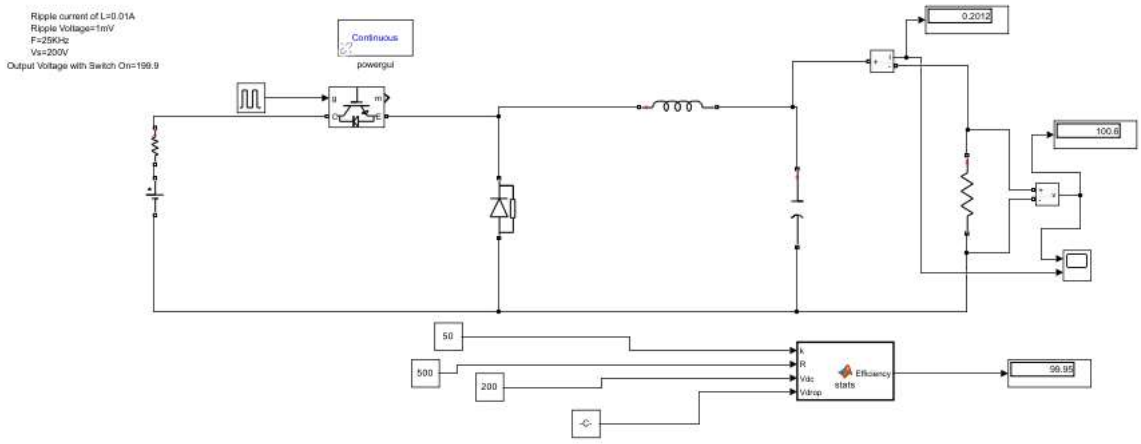
Buck_Converter

Details for Buck_Converter and above



G. Surya Anirudh

03-Apr-2024 13:00:06

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List of Tables

Model - Buck_Converter

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Full Model Hierarchy

1. Buck_Converter

Simulation Parameter	Value
Solver	VariableStepAuto
RelTol	1e-3
Refine	1
MaxOrder	5
ZeroCross	on

[more info]

Machine - Buck_Converter

Machine	Buck_Converter
Creation Date	03-Apr-2024 12:21:56

[more info]

System - Buck_Converter

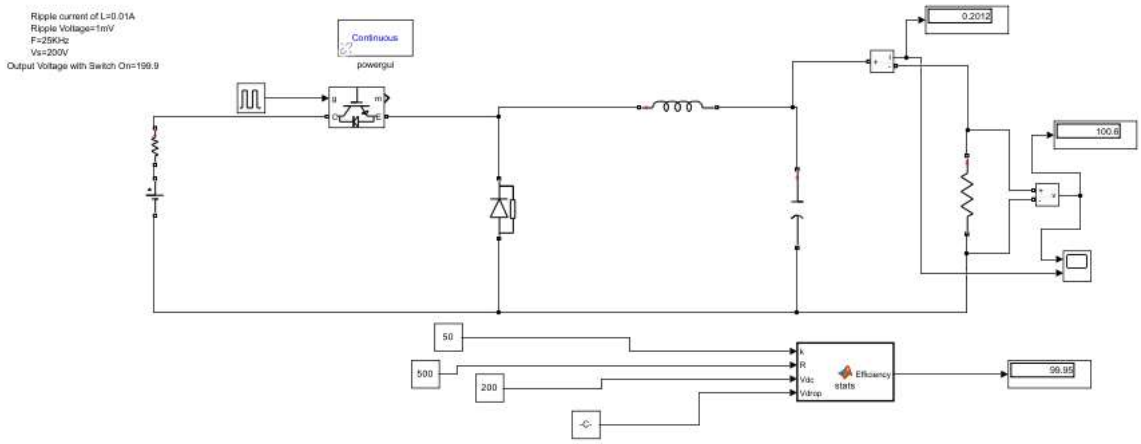

Table 1. Constant Block Properties

Name	Value	Out Data Type Str	Lock Scale	Sample Time	Frame Period
Constant	50	Inherit: Inherit from 'Constant value'	off	inf	inf
Constant1	500	Inherit: Inherit from 'Constant value'	off	inf	inf
Constant2	200	Inherit: Inherit from 'Constant value'	off	inf	inf
Constant3	200-199.9	Inherit: Inherit from 'Constant value'	off	inf	inf

Table 2. Current Measurement Block Properties

Name
Current Measurement

Table 3. DC Voltage Source Block Properties

Name	Amplitude	Measurements
DC Voltage Source	200	None

Table 4. Diode Block Properties

Name	Ron	Lon	Vf	IC	Rs	Cs	Measurements
Diode	0.001	0	0.8	0	500	250e-9	off

Table 5. DiscretePulseGenerator Block Properties

Name	Pulse Type	Time Source	Amplitude	Period	Pulse Width	Phase Delay	Sample Time
Pulse Generator	Time based	Use simulation time	1	1/25000	50	0	1

Table 6. Display Block Properties

Name	Format	Decimation	Floating
Display	short	1	off
Display1	short	1	off
Display2	short	1	off

Table 7. IGBT/Diode Block Properties

Name	Ron	Rs	Cs	Measurements
IGBT/Diode	1e-3	1e5	inf	on

Table 8. MATLAB Function Block Properties

Name	Script

MATLAB Function	`function Efficiency = stats(k,R,Vdc,Vdrop)`
	
	`Po=k*((Vdc-Vdrop).^2)/R;`
	`Pi=k*((Vdc-Vdrop)*Vdc)/R;`
	`Efficiency=(Po/Pi)*100`

Table 9. PSB option menu block Block Properties

Name	Simulation Mode	Iterations	Frequencyindice	Pbase	Err Max	Units V	Units W	Function Messages	Echomessages	Current Source Switches	Disable Snubber Devices	Disable Ron Switches	Disable Vf Switches	Display Equations	Methode	X0stat
powergui	Continuous	50	0	100e6	1e-4	kV	MW	off	off	off	off	off	off	off	off	blocks

Table 10. Series RLC Branch Block Properties

Name	Branch Type	Inductance	Seti L0	Measurements
Series RLC Branch	L	0.15	off	None
Series RLC Branch1	C	1e-3	off	None
Series RLC Branch2	R	1e-3	off	None
Series RLC Branch3	R	1e-3	off	None

Table 11. Voltage Measurement Block Properties

Name
Voltage Measurement

Appendix

Table 12. Block Type Count

BlockType	Count	Block Names
Series RLC Branch (m)	4	Series RLC Branch, Series RLC Branch1, Series RLC Branch2, Series RLC Branch3
Constant	4	Constant, Constant1, Constant2, Constant3
Display	3	Display, Display1, Display2
Voltage Measurement (m)	1	Voltage Measurement
Scope	1	Scope
PSB option menu block (m)	1	powergui
MATLAB Function	1	MATLAB Function
IGBT/Diode (m)	1	IGBT/Diode
DiscretePulseGenerator	1	Pulse Generator
Diode (m)	1	Diode
DC Voltage Source (m)	1	DC Voltage Source
Current Measurement (m)	1	Current Measurement