

B-007-HSD. 3-Phase 4-Wire Inverter $P_{OUT}=10kW$ (Equipped with HSDIP20 Package)



ROHM Solution Simulator Schematic Information

2026. Mar.
68UG093E Rev.001

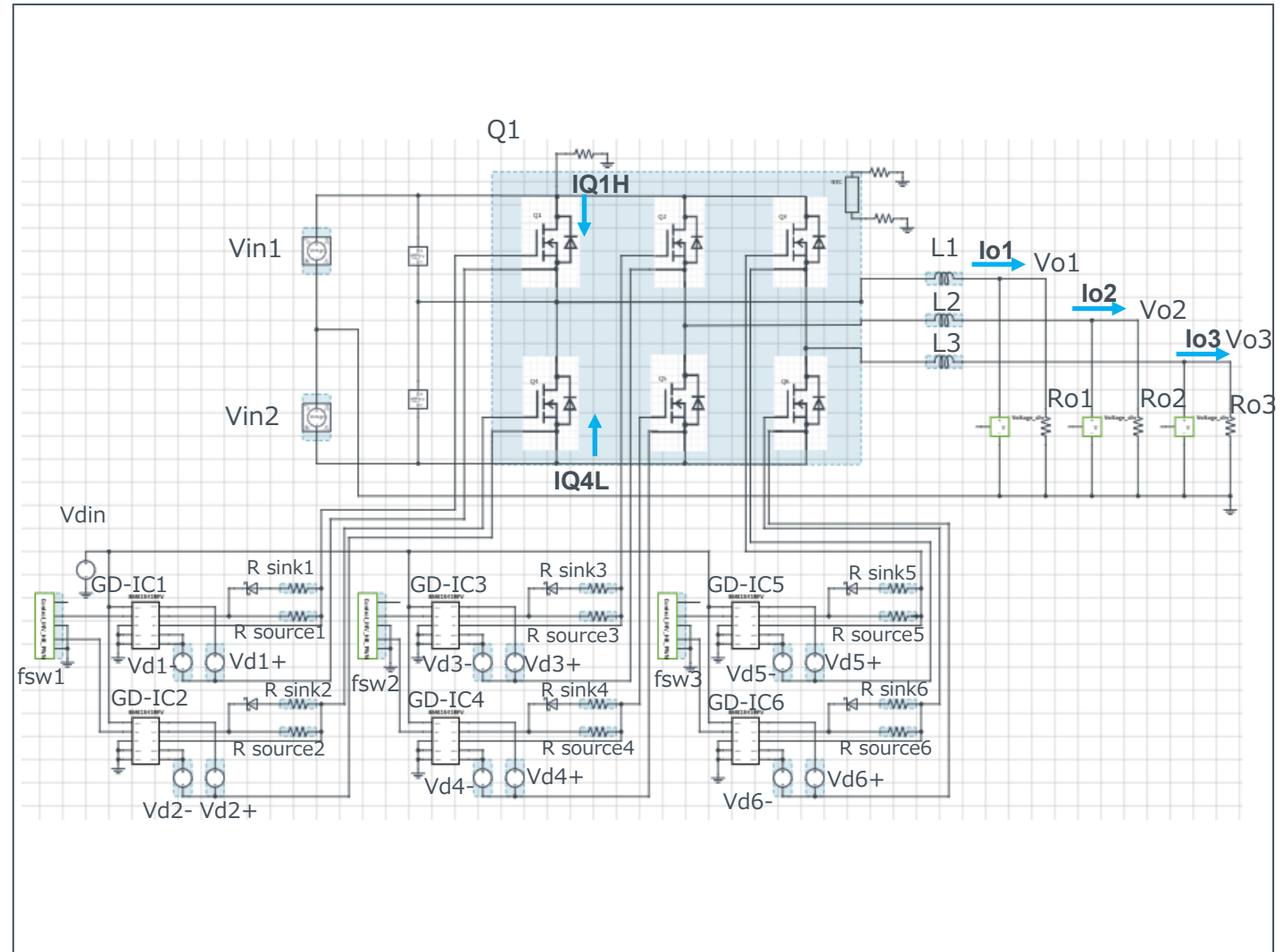
Simulation Parameters

Component name	Component	Default	Simulation Setting Range
Vin1,2	Input voltage	200Vdc	
Vo1-3	Output voltage	115Vac	
Io1-3	Output current	{Po/Vo/3}	
fsw1-3	Switching frequency	20kHz	10k – 300kHz
Tj	Temperature	100°C	
Vd1-6+	Gate Drive voltage H	18V	
Vd1-6-	Gate Drive voltage L	0V	
Vdin	Signal voltage level	5V	

Devices

Component Name	Component	Default	Simulation Setting Range
Q1	SiC Power Module	Selectable	
GD-IC1-6	Gate Driver	BM61S41RFV-C	
R sink1-6	Resistor for sink	ESR18 1Ω	
R source1-6	Resistor for source	ESR18 2Ω	
L1-3	Inductor	500μH	10μH - 2mH
Ro1-3	Output Resistor	{Vo/Io}	

Simulation Circuit



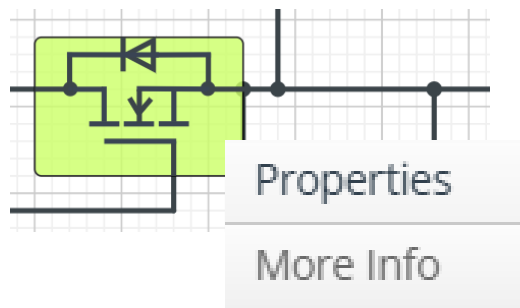
Note: The Loss_calc component is a utility module to support power loss calculation and does not affect the simulation results of circuit operation or performance.

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Selectable Devices

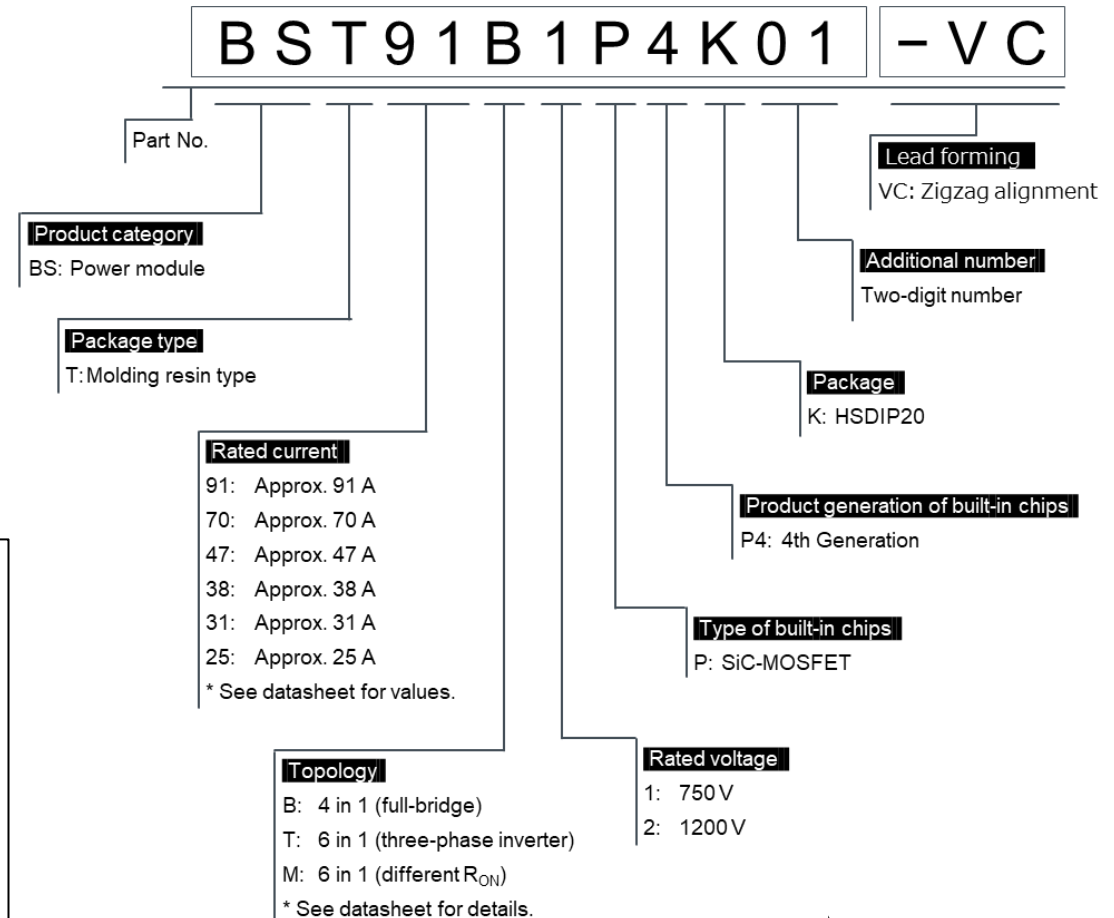
Component name	Component
Q1	SiC Power Module (HSDIP20)

For more information, go to “**More Info**” and click on “**Link to Datasheet**”.



- Model Links:
- [Link To Product](#)
 - [Link To Datasheet](#)
 - [Link To Buy](#)
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SiC Power Module part number information



Product Lineup: [SiC Power Module](#)

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Selectable Devices

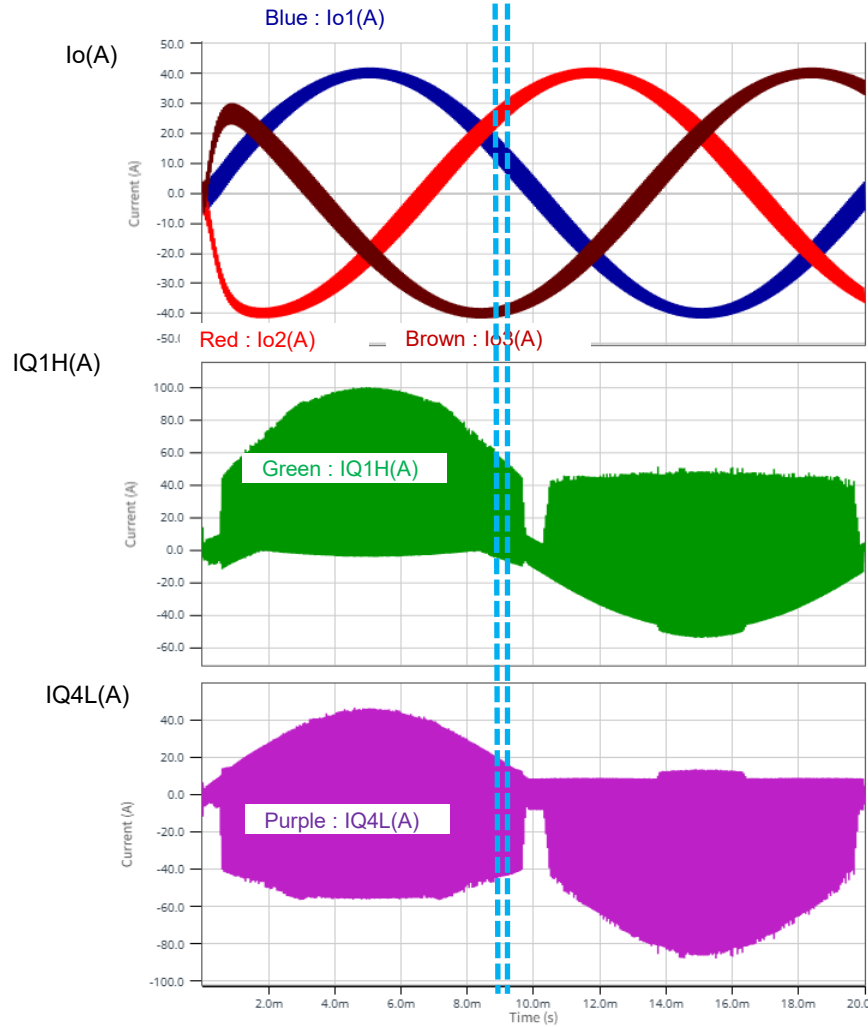
Component name	Component	Product No.	feature
GD-IC1-6	Gate Driver	BM61S41RFV-C	for SiC MOSFET Isolation Voltage : 3750 Vrms I/O Delay Time (max) : 65ns Miller Clamp : Built-in UVLO : 14.5V

Simulation Waveform1

Q1-3 : SiC Power Module
SCZ4004DTA

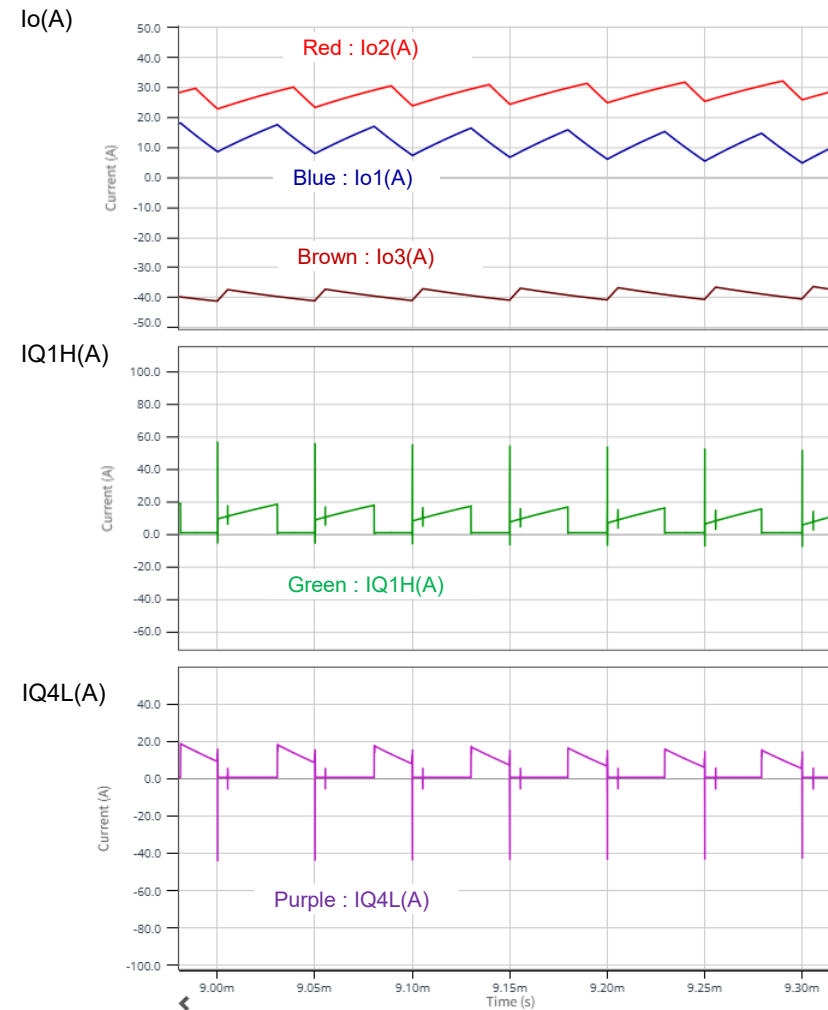
Io, IQ (0~20.0ms)

Vin=200Vdc+200Vdc
Vo=115Vac Po=10kW Tj=100°C



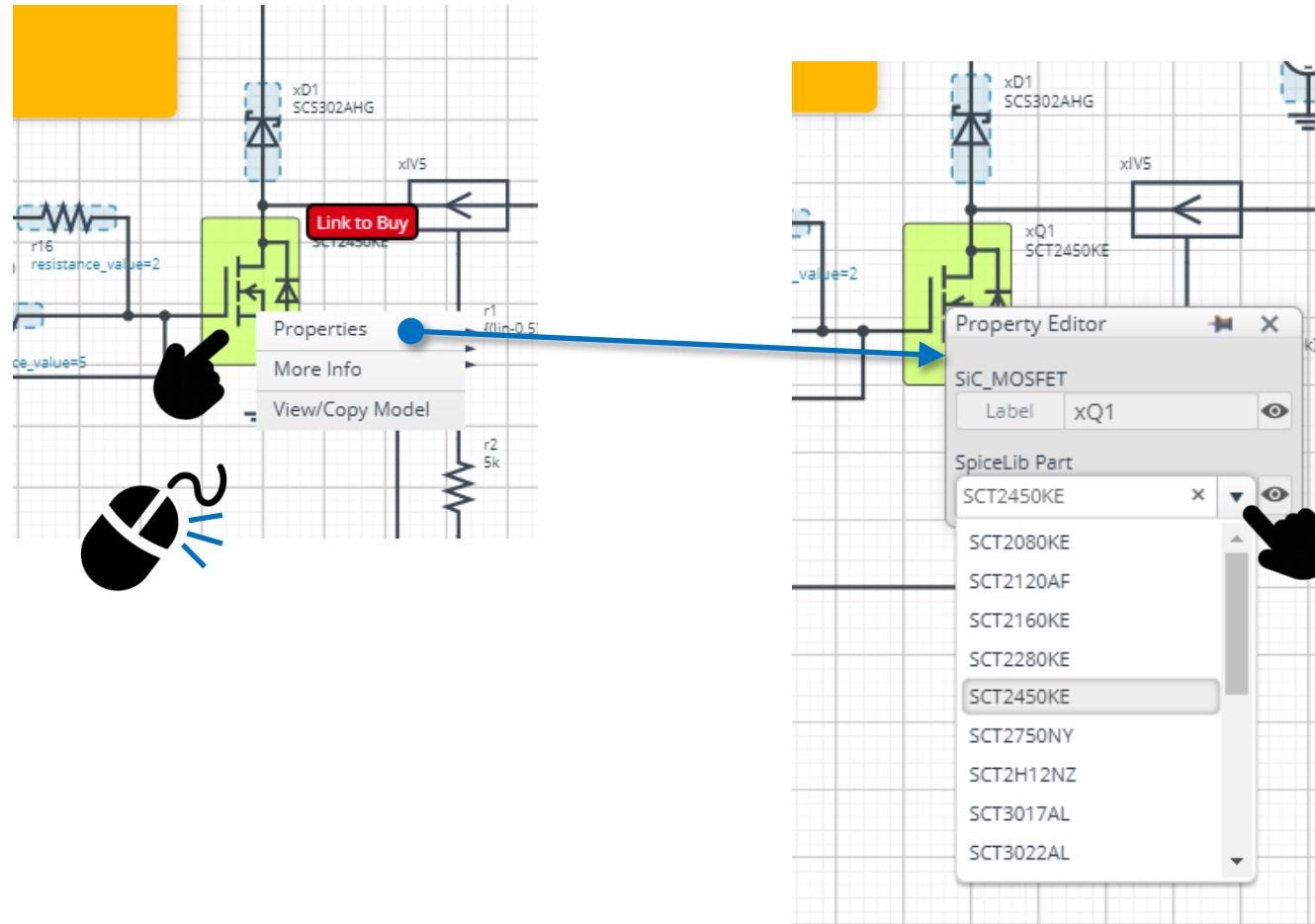
(9.0~
9.3ms)

Expansion (9.0~9.3ms)



How to change the devices

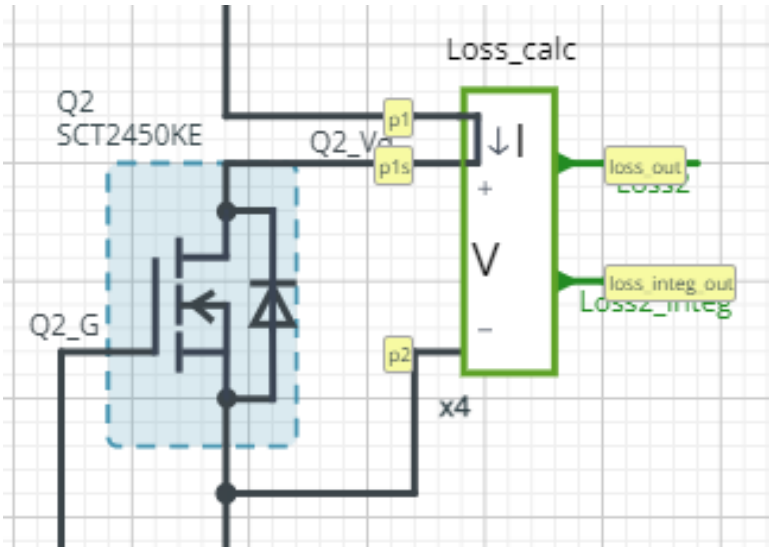
Right-click on the device → Select Properties → Pull down “SpiceLib Part” → Select the product



Loss Calculation Model outputs the instantaneous value of power loss and its integration.

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Loss calculation model 'Loss_calc'



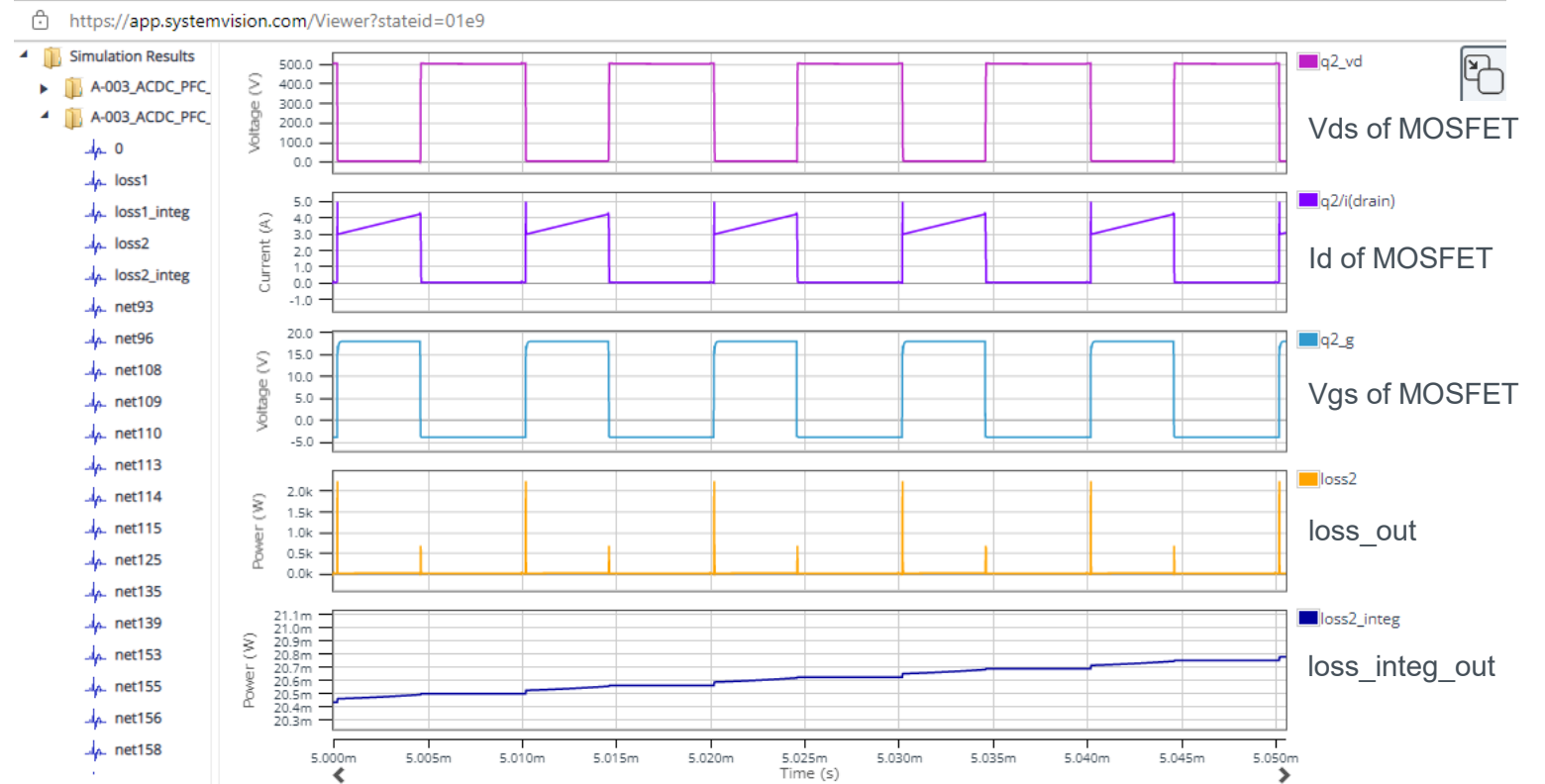
$$loss_out(t) = I(t) \times V(t)$$

$$loss_integ_out = \int_0^t loss_out(t)dt$$

I : Current through p1 to p1s

V : Voltage between p1s and p2

Waveform example



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