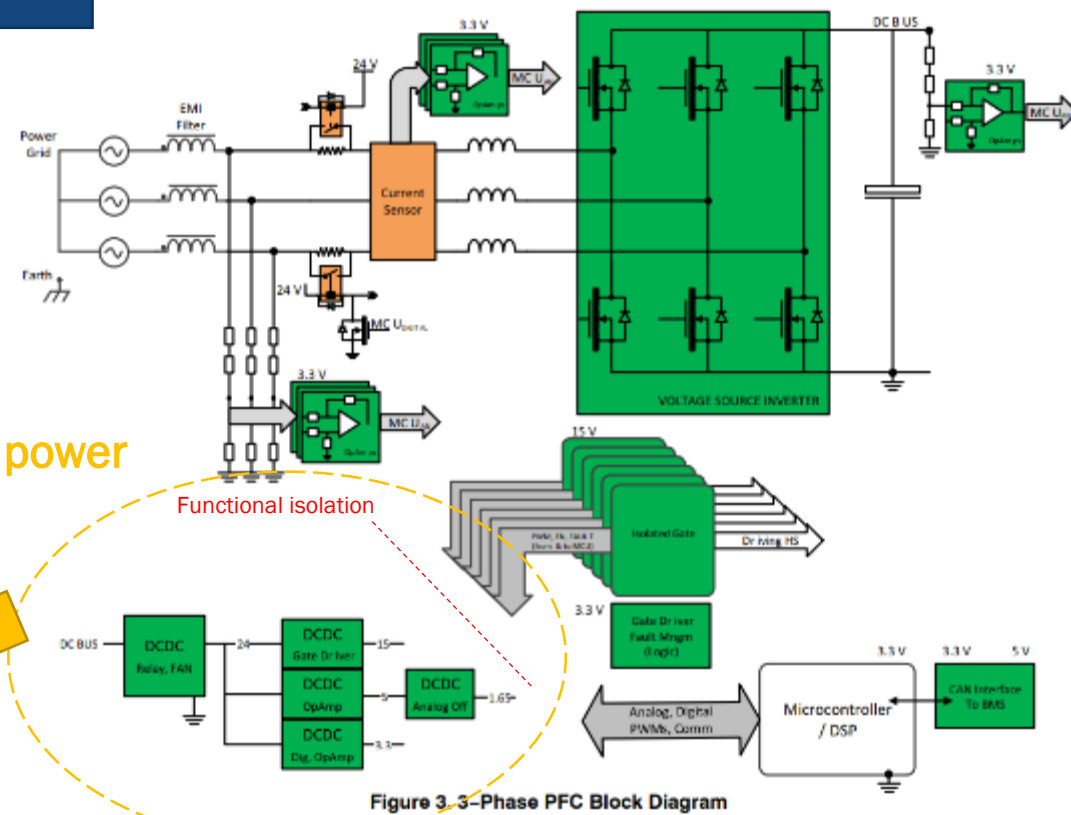


15W

High voltage Aux. power supply



Automotive power train system



Auxiliary power

Functional isolation

Figure 3-3-Phase PFC Block Diagram

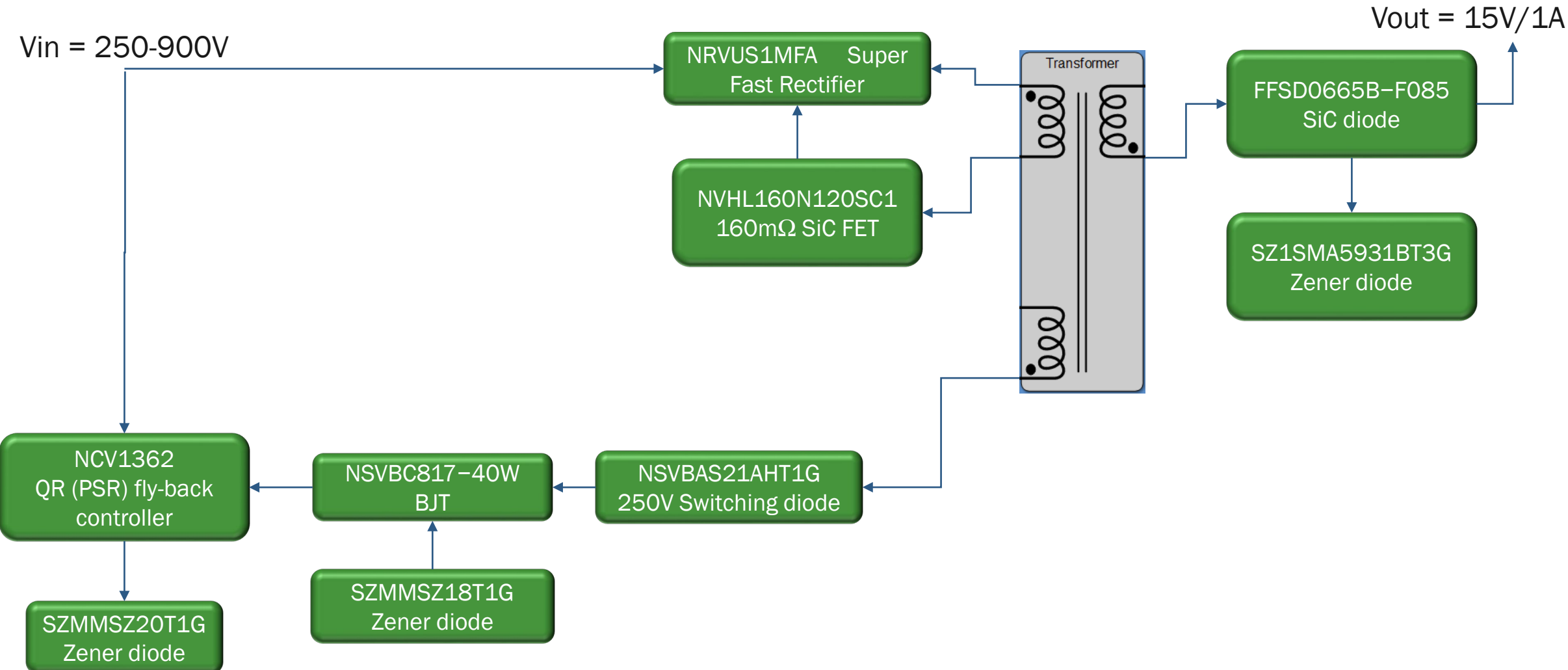


Specification

Specification	
Vin	250-900 Vdc
Vout	~15V
Power	15W
Isolation Level	4kV
Switching freq.	50kHz(max load)-200kHz
Key Portfolio	Automotive NCV1362, NVH4L0160N120SC1
Regulations	IEC 62368-1, pollution degree1

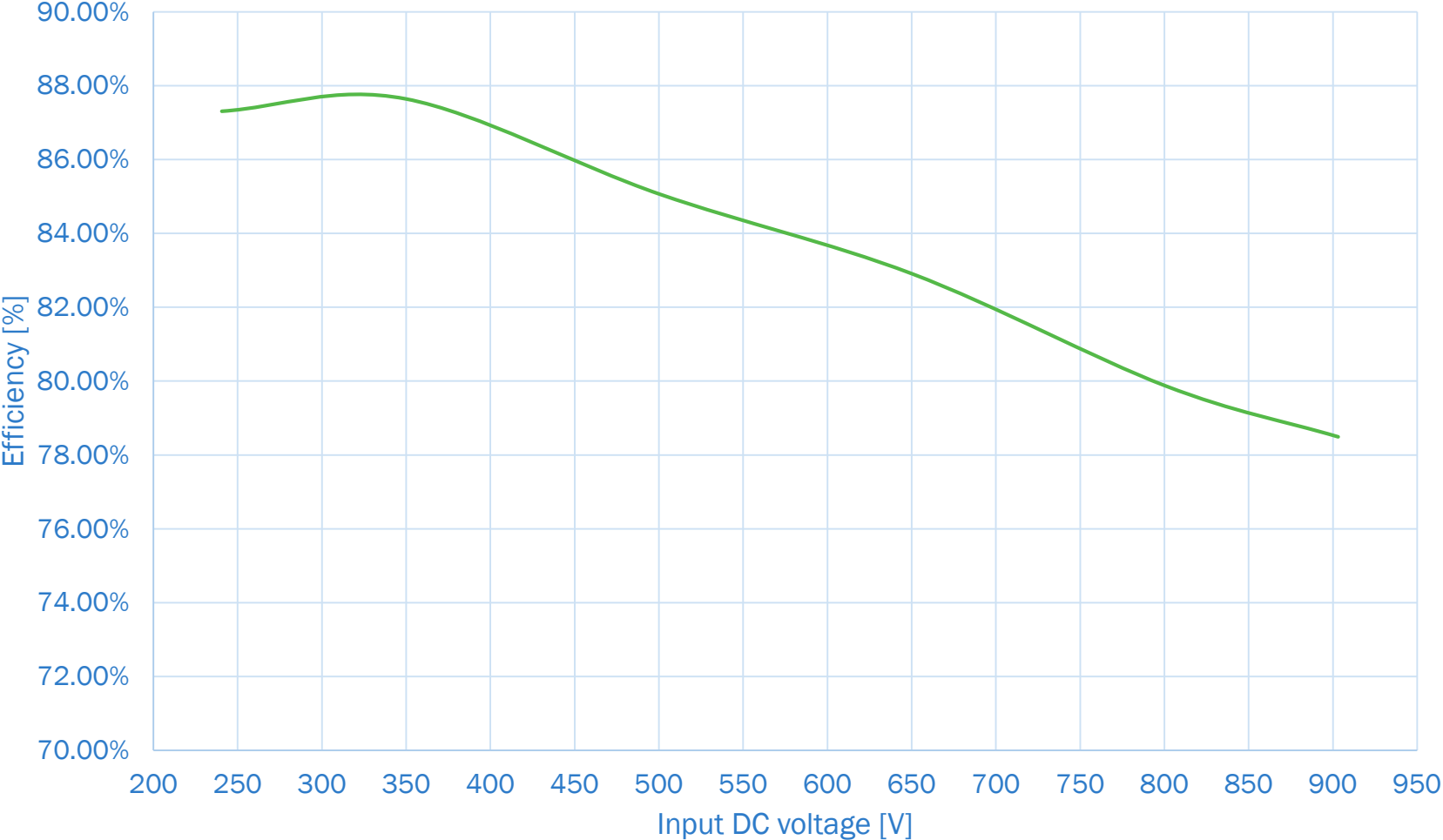


Block Diagram



Efficiency Figures at input voltage range and full load conditions

Efficiency @15W HV Auxiliary



Measured conditions:

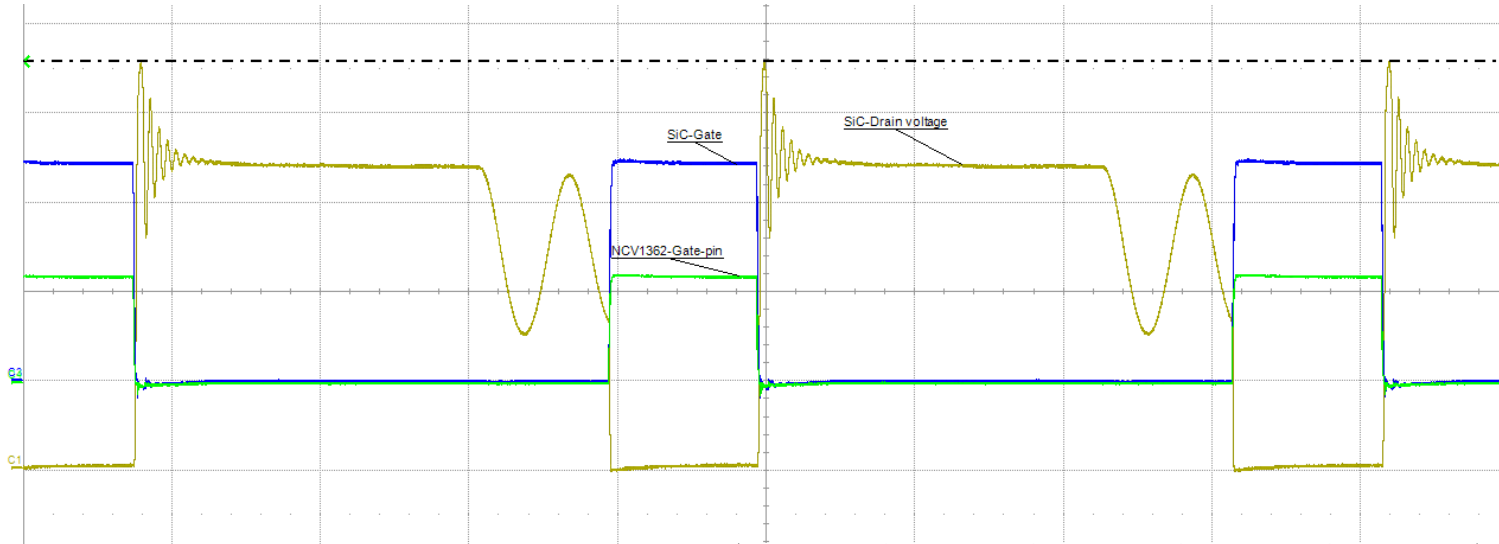
- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm -> 1.0A)

List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Textronix PA3000
- Electronic load: Chroma



Waveforms at 240V DC full load



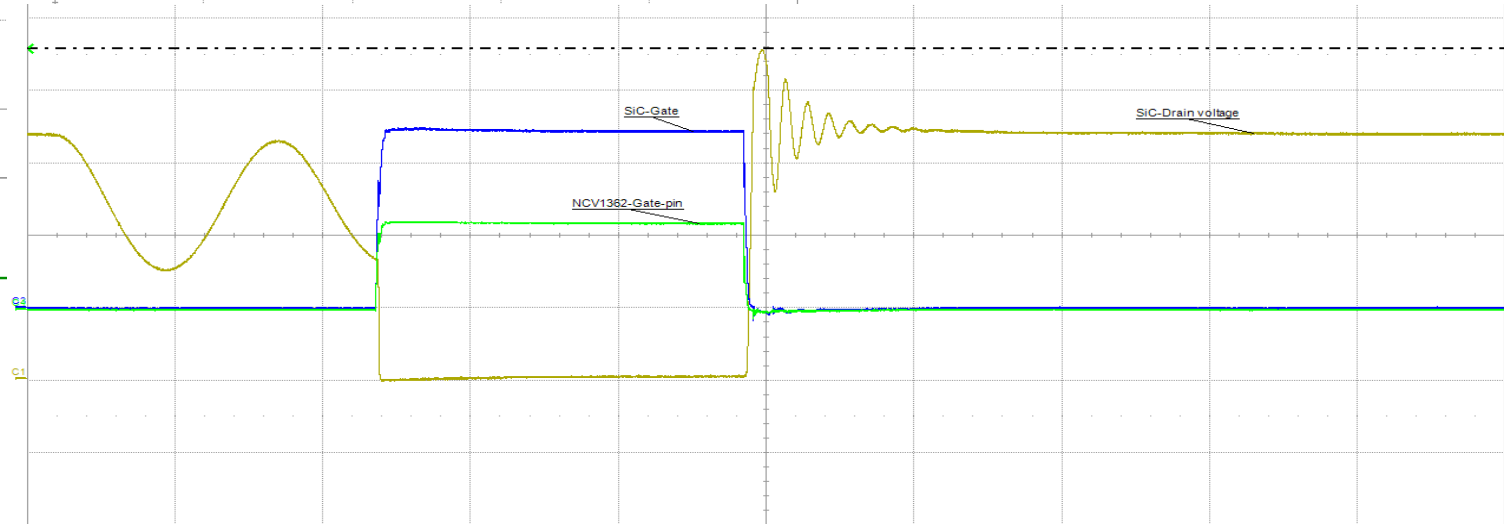
Measure	value	status
P1:max(C1)	455.3 V	✓
P2:mean(C5)	15.694 V	✓
P3:freq(C1)	47.564344 kHz	✓
P4:rise(C1)	59.426 ns	✓
P5:fall(C1)		

C1	BwL	DC	C3	DC1M	C4	DC1M
100 V/div	5.00 V/div	10.0 V/div	100 V/div	5.00 V/div	10.0 V/div	10.0 V/div
-197.87 V	-5.000 V	-10.200 V	-197.87 V	-5.000 V	-10.200 V	-10.200 V
456 V	17.90 V	36.0 V	456 V	17.90 V	36.0 V	36.0 V

TELEDYNE LECROY

Measured conditions:

- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm \rightarrow 1.0A)



Measure	value	status
P1:max(C1)	454.5 V	✓
P2:mean(C5)	15.683 V	✓
P3:freq(C1)	---	
P4:rise(C1)	60.546 ns	✓
P5:fall(C1)		
P6:fall(C1)		
P7:top(C1)		
P8:base(C1)		
P9:freq(C1)		
P10:widn(C1)		
P11:max(C1)		
P12:mean(C1)		

C1	BwL	DC	C3	DC1M	C4	DC1M
100 V/div	5.00 V/div	10.0 V/div	100 V/div	5.00 V/div	10.0 V/div	10.0 V/div
-197.87 V	-5.000 V	-10.200 V	-197.87 V	-5.000 V	-10.200 V	-10.200 V
456 V	17.90 V	36.0 V	456 V	17.90 V	36.0 V	36.0 V

TELEDYNE LECROY

Timebase	0.00 μ s	Trigger	C1 DC
	2.00 μ s/div	Stop	433 V
	50 kS	Edge	Negative

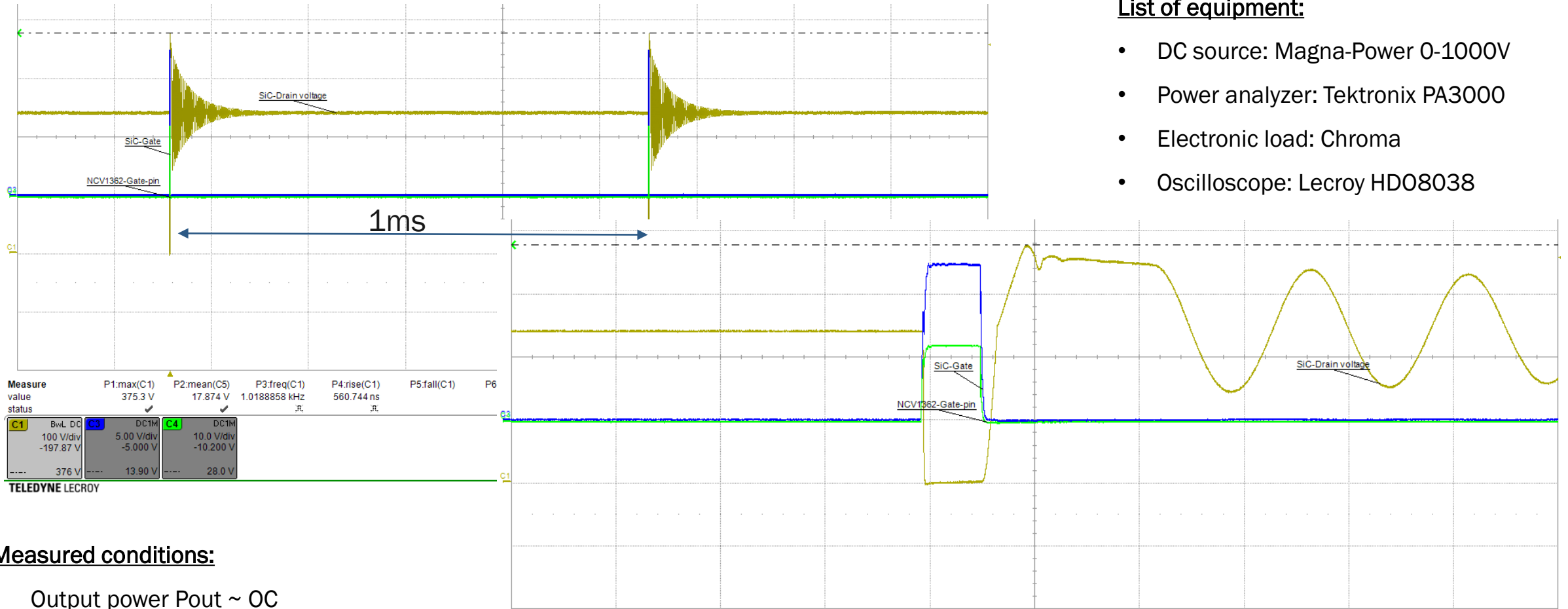
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Waveforms at 240V DC open circuit

List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HDO8038



Measure value status	P1.max(C1)	P2.mean(C5)	P3.freq(C1)	P4.rise(C1)	P5.fall(C1)	P6
C1	BwL DC	DC1M	DC1M			
100 V/div	375.3 V	5.00 V/div	1.0188858 kHz	560.744 ns		
-197.87 V		-5.000 V				
---	376 V	13.90 V	---	28.0 V		

Measure value status	P1.max(C1)	P2.mean(C5)	P3.freq(C1)	P4.rise(C1)	P5.fall(C1)	P6.fall(C1)	P7.top(C1)	P8.base(C1)	P9.freq(C1)	P10.widn(C1)	P11.max(C1)	P12.mean(C1)
C1	BwL DC	DC1M	DC1M									
100 V/div	375.7 V	5.00 V/div	199.2462 kHz	559.425 ns								
-197.87 V		-5.000 V										
---	376 V	13.90 V	---	28.0 V								

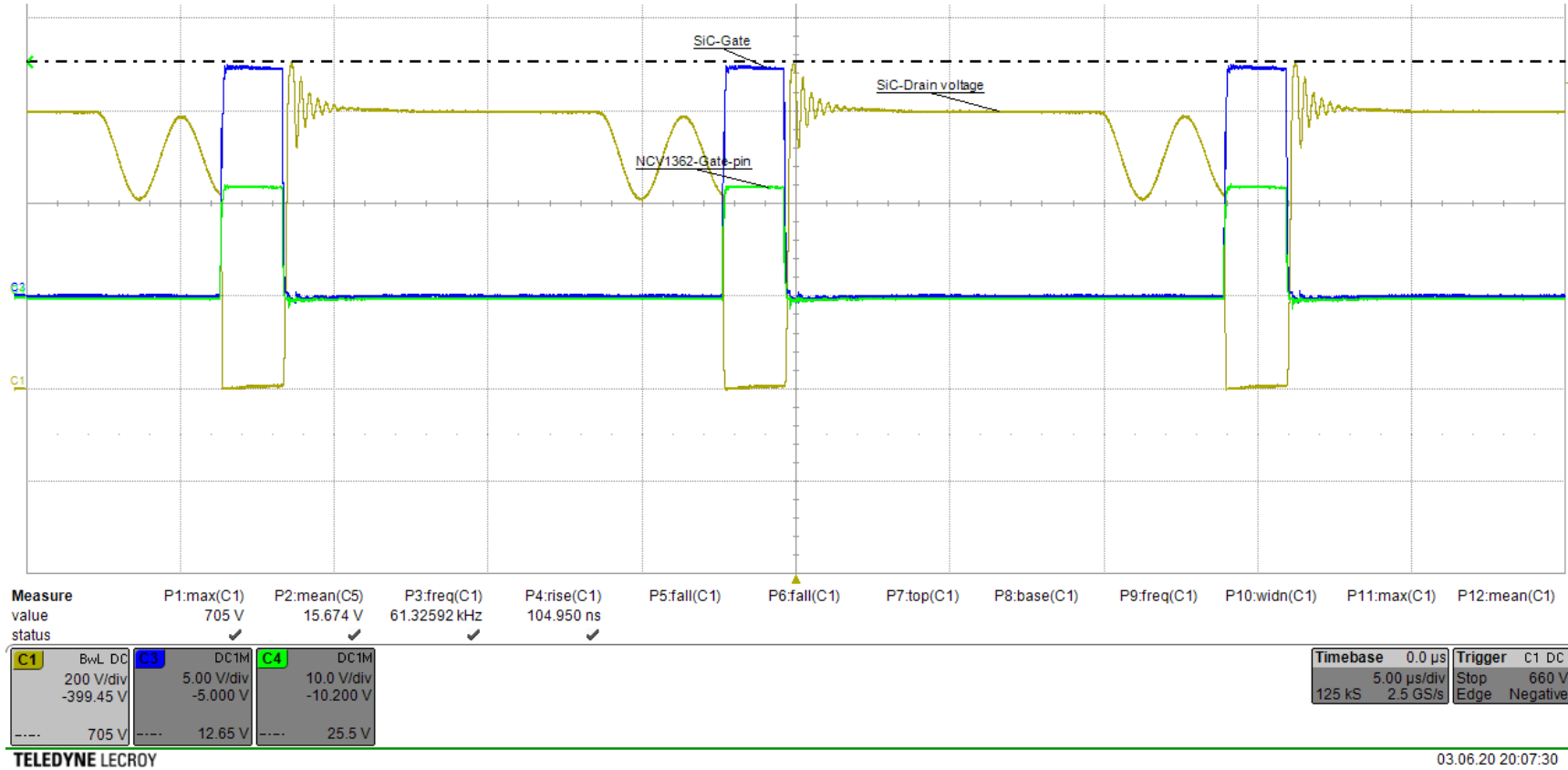
Timebase	0.00 μs	Trigger	C1 DC
	2.00 μs/div	Stop	355 V
	50 kS	Edge	Negative

Measured conditions:

- Output power $P_{out} \sim 0C$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm \rightarrow 1.0A)



Waveforms at 500V DC full load



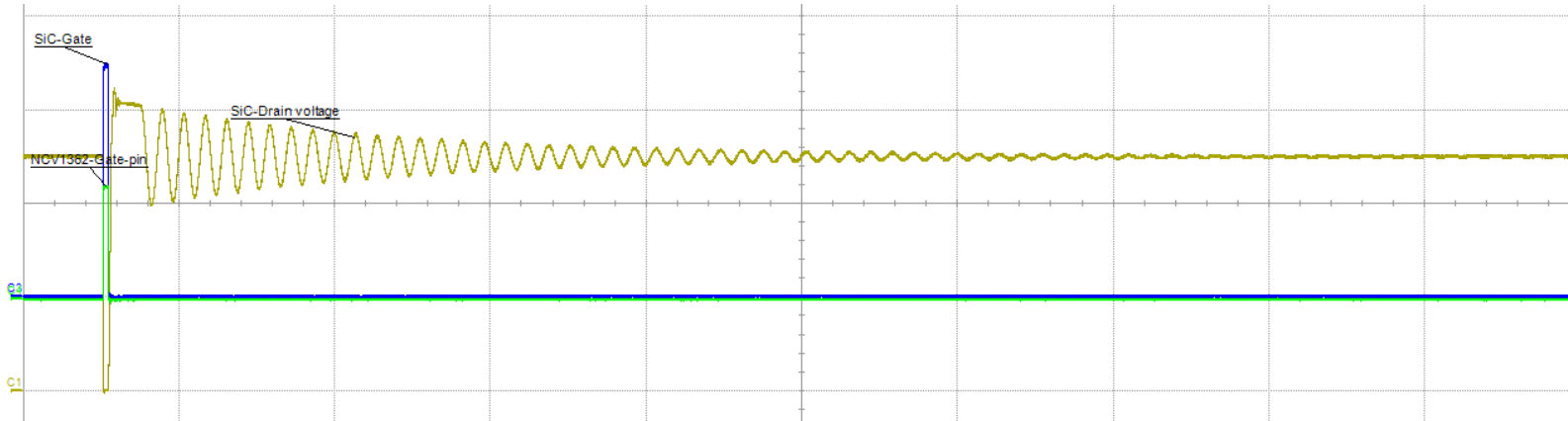
List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HD08038

Measured conditions:

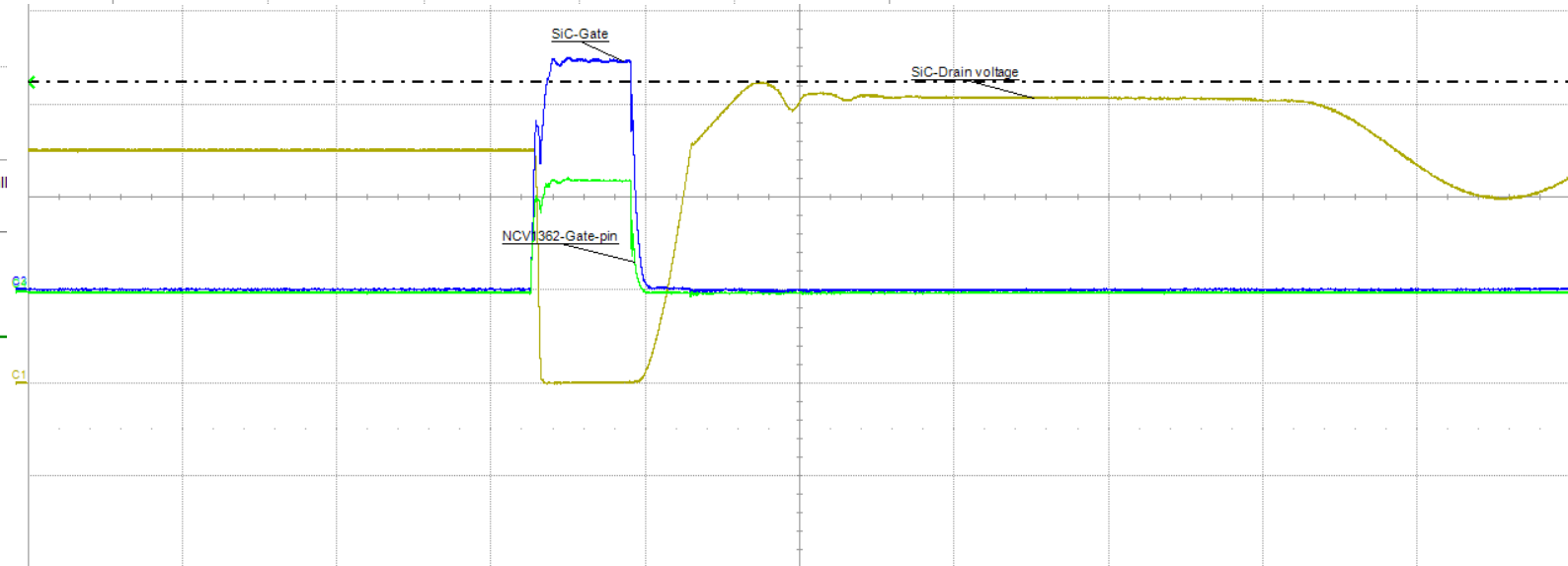
- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm \rightarrow 1.0A)

Waveforms at 500V DC open circuit



Measure value status	P1:max(C1)	P2:mean(C5)	P3:freq(C1)	P4:rise(C1)	P5:fall
C1	BwL DC	DC1M	DC1M		
200 V/div	647 V	17.956 V	---	457.883 ns	.R.
-399.45 V					
1.071 kV					
21.80 V					
43.8 V					

TELEDYNE LECROY



Measure value status	P1:max(C1)	P2:mean(C5)	P3:freq(C1)	P4:rise(C1)	P5:fall(C1)	P6:fall(C1)	P7:top(C1)	P8:base(C1)	P9:freq(C1)	P10:widn(C1)	P11:max(C1)	P12:mean(C1)
C1	BwL DC	DC1M	DC1M									
200 V/div	648 V	17.924 V	---	454.750 ns								
-399.45 V												
647 V												
11.20 V												
22.6 V												

TELEDYNE LECROY

Timebase	3.64 μ s	Trigger	C1 DC
	1.00 μ s/div	Stop	568
25 kS	2.5 GS/s	Edge	Negative

List of equipment:

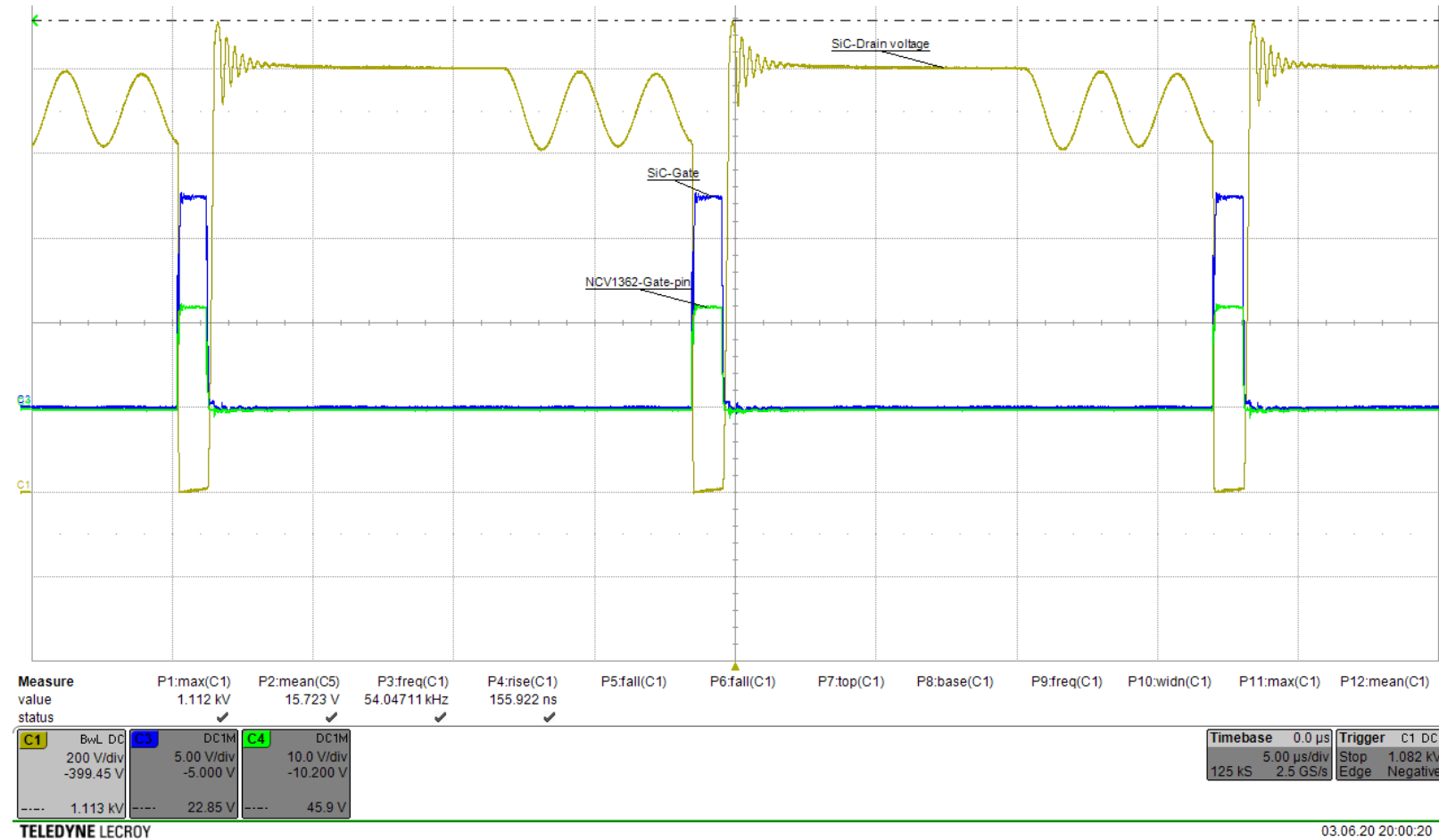
- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HDO8038

Measured conditions:

- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm \rightarrow 1.0A)

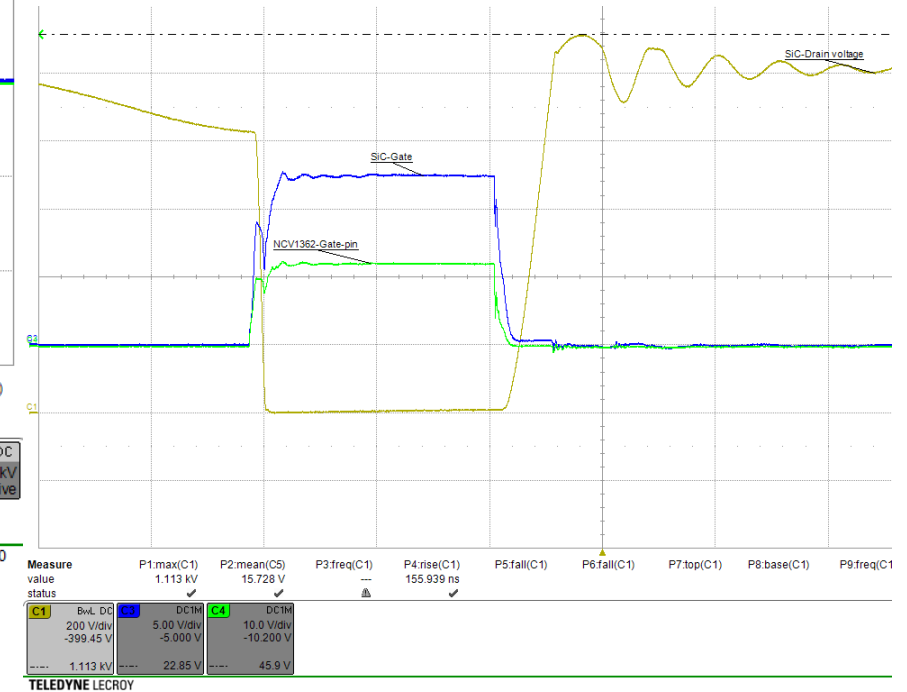


Waveforms at 900V DC full load



List of equipment:

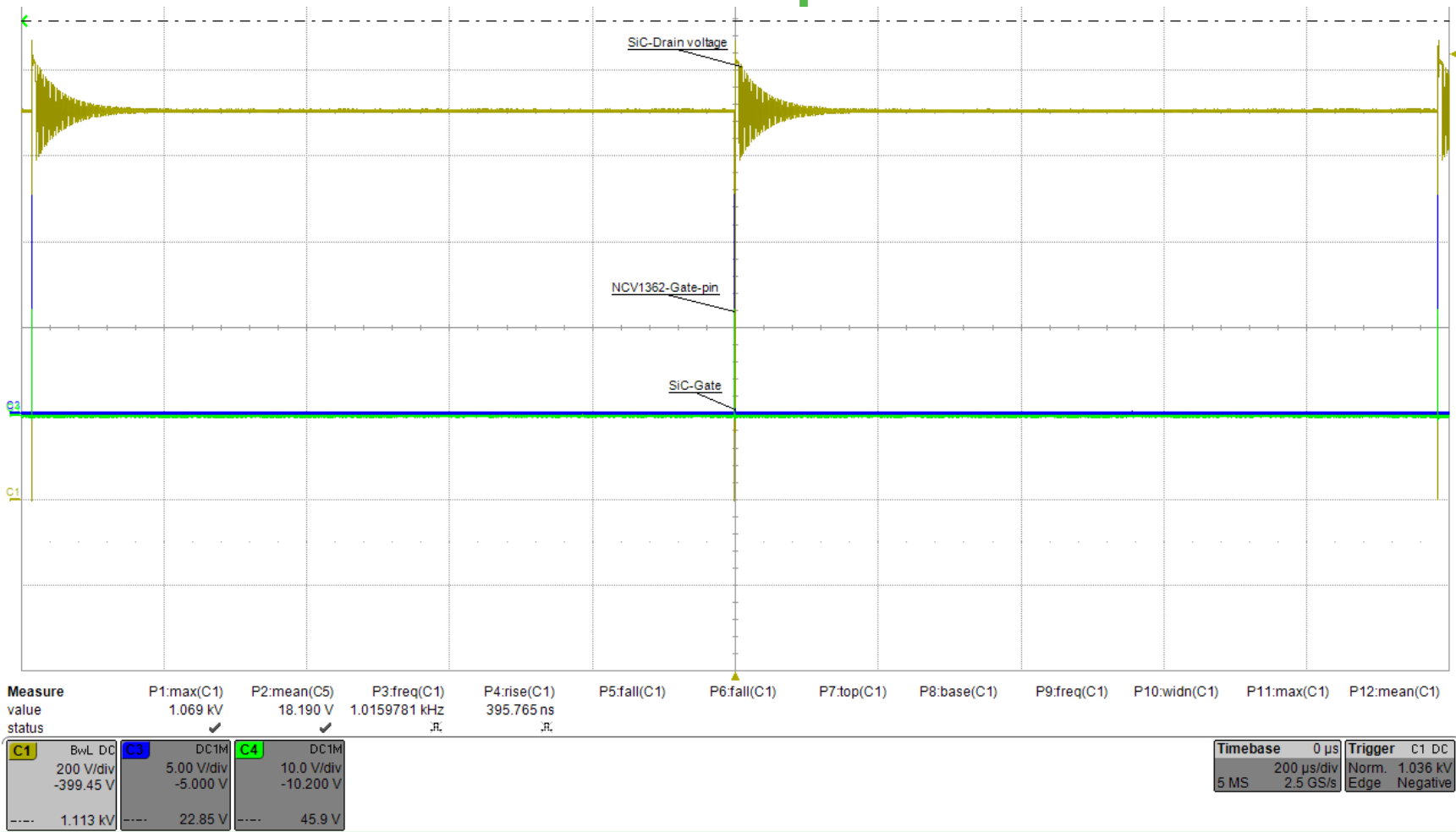
- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HD08038



Measured conditions:

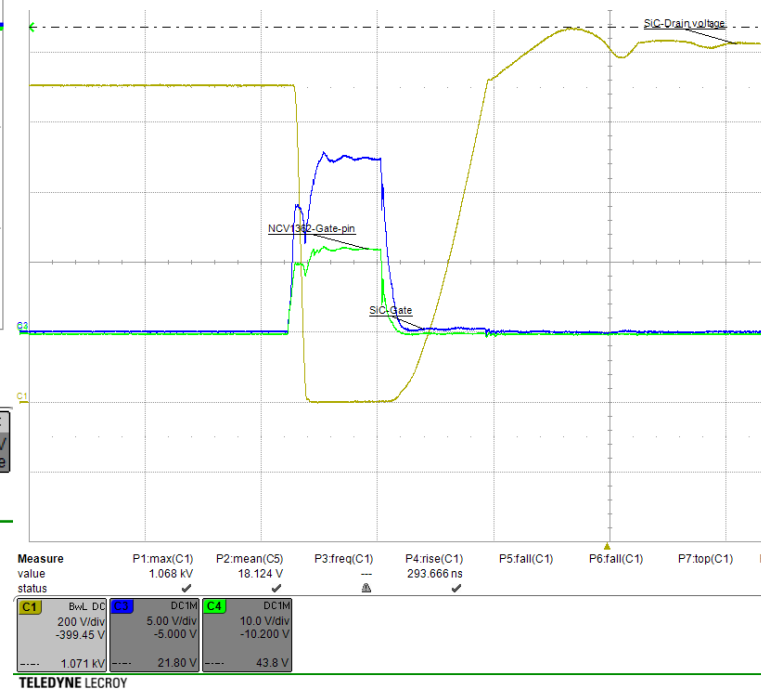
- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm \rightarrow 1.0A)

Waveforms at 900V DC open circuit



List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HD08038



Measured conditions:

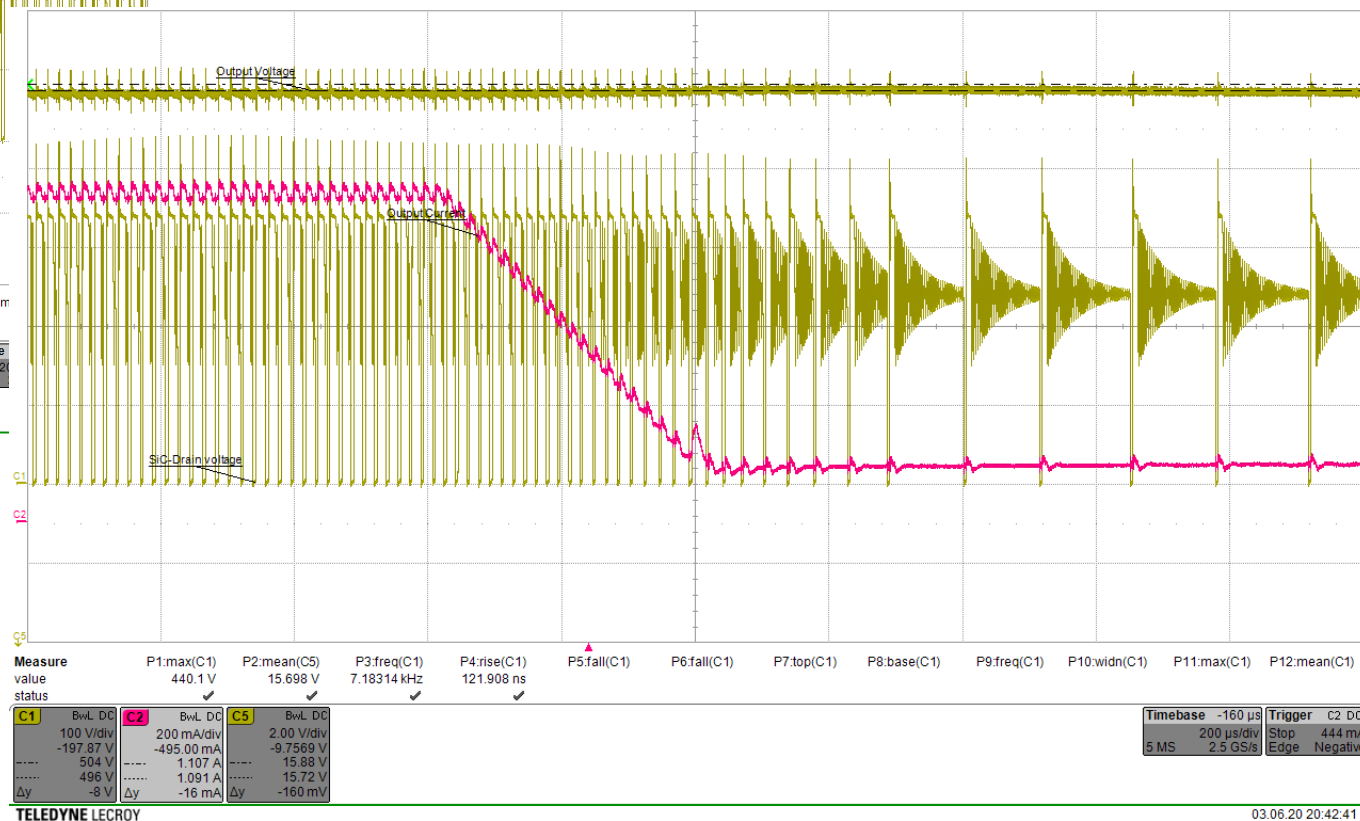
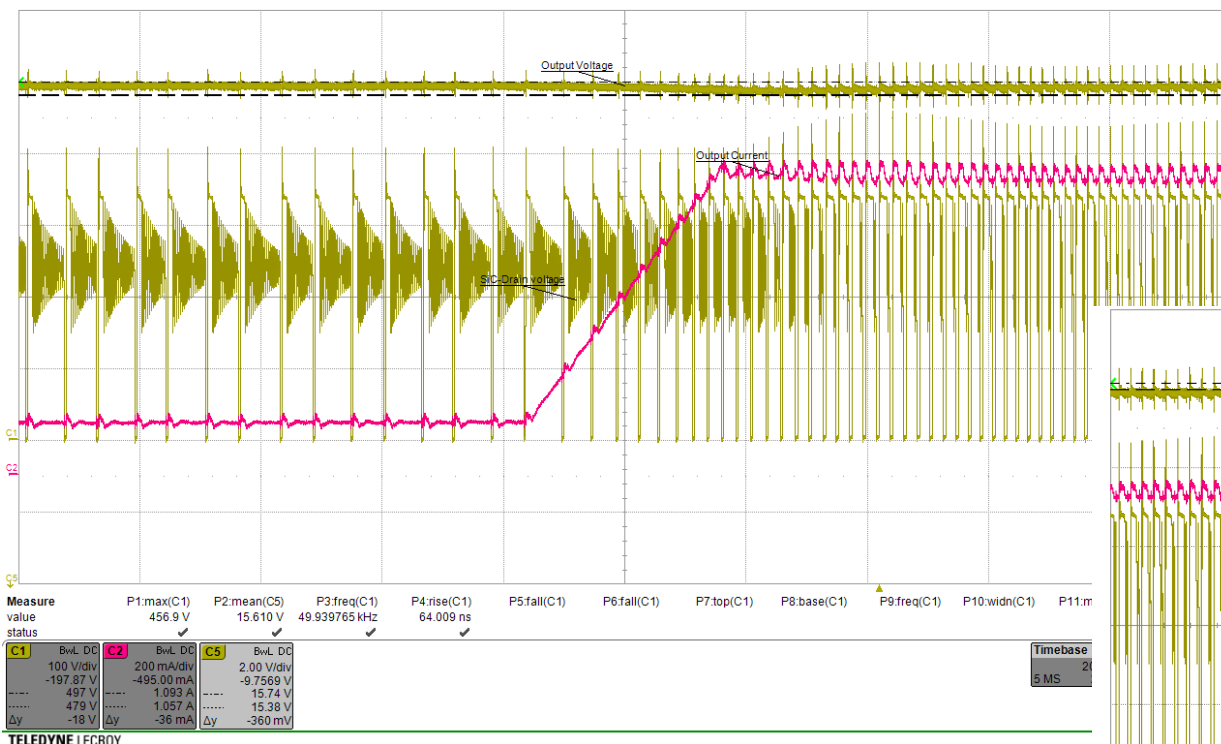
- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CRH (constant resistance high mode 15 Ohm \rightarrow 1.0A)



Load transients at 240V – 10% to 90%, 90% to 10%

List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HD08038



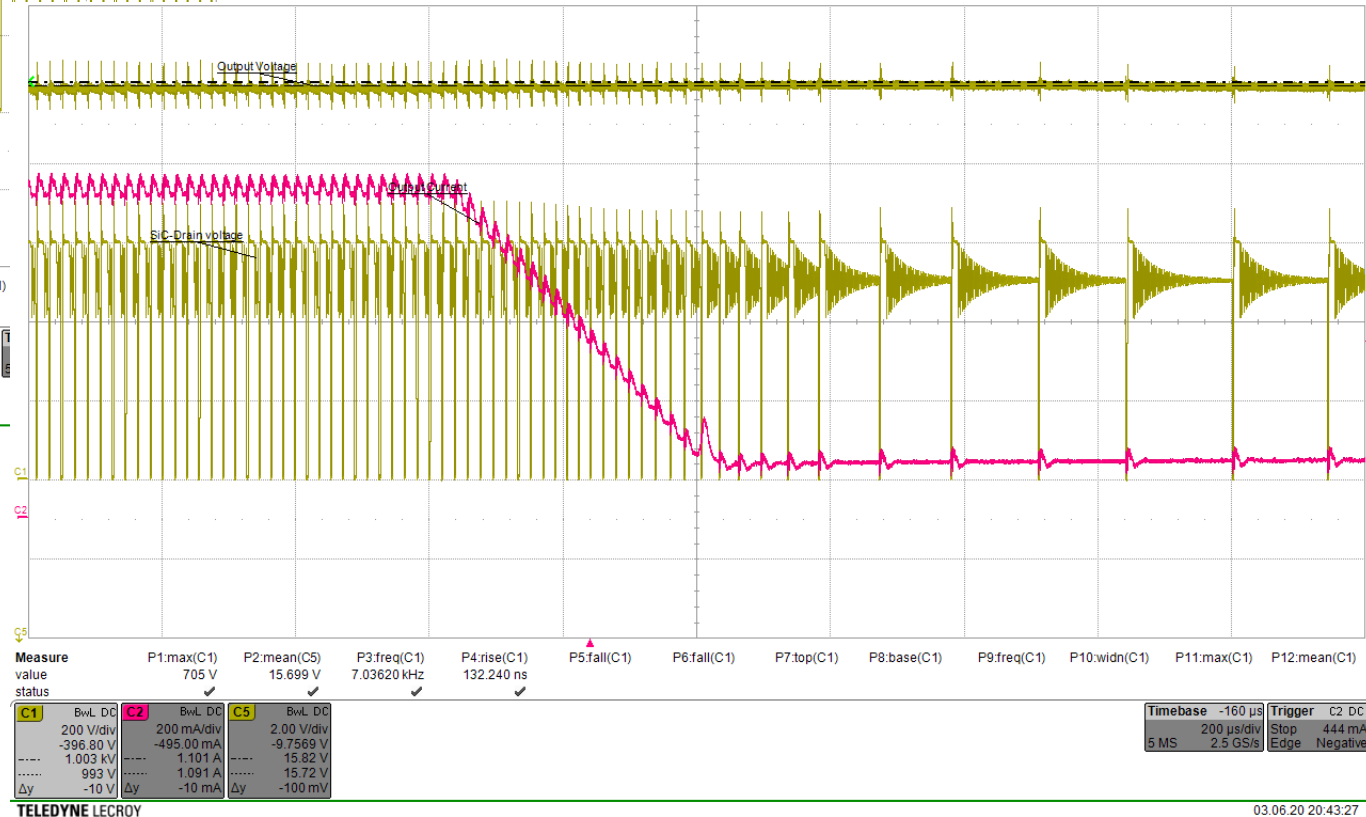
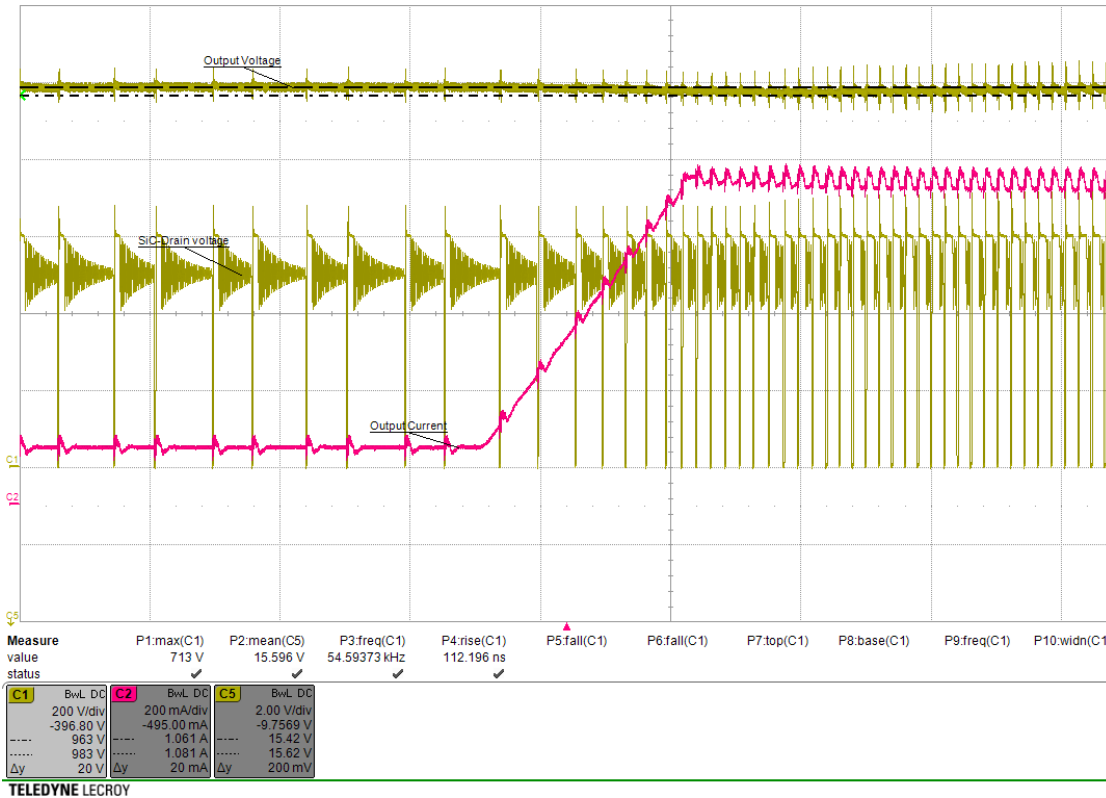
Measured conditions:

- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CCDL (constant current dynamic mode 0.15A -> 0.85A)

Load transients at 500V – 10% to 90%, 90% to 10%

List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HD08038



Measured conditions:

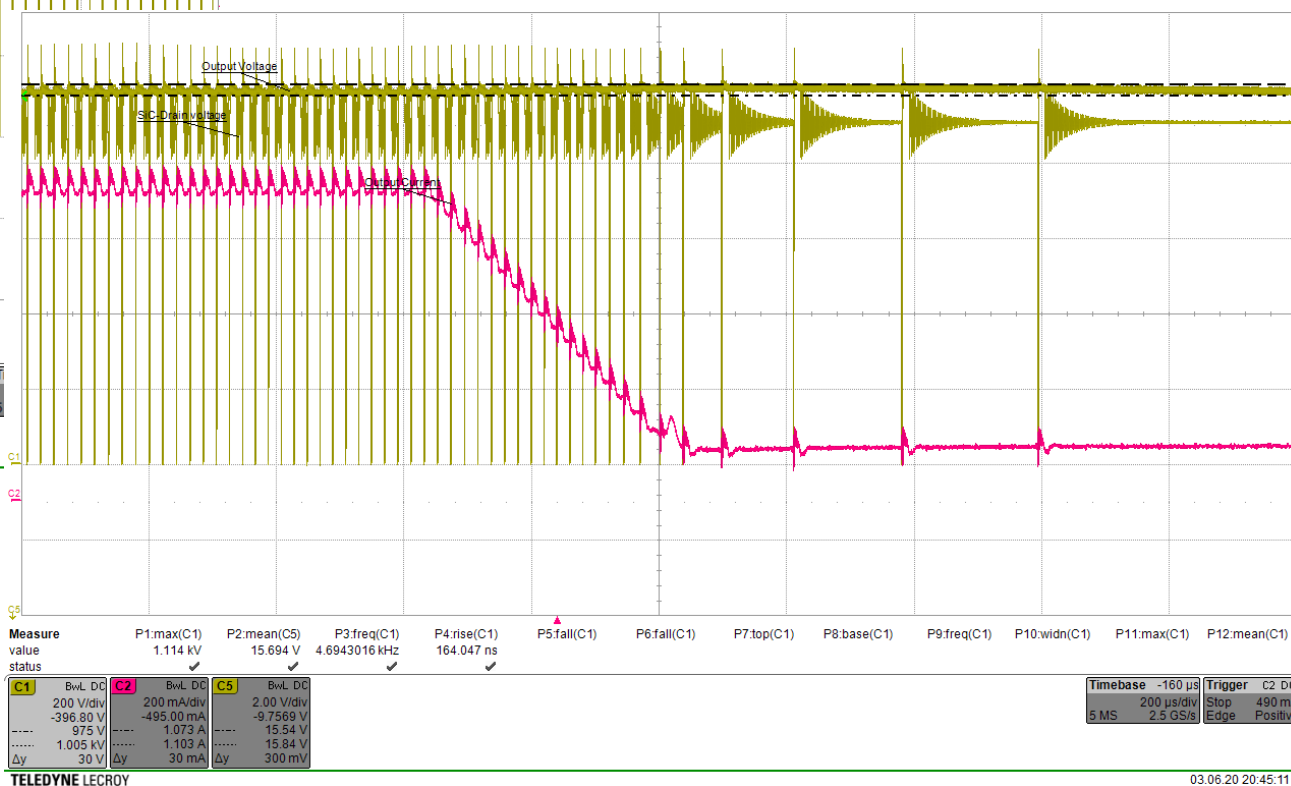
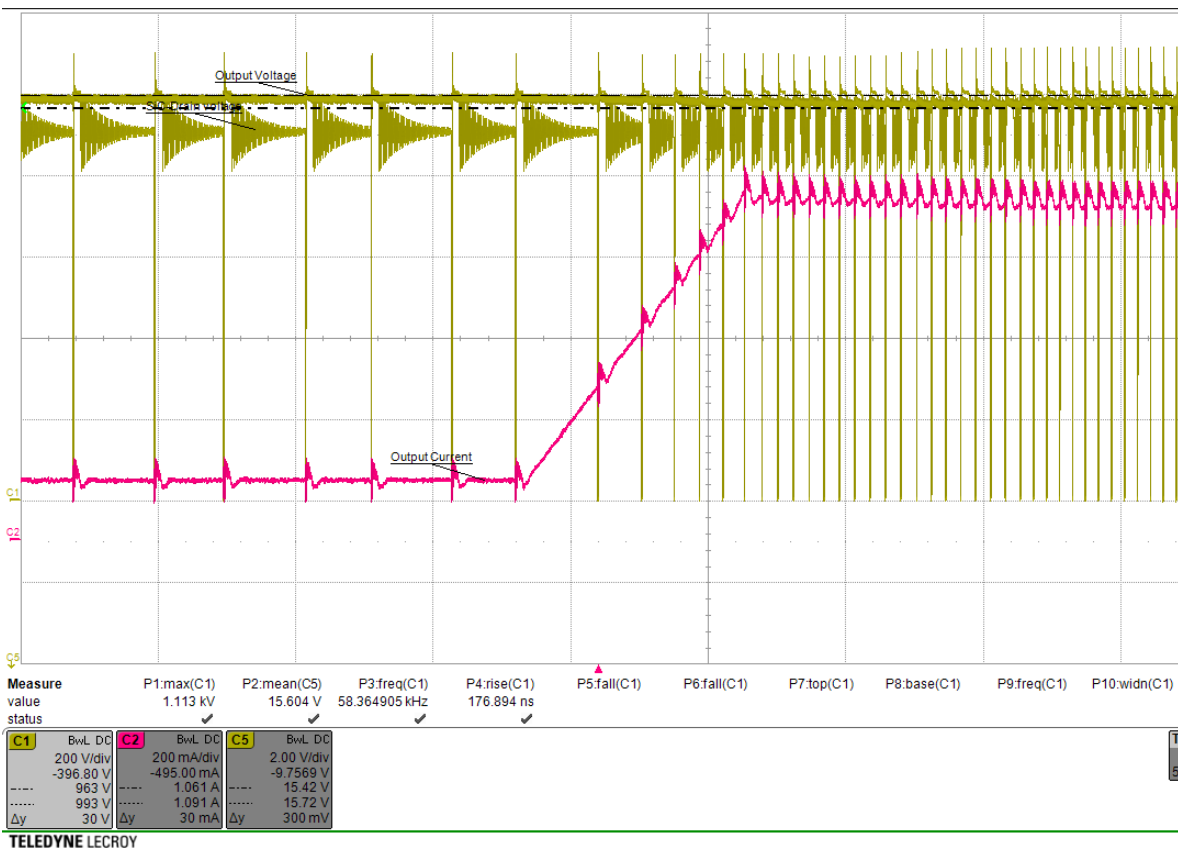
- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CCDL (constant current dynamic mode 0.15A -> 0.85A)



Load transients at 900V – 10% to 90%, 90% to 10%

List of equipment:

- DC source: Magna-Power 0-1000V
- Power analyzer: Tektronix PA3000
- Electronic load: Chroma
- Oscilloscope: Lecroy HD08038



Measured conditions:

- Output power $P_{out} \sim 15W$
- Electronic load: Chroma 6147A used channel 3 as CCDL (constant current dynamic mode 0.15A -> 0.85A)