

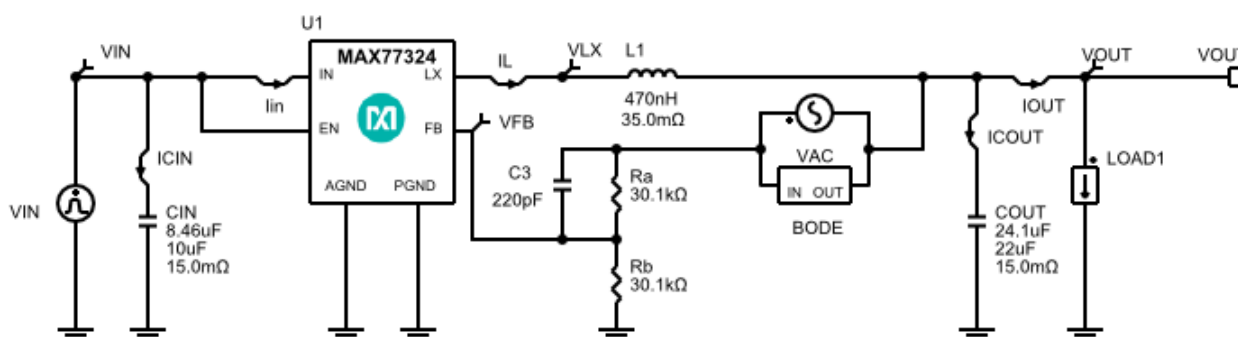
## Initial Design

1.0

### Design Requirements

Parameter	Value
Minimum Input Voltage	2.66V
Maximum Input Voltage	4.8V
Nominal Input Voltage	3.8V
Output Voltage	1.2V
Output Current	1.5A
Performance Priority	Balance Efficiency and Size
BOM Priority	Cost
Ambient Temperature	25°C

### Schematic



Note : AC Loop simulation may fail if the Load Current is low enough to engage Skip mode, because Skip mode is hysteretic and there is no AC Loop to measure.

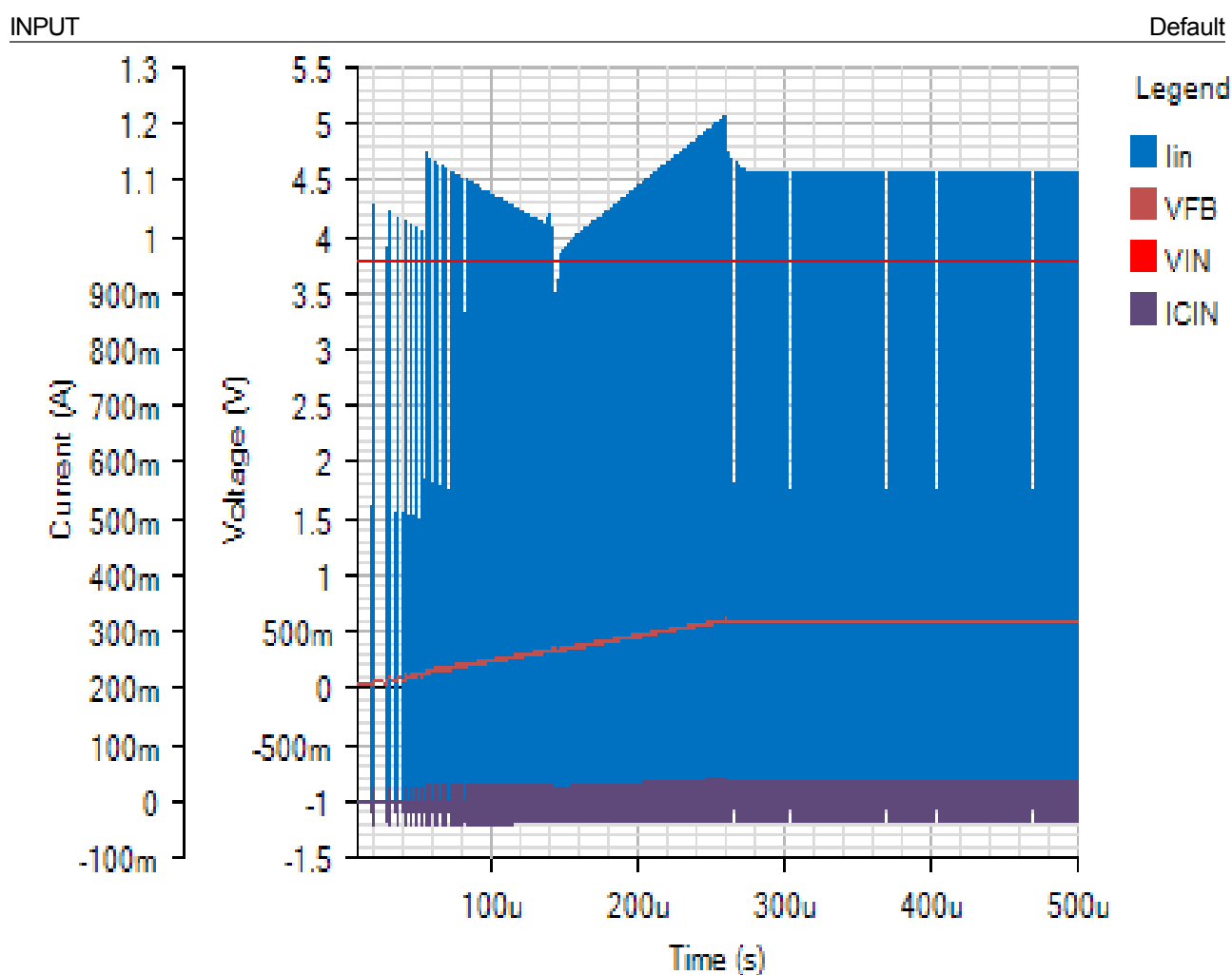
### BOM

Ref	Qty	Part Number	Manufacturer	Description
U1	1	MAX77324	User-Defined	IC
C3	1	<a href="#">GCM1555C1H221JA16D</a>	Murata Manufacturing	Cap Ceramic 220pF 50V C0G 5% Pad SMD 0402 125°C Automotive T/R

CIN	1	C2012X7R1A106K125AC	TDK	Cap Ceramic 10uF 10V X7R 10% SMD 0805 125C Plastic T/R
COUT	1	GRM31CR70J226KE19L	Murata	Cap Ceramic 22uF 6.3V X7R 10% SMD 1206 125C Embossed T/R
L1	1	HMLE20161B-R47MDR	Cyntec	Inductor 470nH 29mOhm 4.4A Isat 4.2A I rms
Ra	1	ERJ2RKF3012X	Panasonic	Res Thick Film 0402 30.1K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R
Rb	1	ERJ2RKF3012X	Panasonic	Res Thick Film 0402 30.1K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R

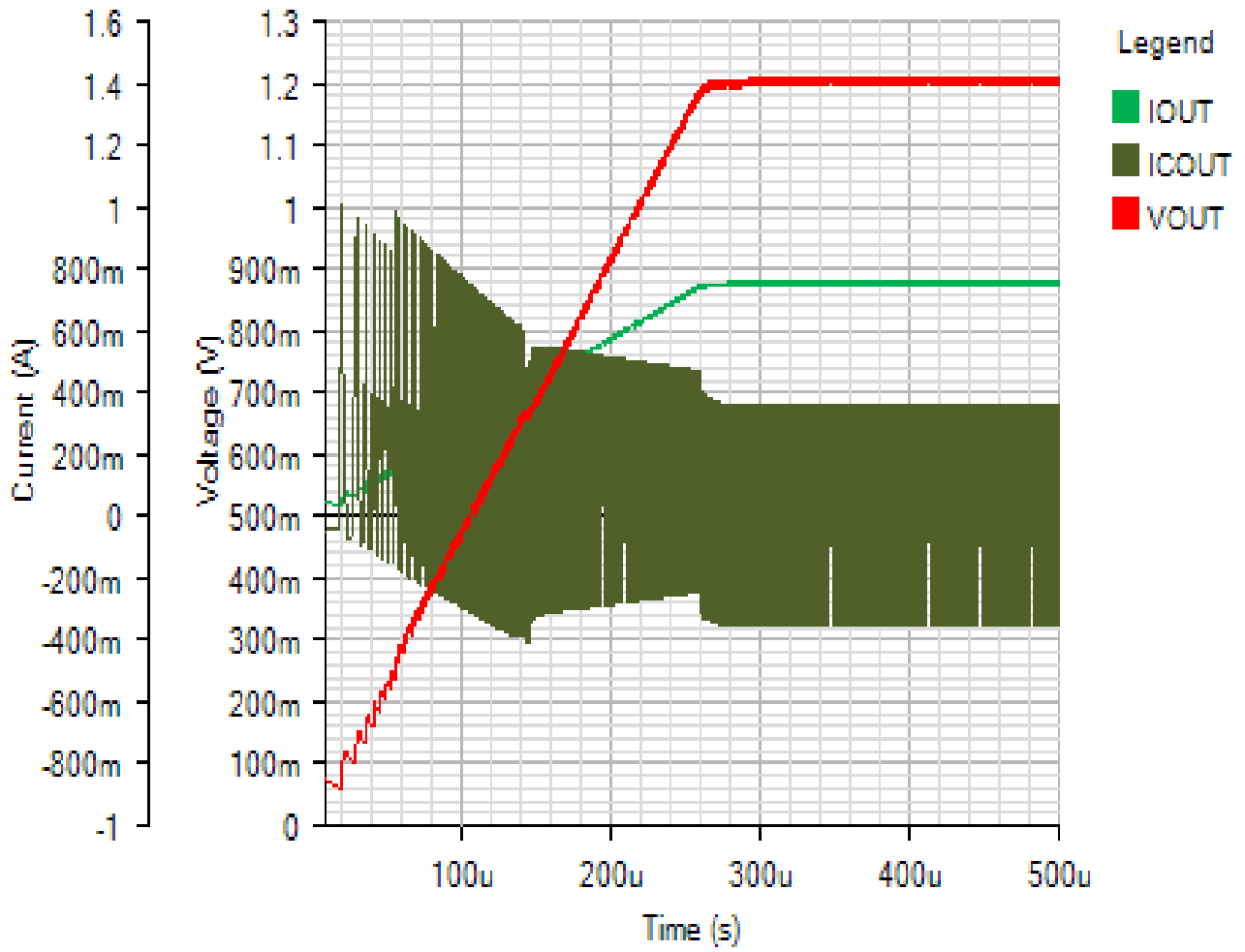
## Simulation Results

Start Up - Sun Nov 18 2018 16:09:51



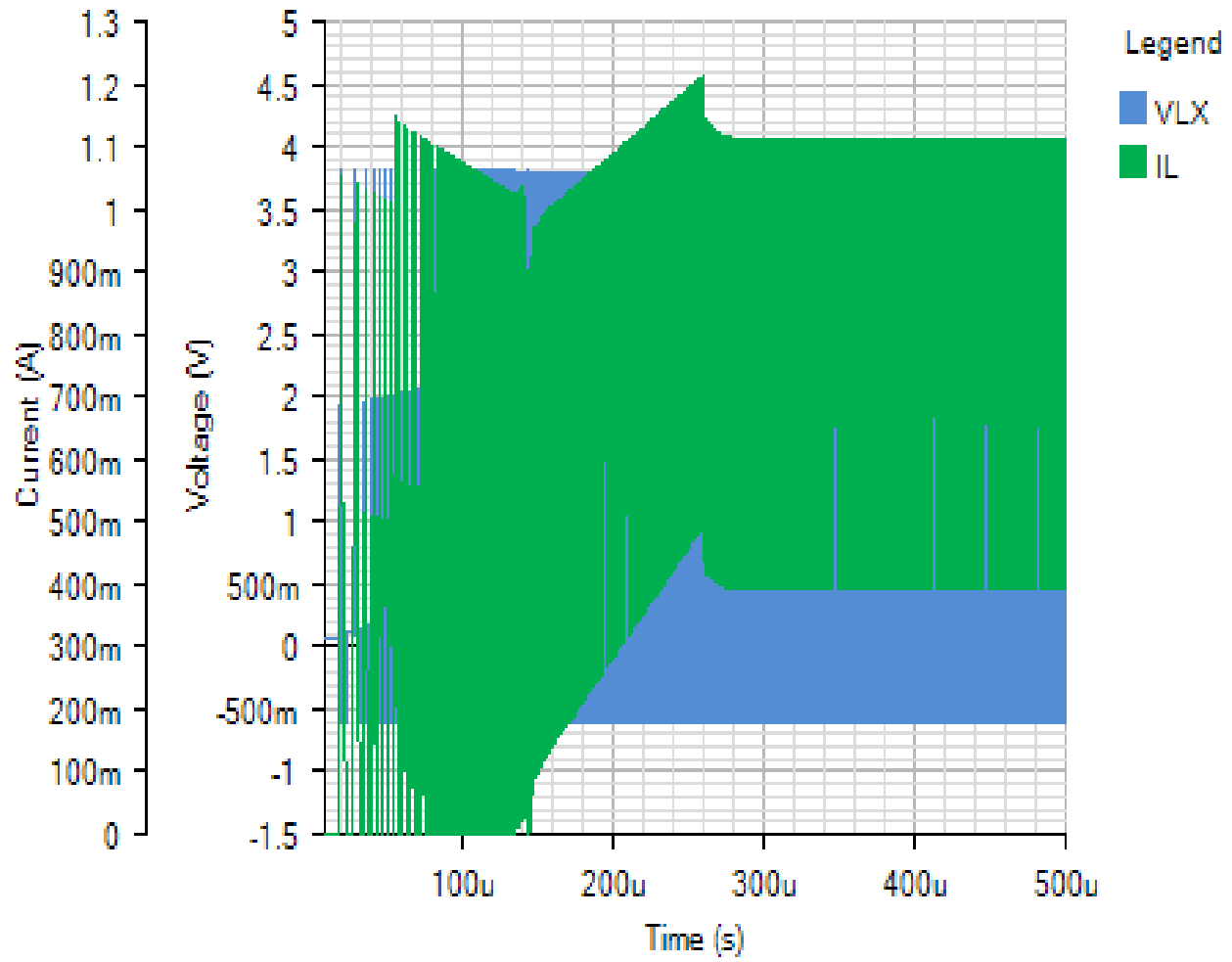
OUTPUT

Default



SWITCHING

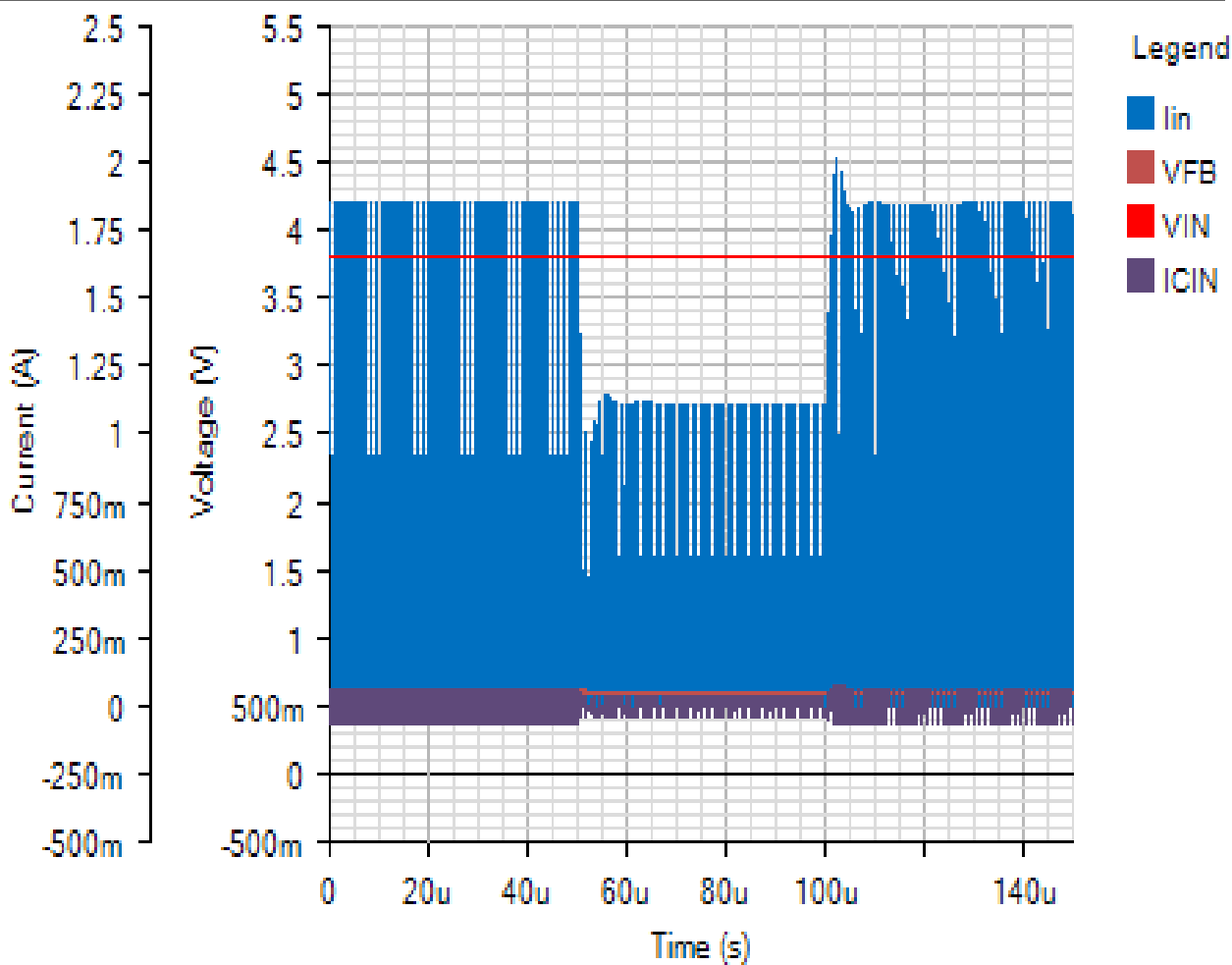
Default



Load Step - Sun Nov 18 2018 16:09:51

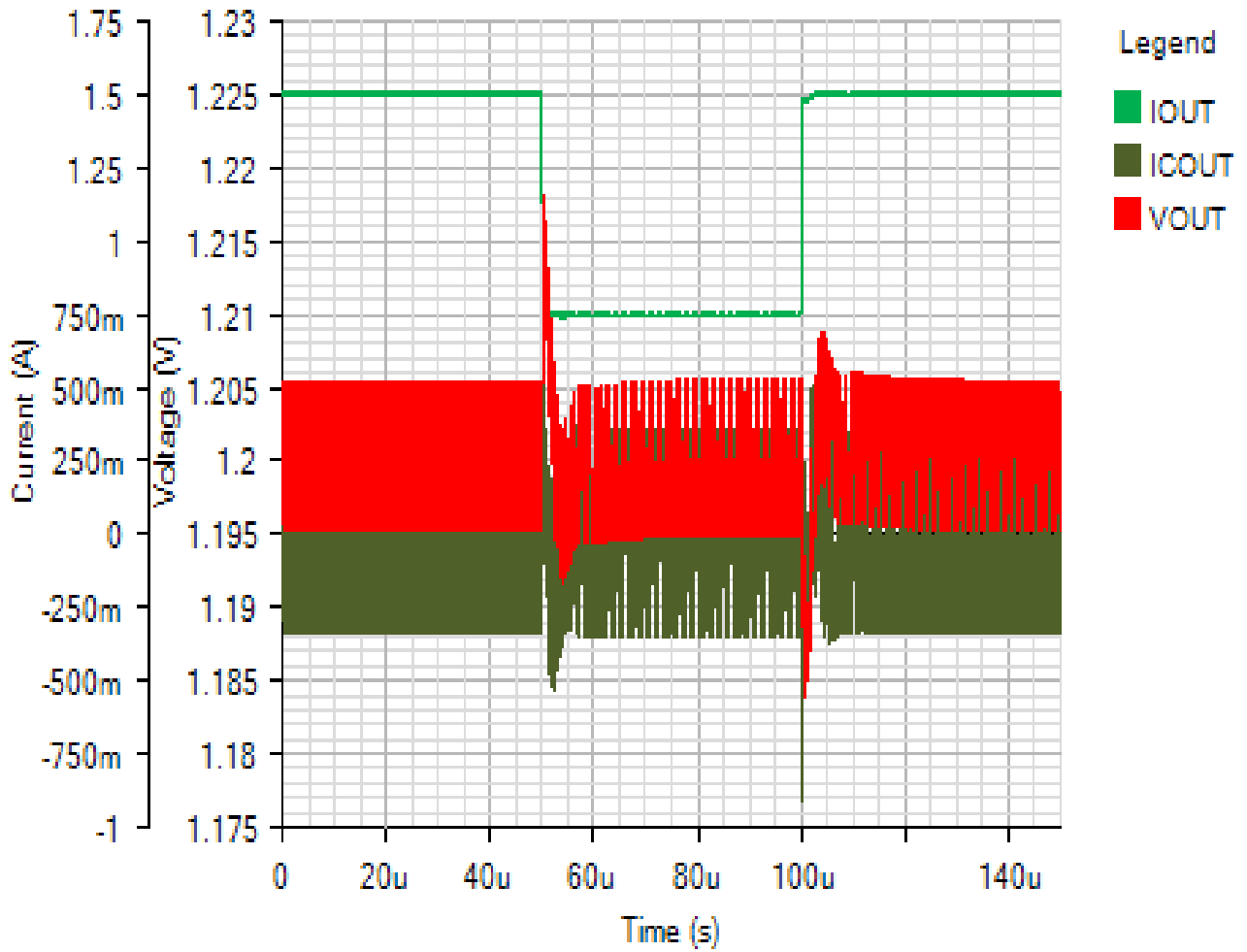
INPUT

Default



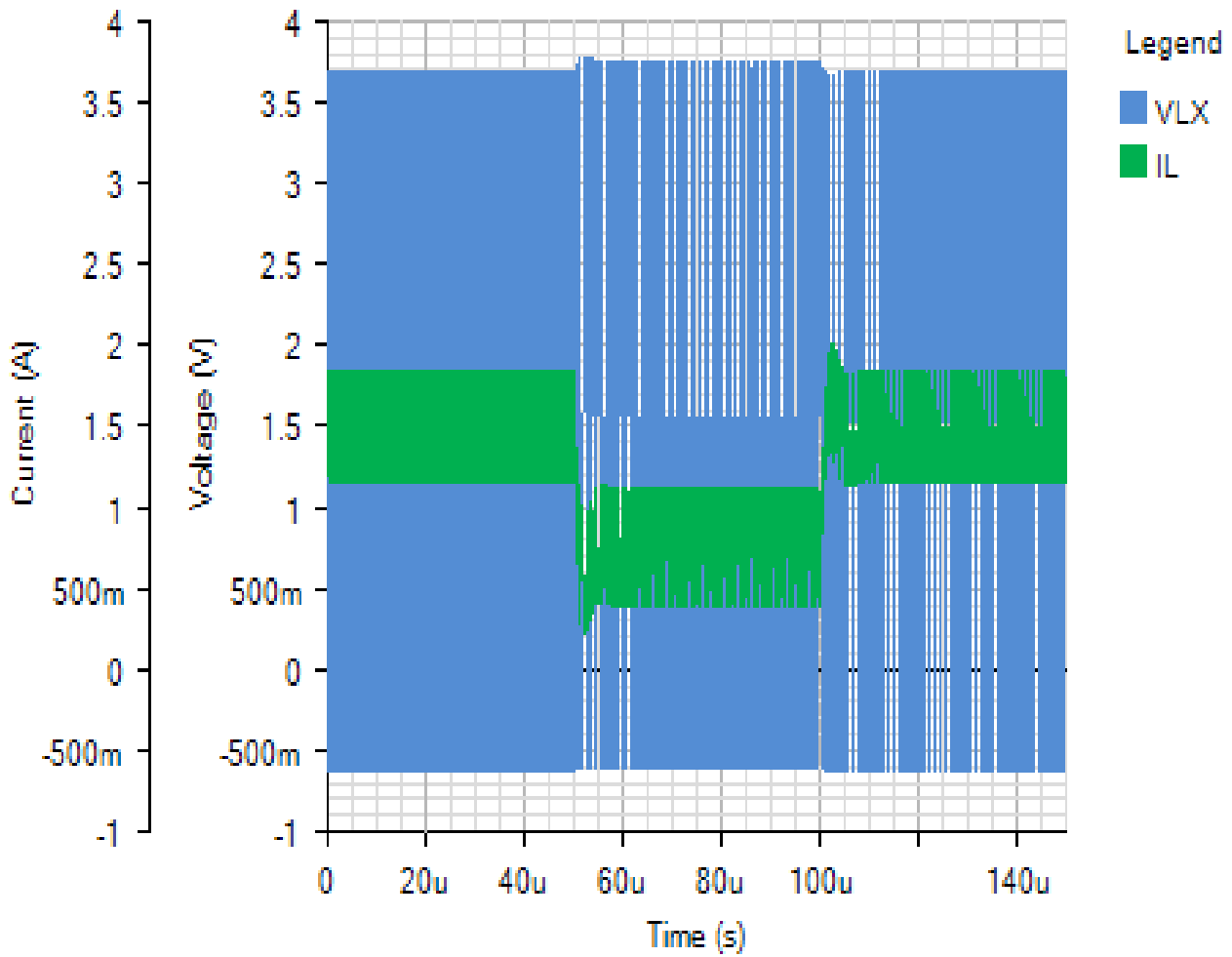
OUTPUT

Default



SWITCHING

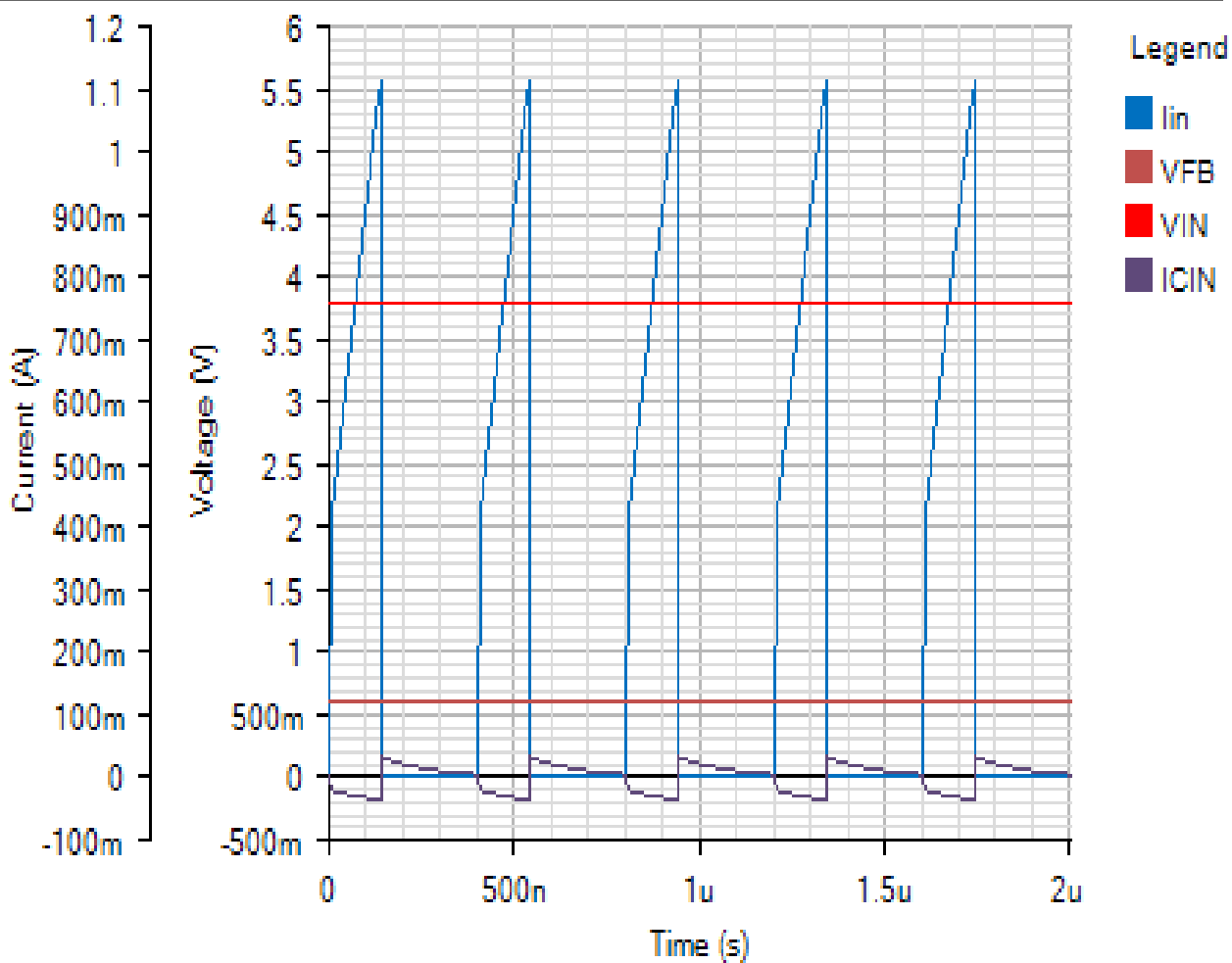
Default



Steady State - Sun Nov 18 2018 16:09:51

INPUT

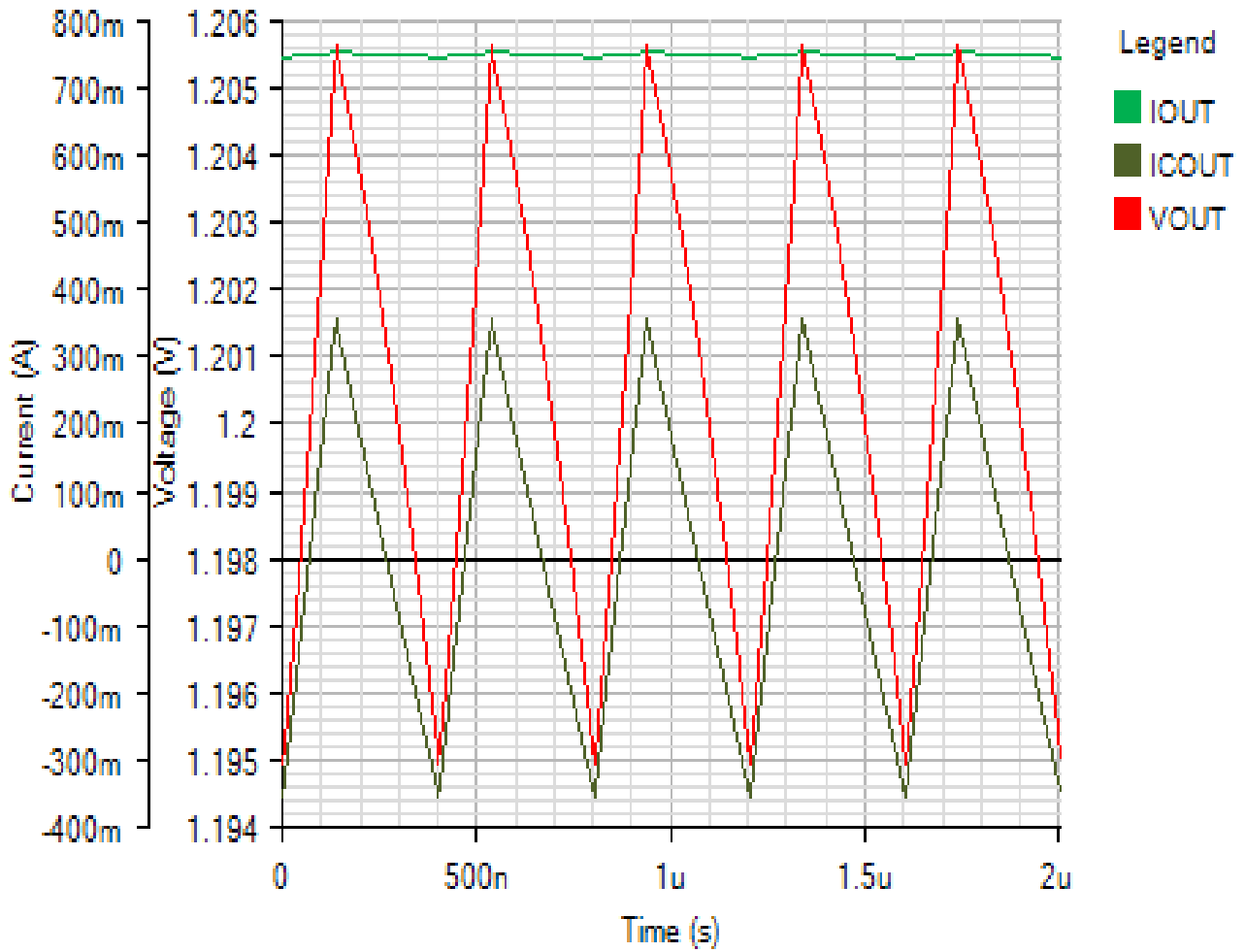
Default





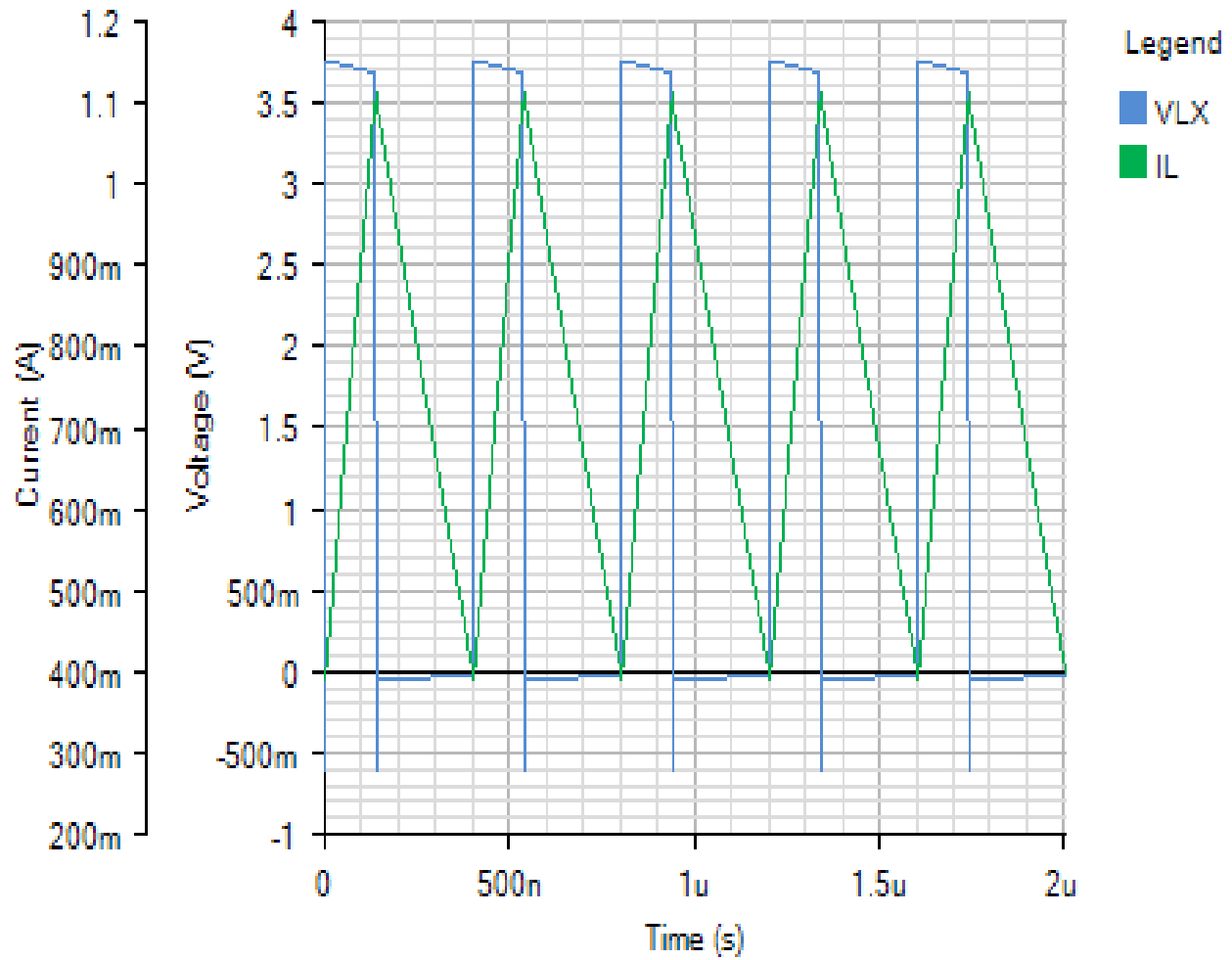
OUTPUT

Default



SWITCHING

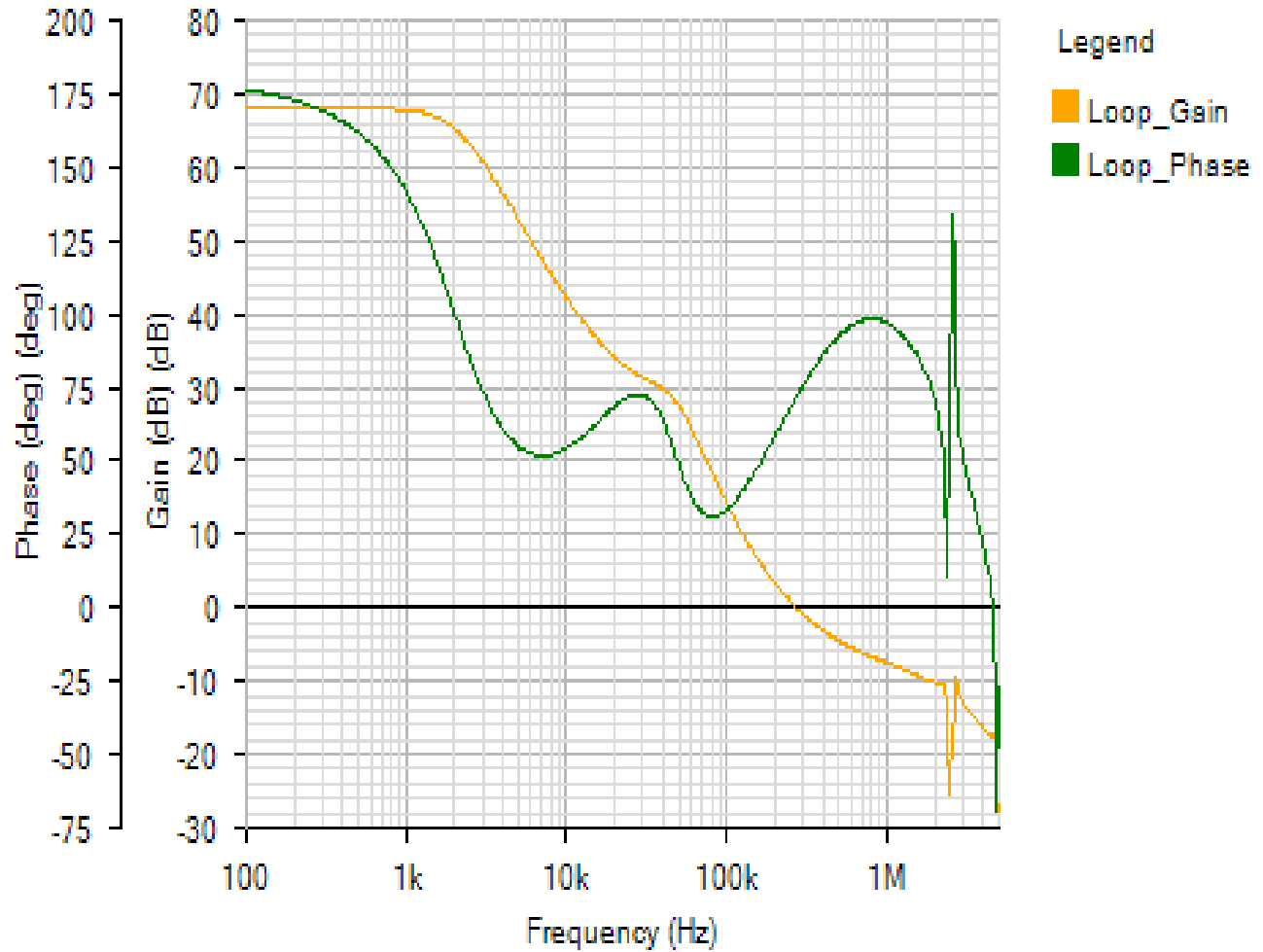
Default



AC Loop - Sun Nov 18 2018 16:09:51

BODE

Default



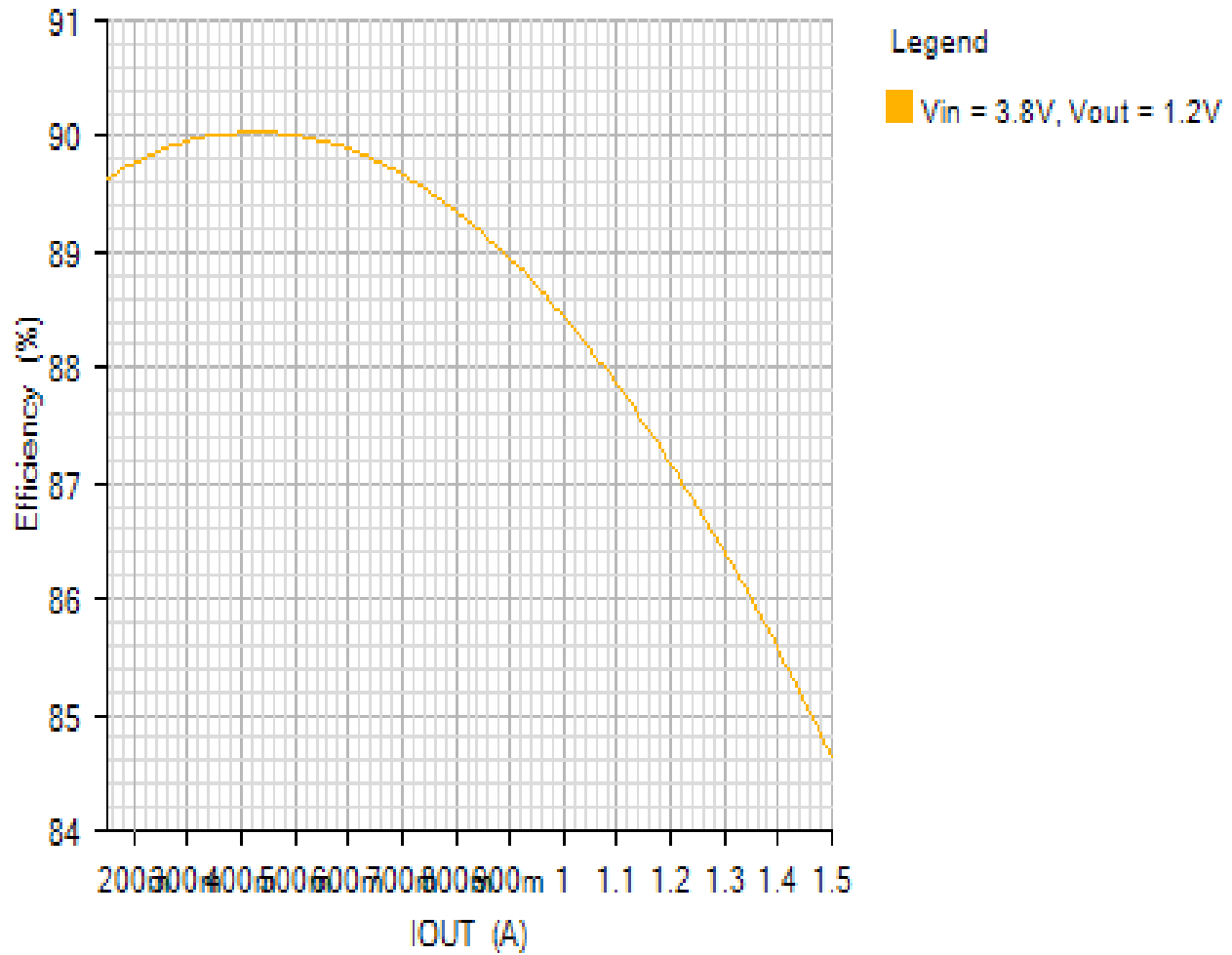
Phase Margin: 71.68° at a crossover frequency of 272.3kHz



Efficiency - Sun Nov 18 2018 16:09:51

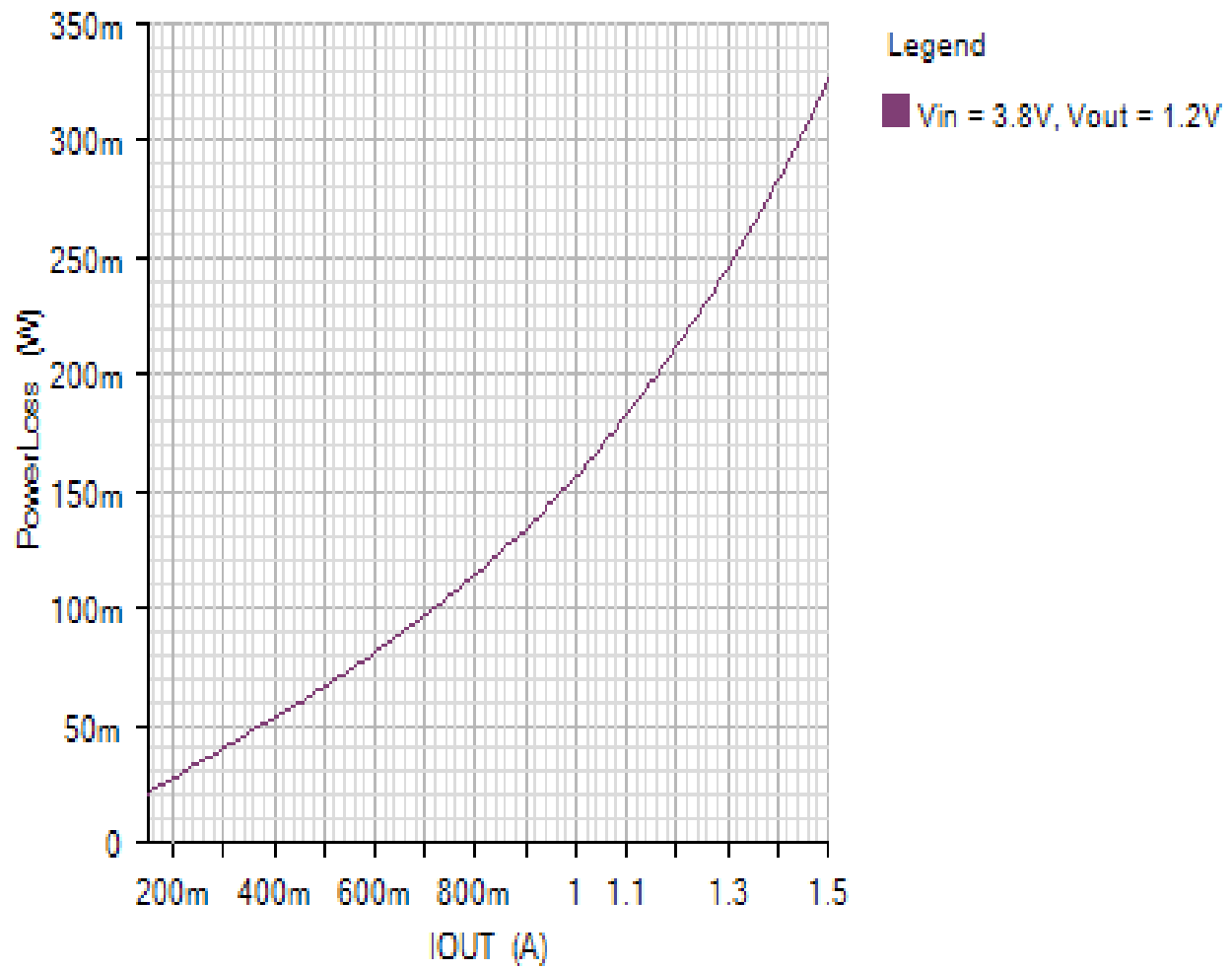
EFFICIENCY\_PLOT

Default



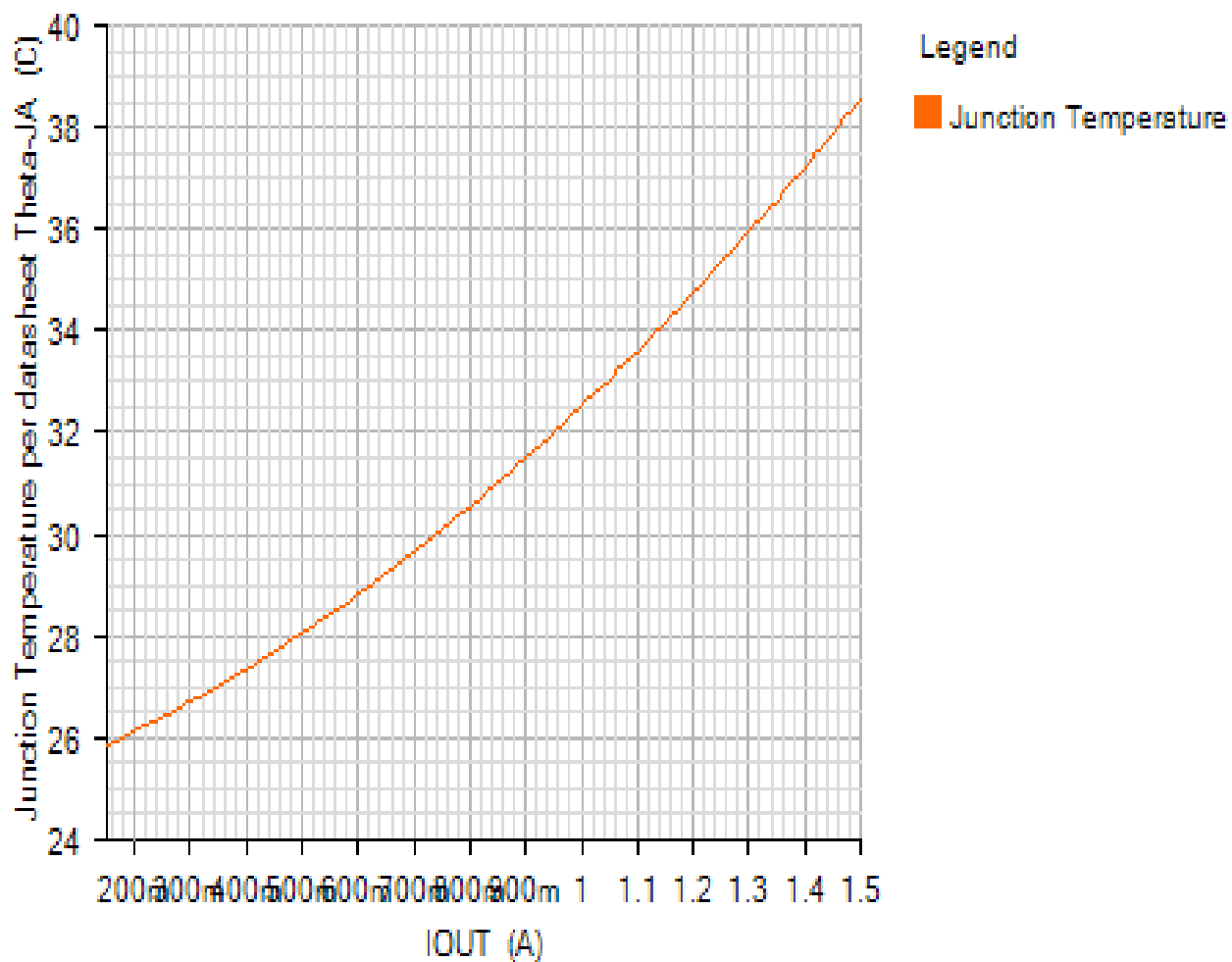
POWER\_LOSS\_PLOT

Default

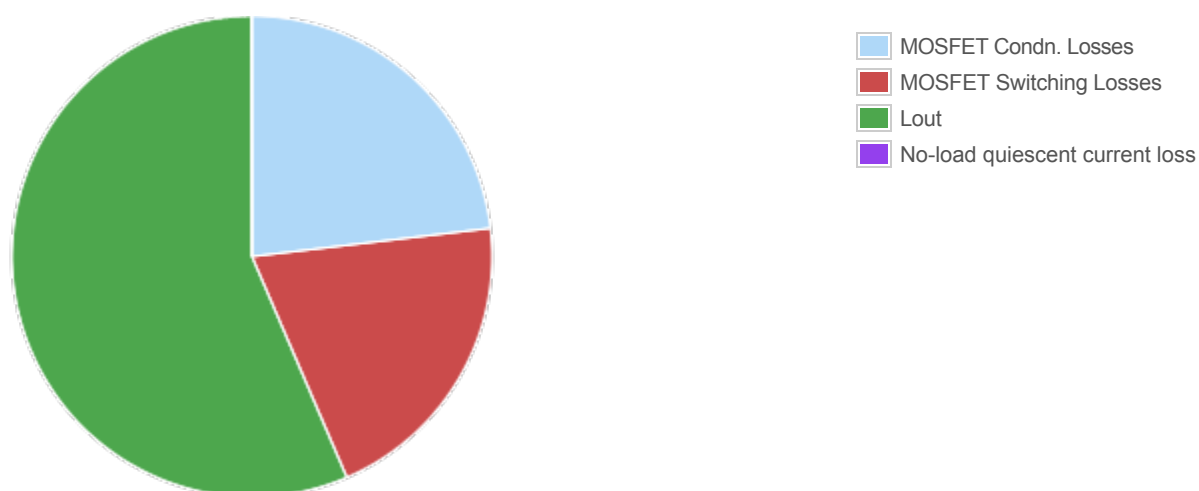


JUNCTION\_TEMPERATURE\_PLOT

Default



Losses



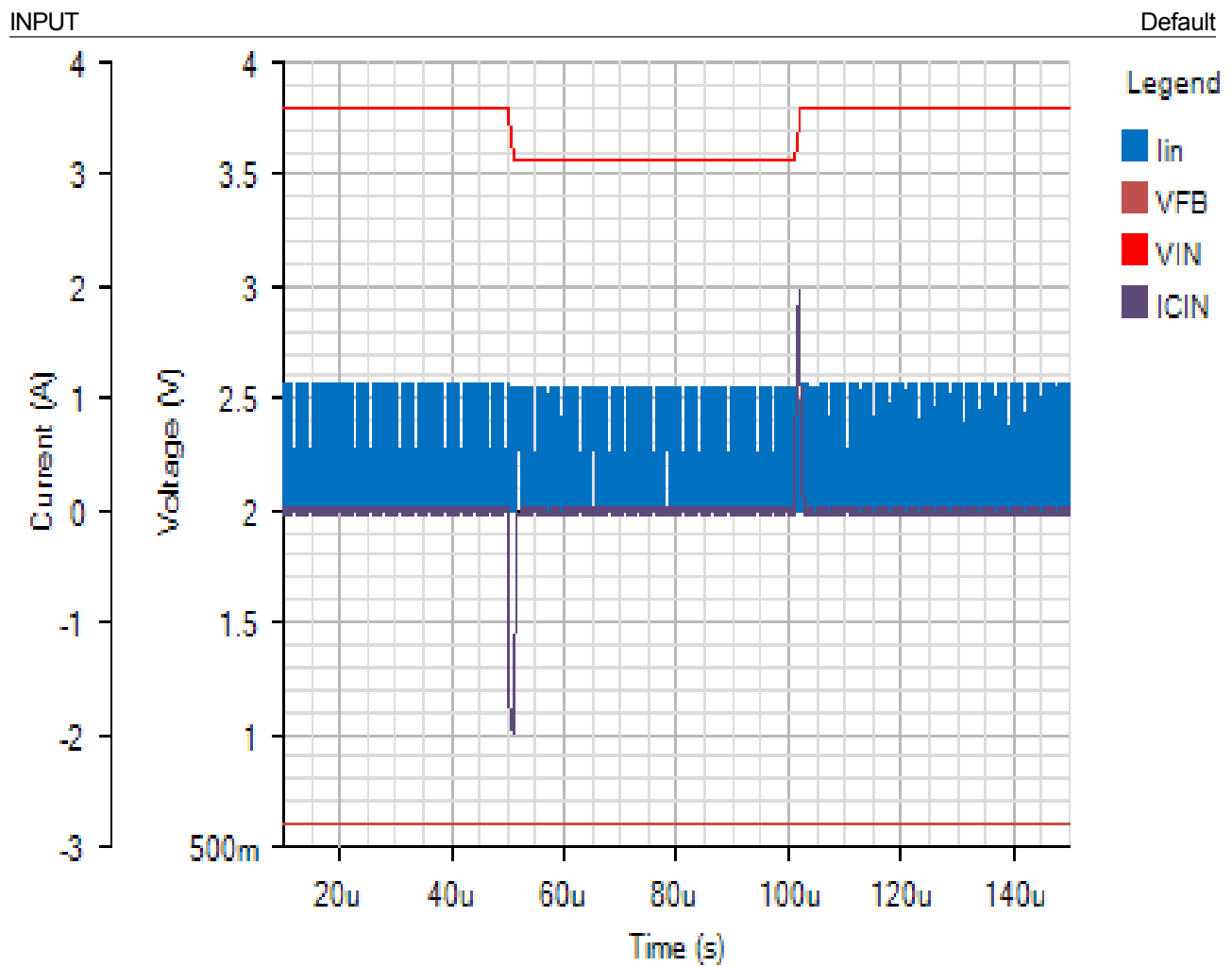
Component

Loss (W)

% of total

Component	Loss (W)	% of total
MOSFET Condn. Losses	0.075542	23.1
MOSFET Switching Losses	0.066667	20.4
Lout	0.184287	56.4
No-load quiescent current loss	0.00019	0.1
Total	0.326686	100

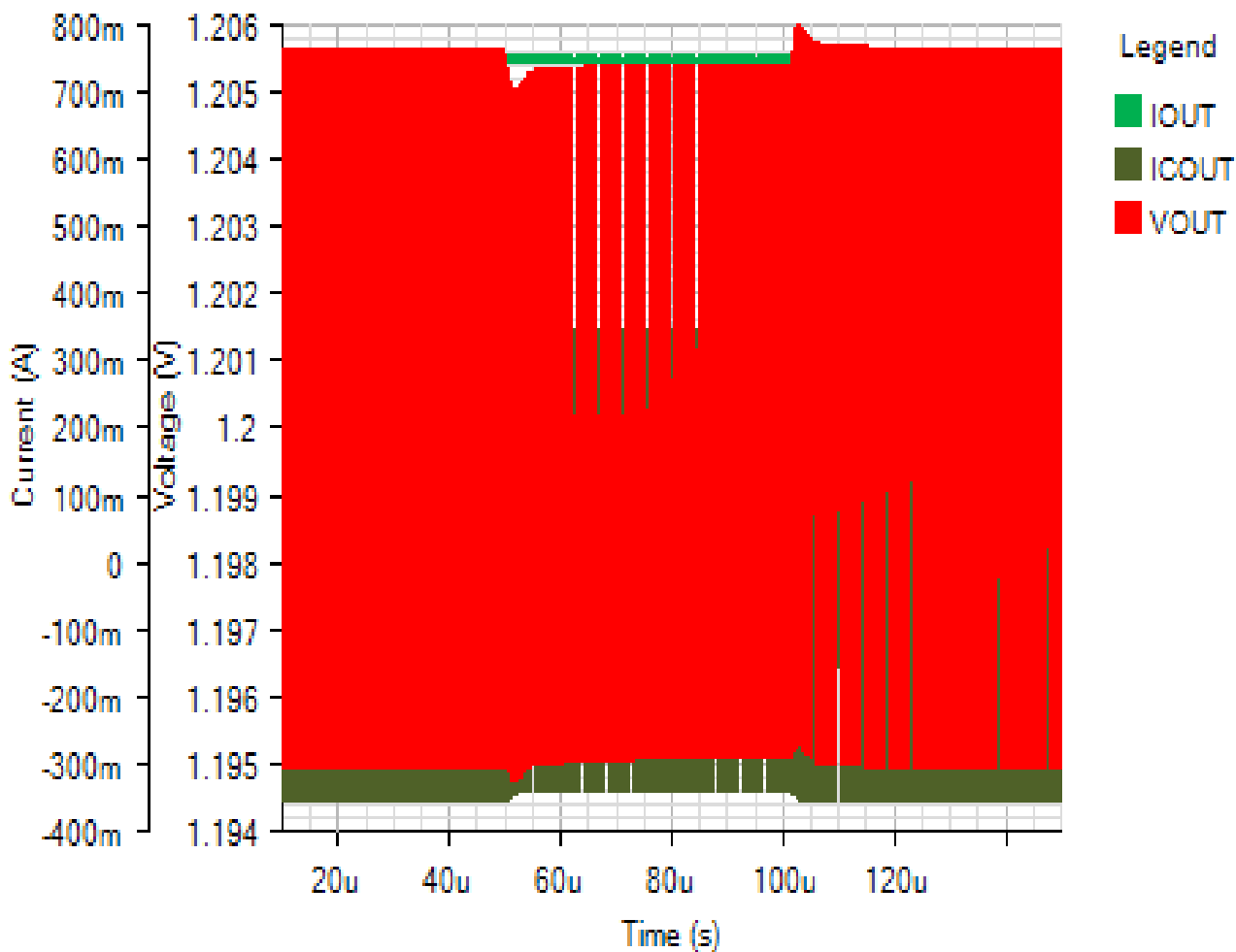
Line Transient - Sun Nov 18 2018 16:09:51





OUTPUT

Default



SWITCHING

Default

