

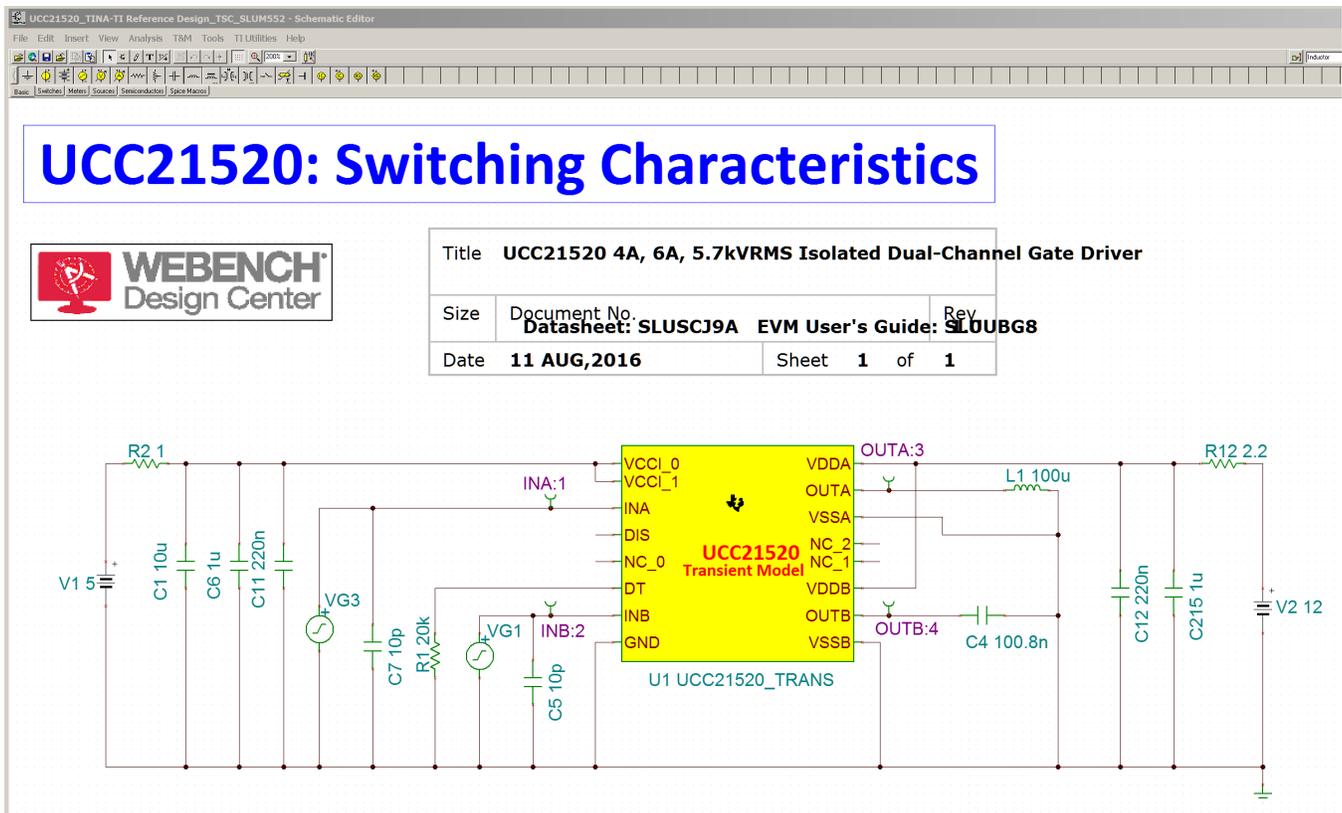
Using Texas Instruments TINA and TSC_SLUM552 file (UCC21520 Evaluation Board Circuit)

DEMONSTRATION of the UCC21520 Switching Characteristics [using WEBENCH Design Center]

This simulator software is free from Texas Instruments after registering.

The circuit file of the Evaluation Board, with the IC (UCC21520) already in the circuit diagram, is also available from TI. *Simply; file | open | change the values!*

Schematic:



Transient Simulation NOTES:

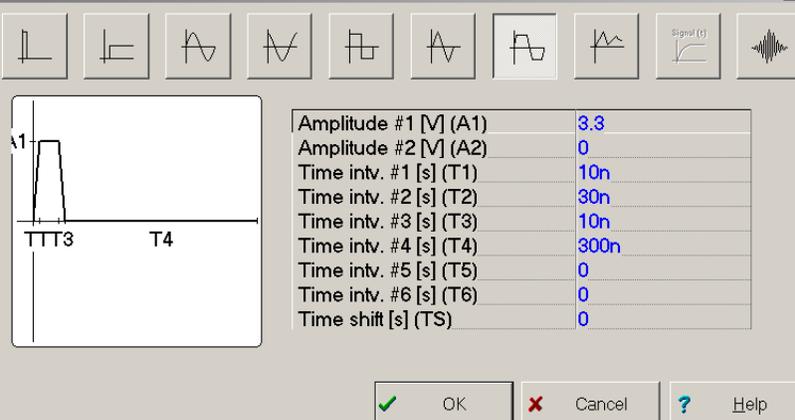
- OUTA (OUTA:3) load is L1 100uH inductor

L1 - Inductor	
Label	L1
Parameters	(Parameters)
Inductance [H]	100u
RSer [Ohm]	10
Initial DC current [A]	0
Temperature	Relative
Temperature [C]	0
Linear temp. coef. [1/C]	0
Quadratic temp. coef. [1/C ²]	0
Maximum voltage (V)	100
Maximum current (A)	10
Fault	None

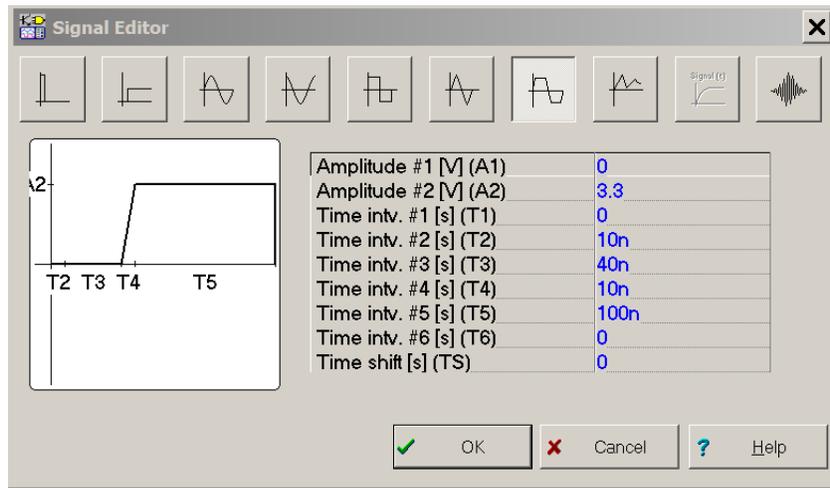
OUTB (OUTB:4) load is C4 100.8nF

C4 - Capacitor	
Label	C4
Parameters	(Parameters)
Capacitance [F]	100.8n
RPar [Ohm]	Infinite
Initial DC voltage [V]	Not Used
Temperature	Relative
Temperature [C]	0
Linear temp. coef. [1/C]	0
Quadratic temp. coef. [1/C ²]	0
Maximum voltage (V)	100
Maximum ripple current (A)	1
Fault	None

- VG3 (INA:1)

Signal Editor	
	
Amplitude #1 [V] (A1)	3.3
Amplitude #2 [V] (A2)	0
Time intv. #1 [s] (T1)	10n
Time intv. #2 [s] (T2)	30n
Time intv. #3 [s] (T3)	10n
Time intv. #4 [s] (T4)	300n
Time intv. #5 [s] (T5)	0
Time intv. #6 [s] (T6)	0
Time shift [s] (TS)	0

- VG1 (INB:2)

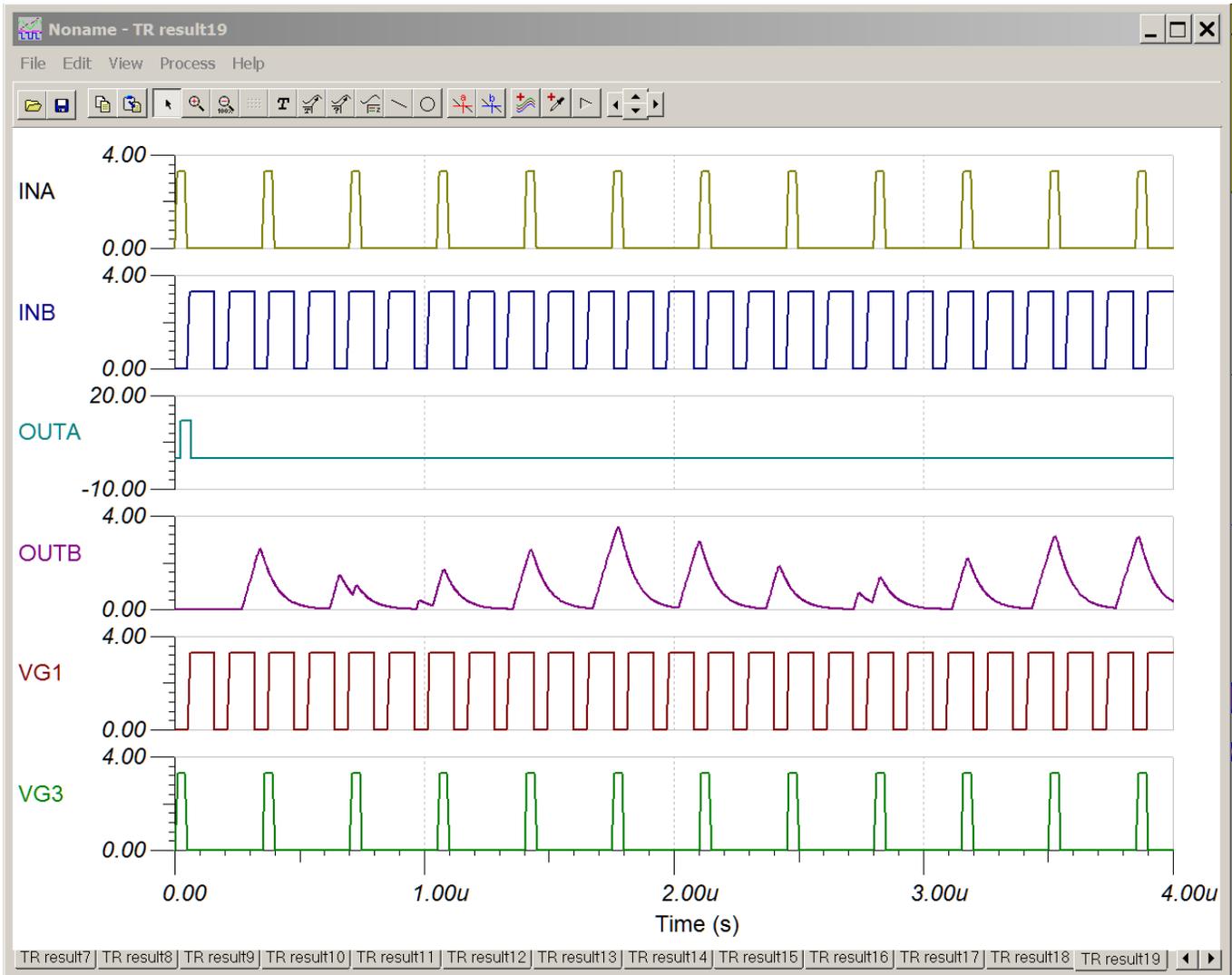


- Transient Analysis

The Transient Analysis dialog box contains the following settings:

- Start display: 0 [s]
- End display: 4u [s]
- Options:
 - Calculate operating point
 - Use initial conditions
 - Zero initial values
- Draw excitation

Transient Analysis simulation WAVEFORMS



Note: OUTB doesn't seem to "like" the 100.8nF C4.
OUTA seems ok with a 100uH @ 10 ohm internal resistance

SiC MOSFET spice files are easily added to this circuit, as well as other devices, etc., as required.

This only a quick demonstration of what can be done using one of the many "free" simulation packages with very little time, effort, learning curve, and no expense!

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