

## Initial Design

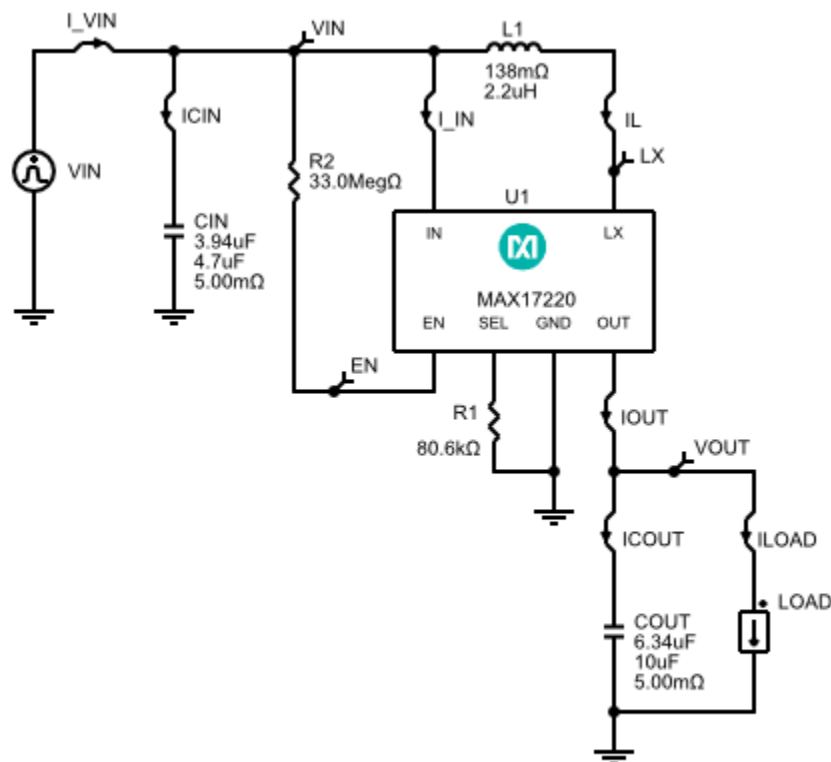
1.0

**Design Requirements**

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Parameter	Value
Package	WLP
Minimum Input Voltage	1.4V
Maximum Input Voltage	1.6V
Nominal Input Voltage	1.5V
Output Voltage	3.3V
Output Current	0.03A
Performance Priority	Balance Efficiency and Size
BOM Priority	Cost
Ambient Temperature	25°C

## Schematic



If the current level (starting current for Load Steps) is too low, Steady State and Load Step analyses may fail due to PFM operation.

## BOM

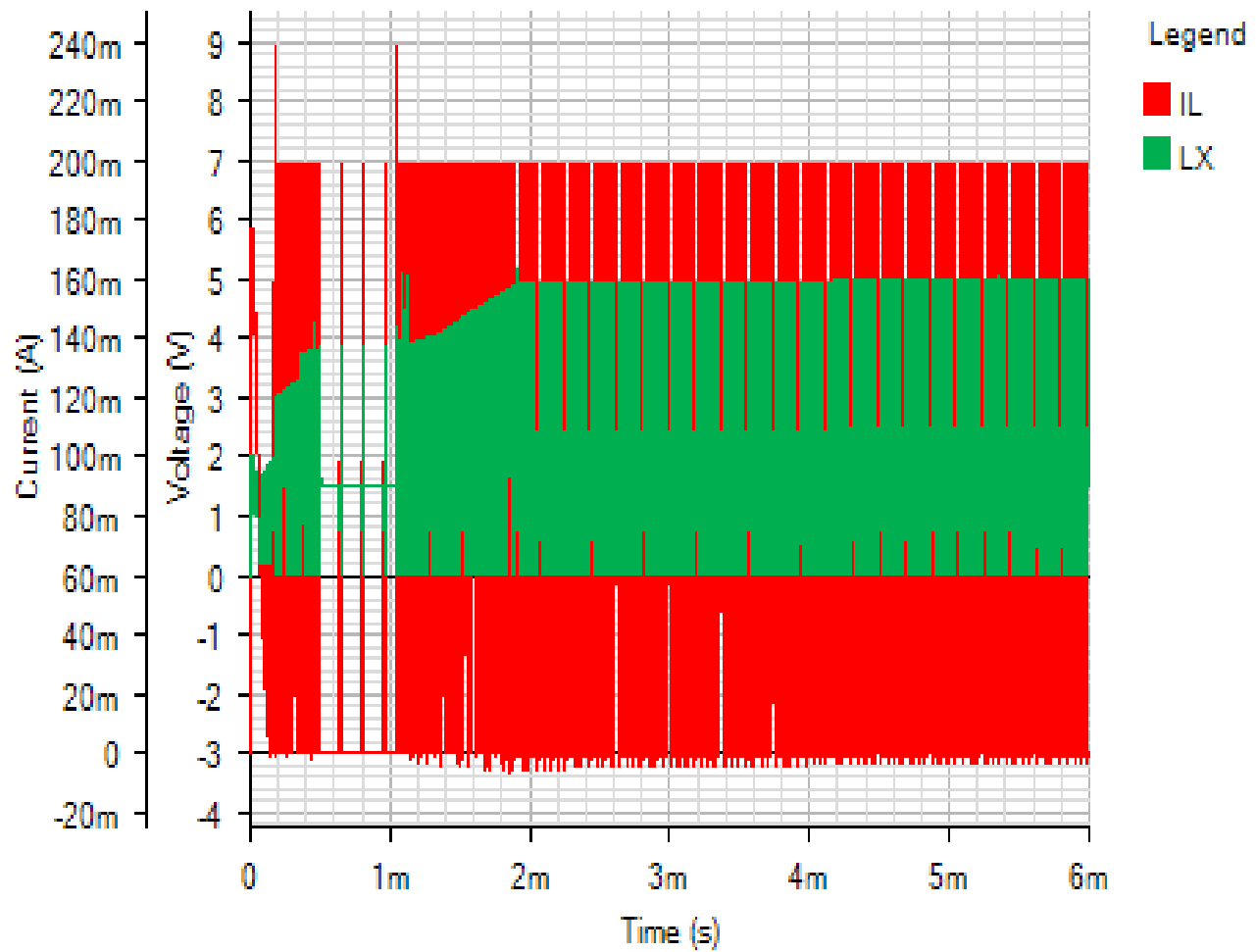
Ref	Qty	Part Number	Manufacturer	Description
U1	1	MAX17220	User-Defined	IC
CIN	1	<a href="#">C1608X7S1A475K080AC</a>	TDK	Cap Ceramic 4.7uF 10V 0603 125C
COUT	1	<a href="#">C2012X6S1C106K085AC</a>	TDK	Cap Ceramic 10uF 16V 0805 105C
L1	1	<a href="#">MLP2016H2R2MT0S1</a>	TDK	Inductor 2.2uH 20% 110mOhm 0.6175A Isat 1.2A Irms
R1	1	<a href="#">ERJ2RKHF8062X</a>	Panasonic	Res Thick Film 0402 80.6K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R
R2	1	<a href="#">HMC0402JT33M0</a>	Stackpole Electronics, Inc	Res Thick Film 0402 33M Ohm 5% 0.063W(1/16W) ±400ppm/°C Pad SMD T/R

## Simulation Results

Start Up - Sun Nov 18 2018 18:38:19

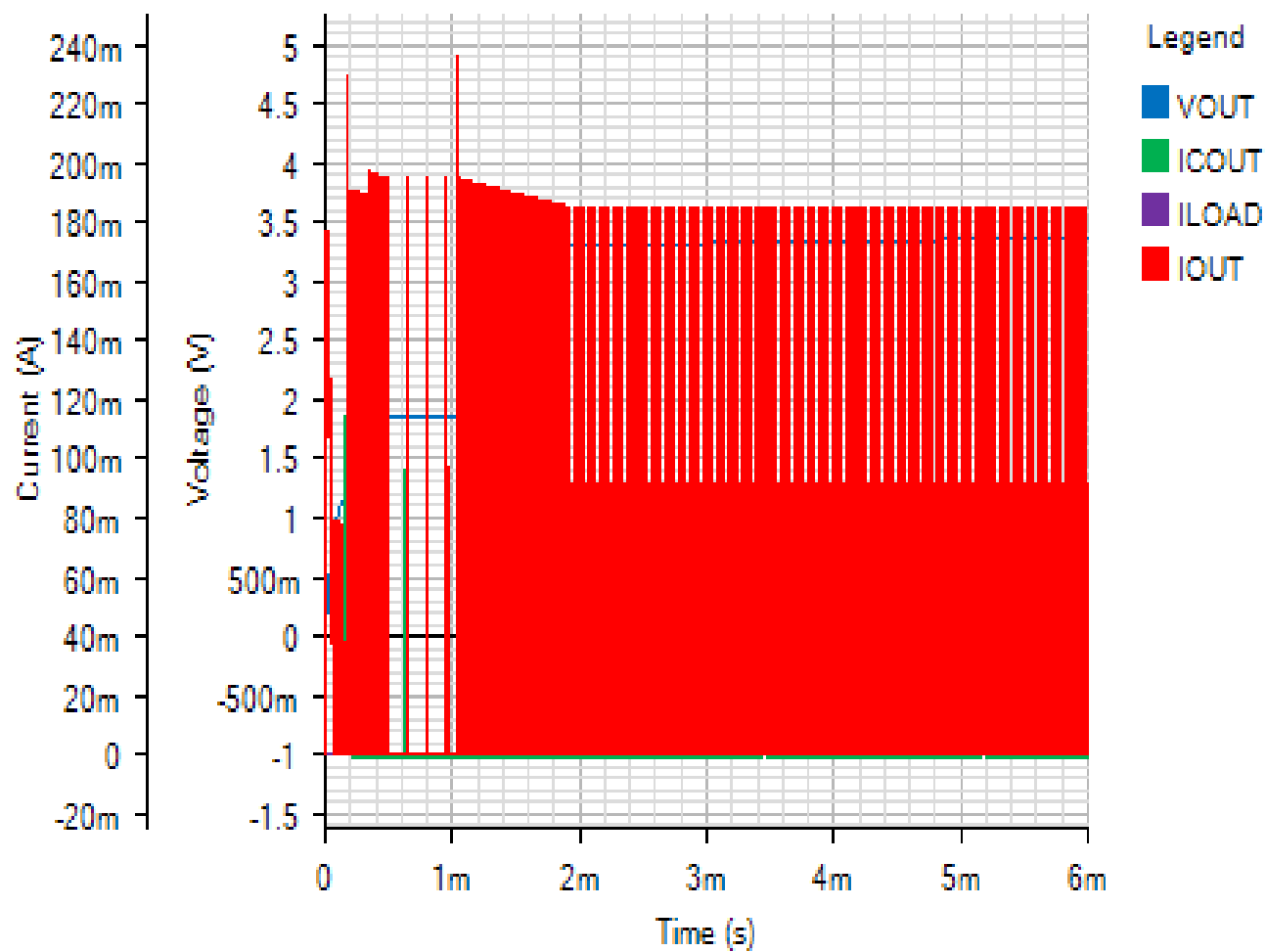
SWITCHING

Default



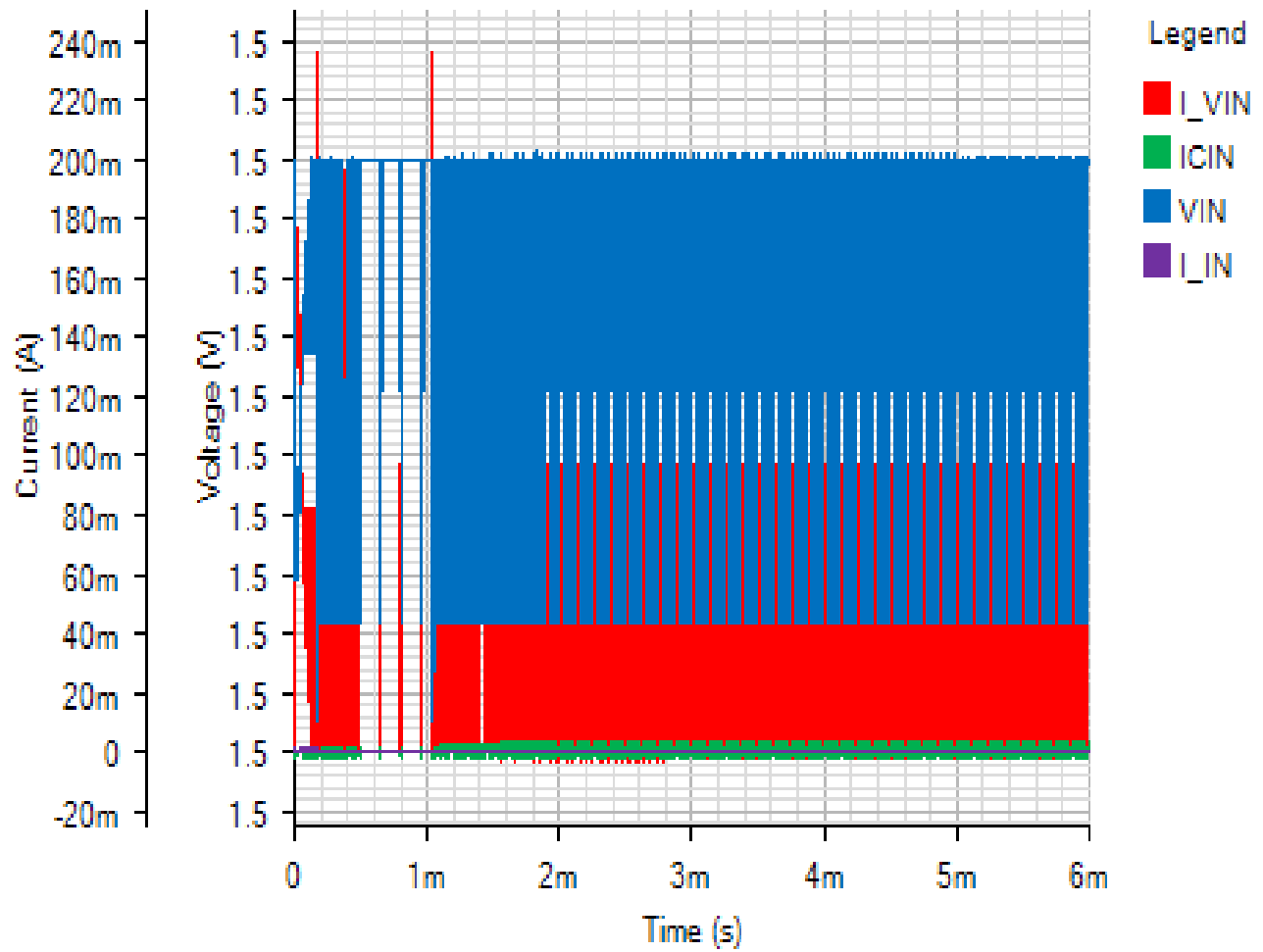
OUTPUT

Default



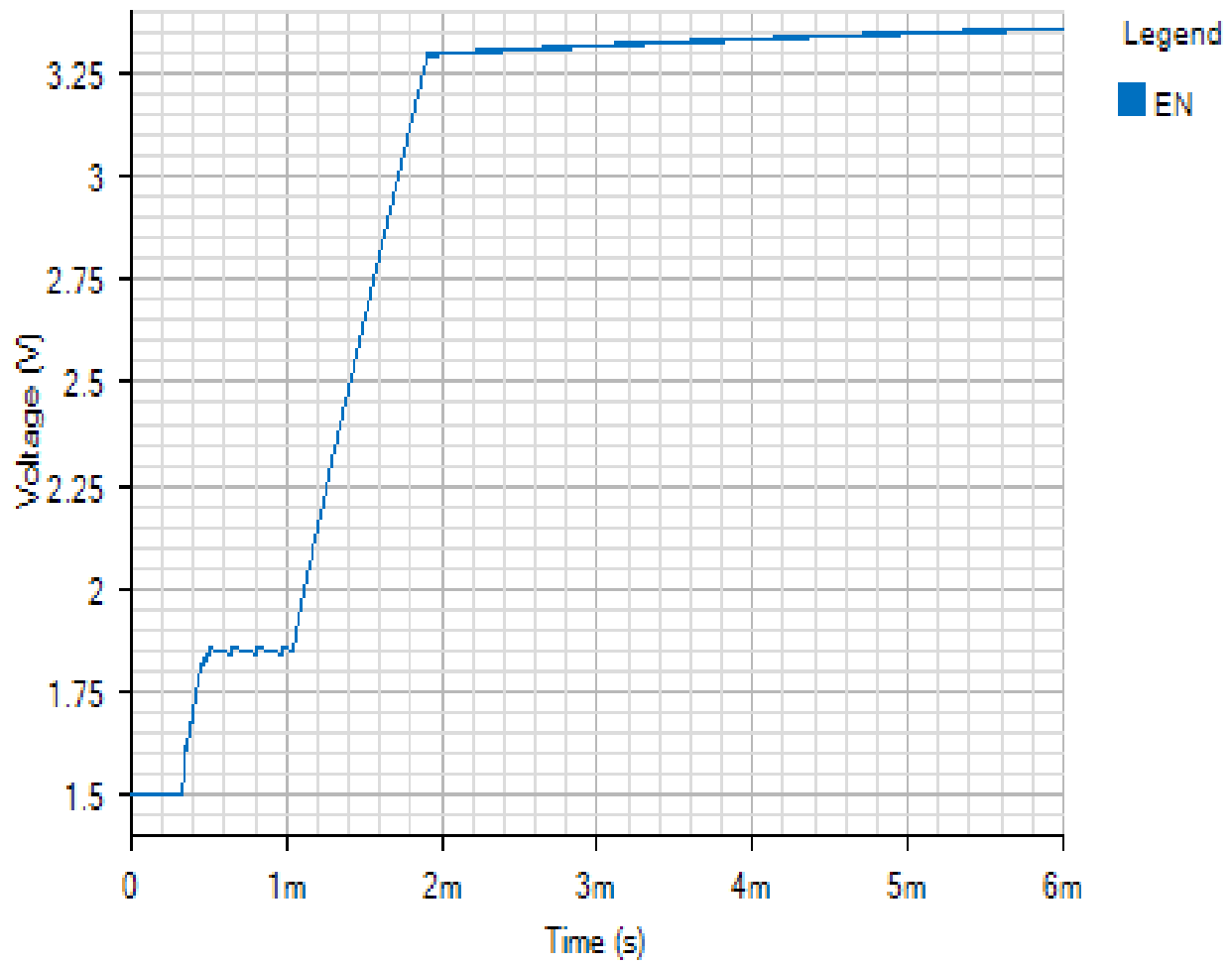
INPUT

Default

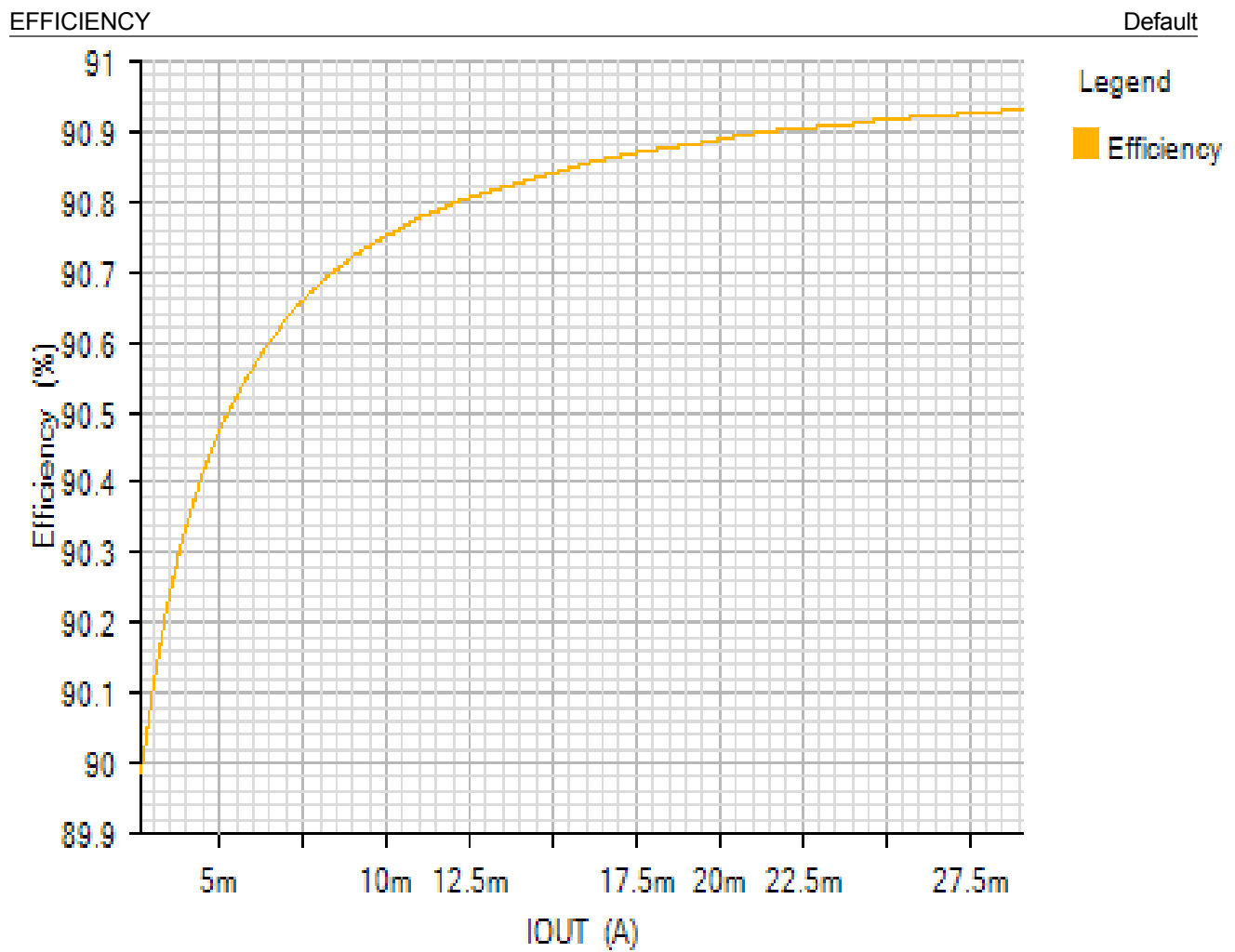


IC

Default

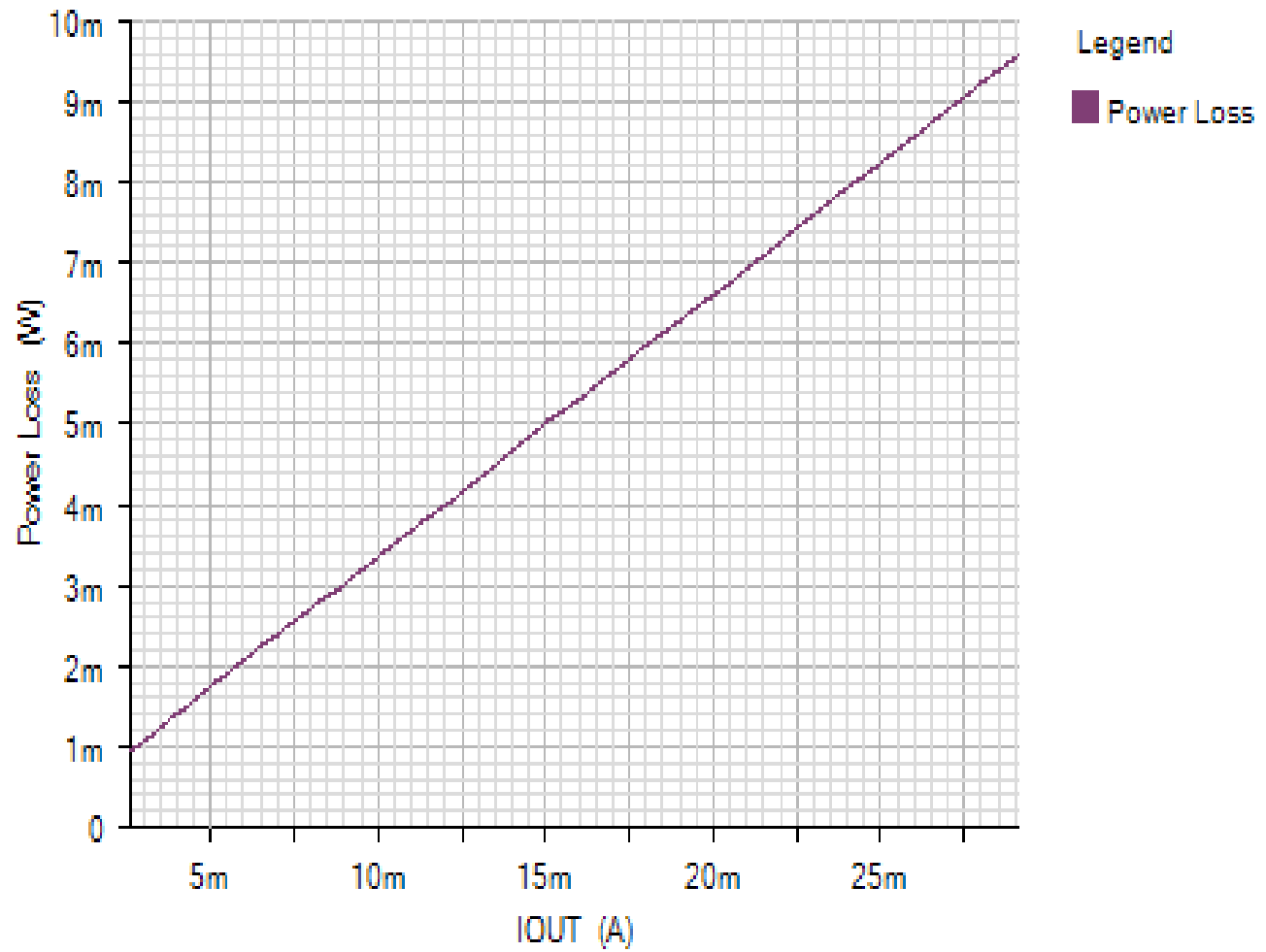


Efficiency - Sun Nov 18 2018 18:38:19



POWER\_LOSS

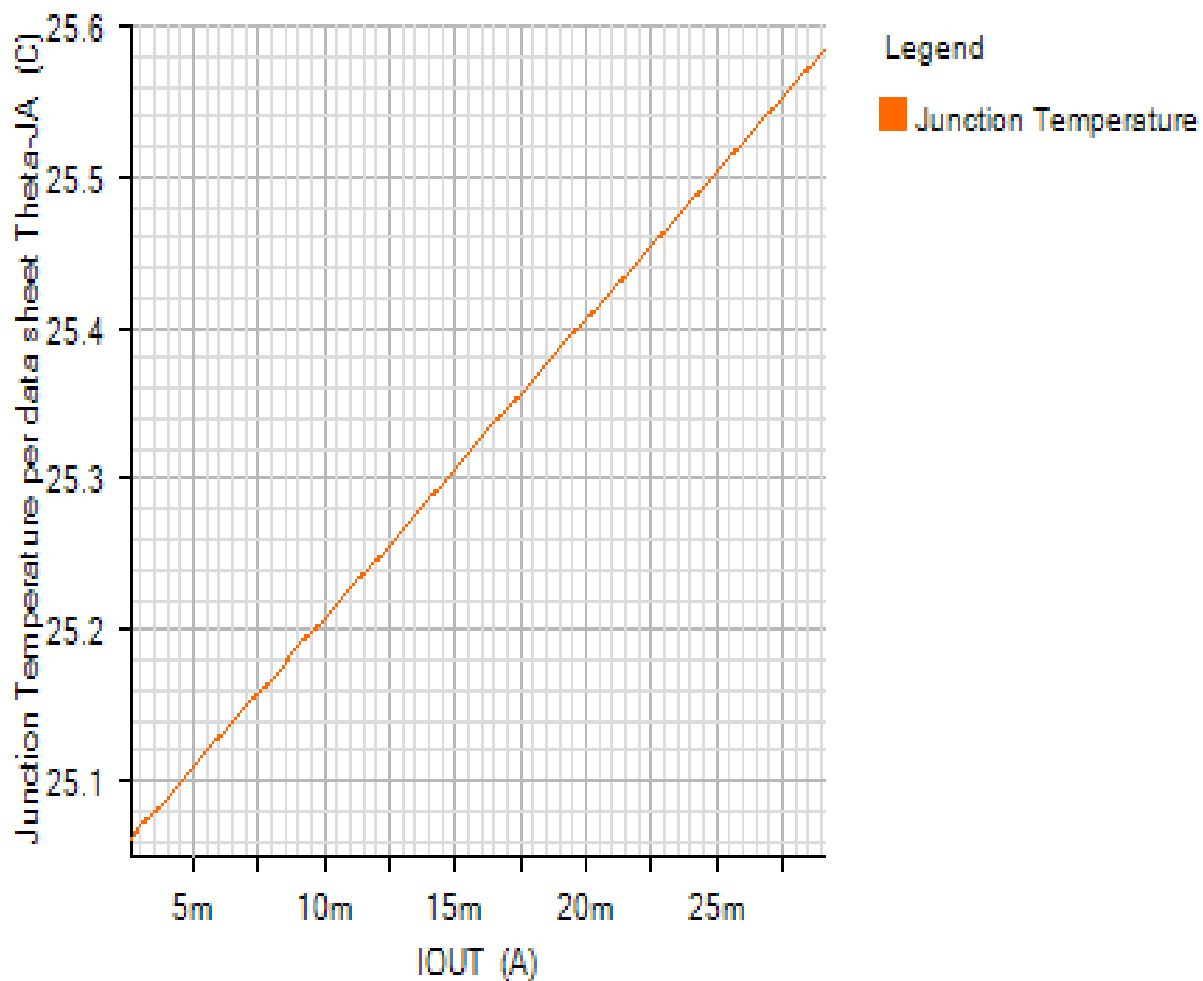
Default



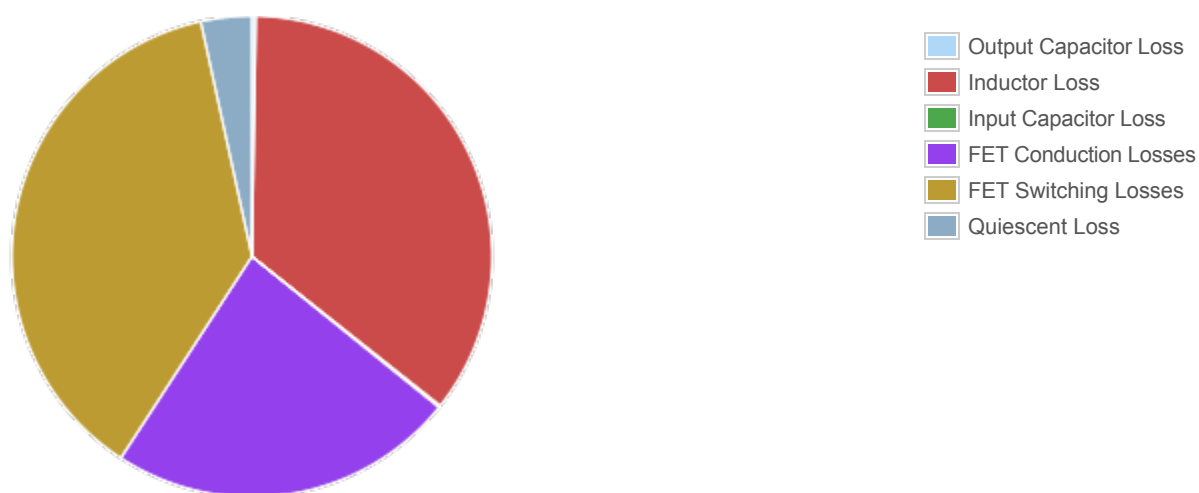


## JUNCTION\_TEMPERATURE

Default



## Losses



Component

Loss (W)

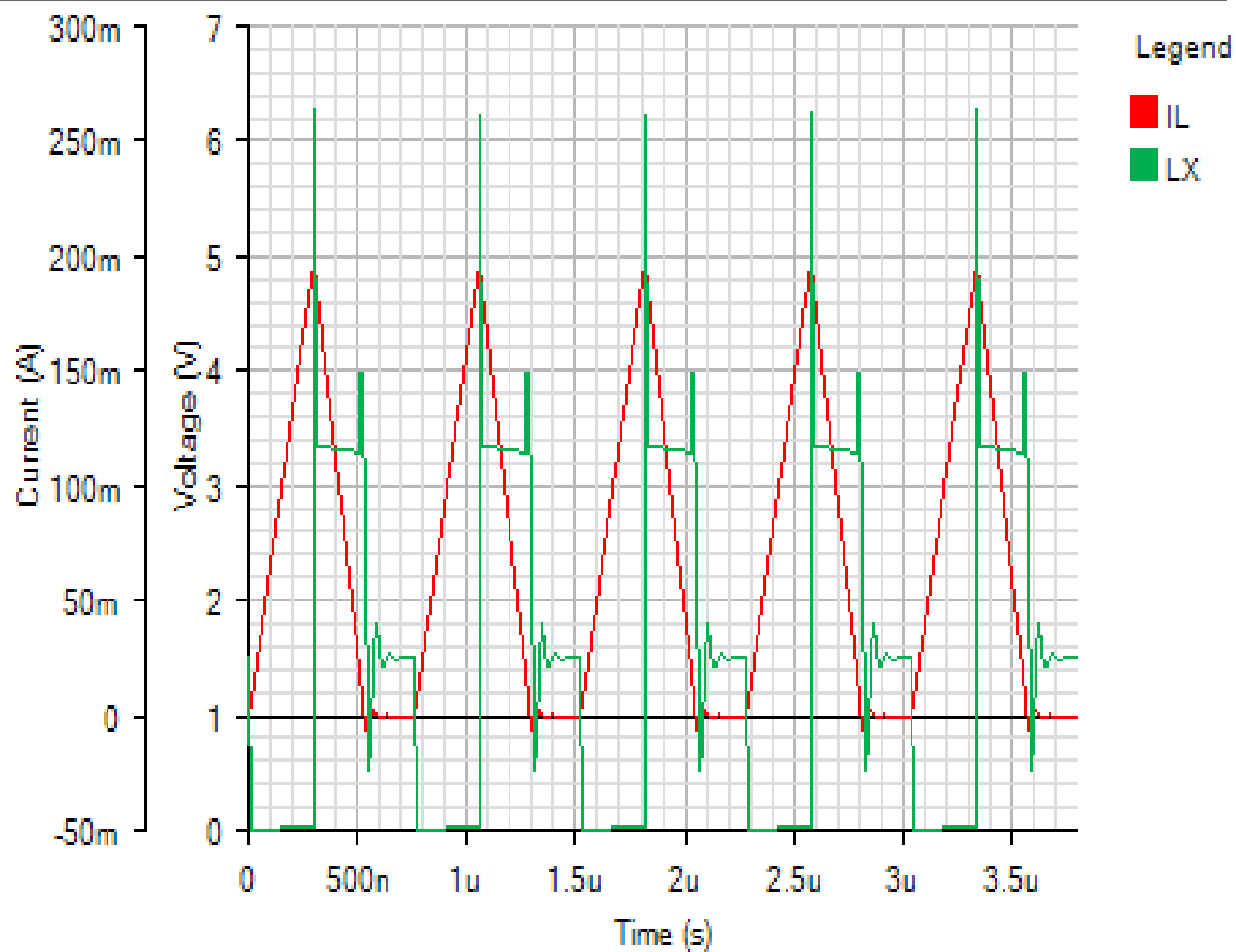
% of total

Component	Loss (W)	% of total
Output Capacitor Loss	0.000025	0.3
Inductor Loss	0.00339	35.4
Input Capacitor Loss	0.000012	0.1
FET Conduction Losses	0.002242	23.4
FET Switching Losses	0.00358	37.4
Quiescent Loss	0.000328	3.4
Total	0.009577	100

Steady State - Sun Nov 18 2018 18:38:19

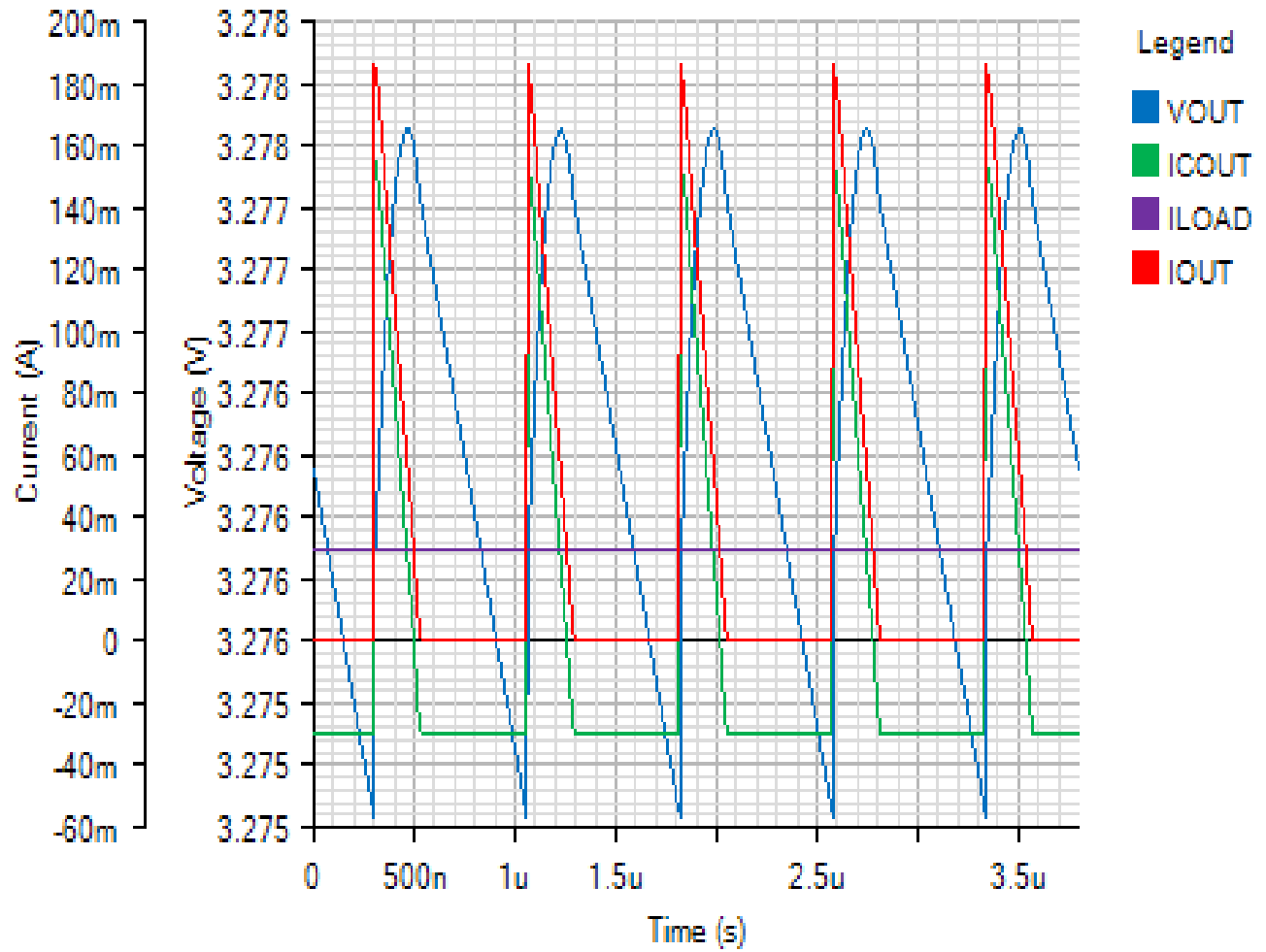
SWITCHING

Default



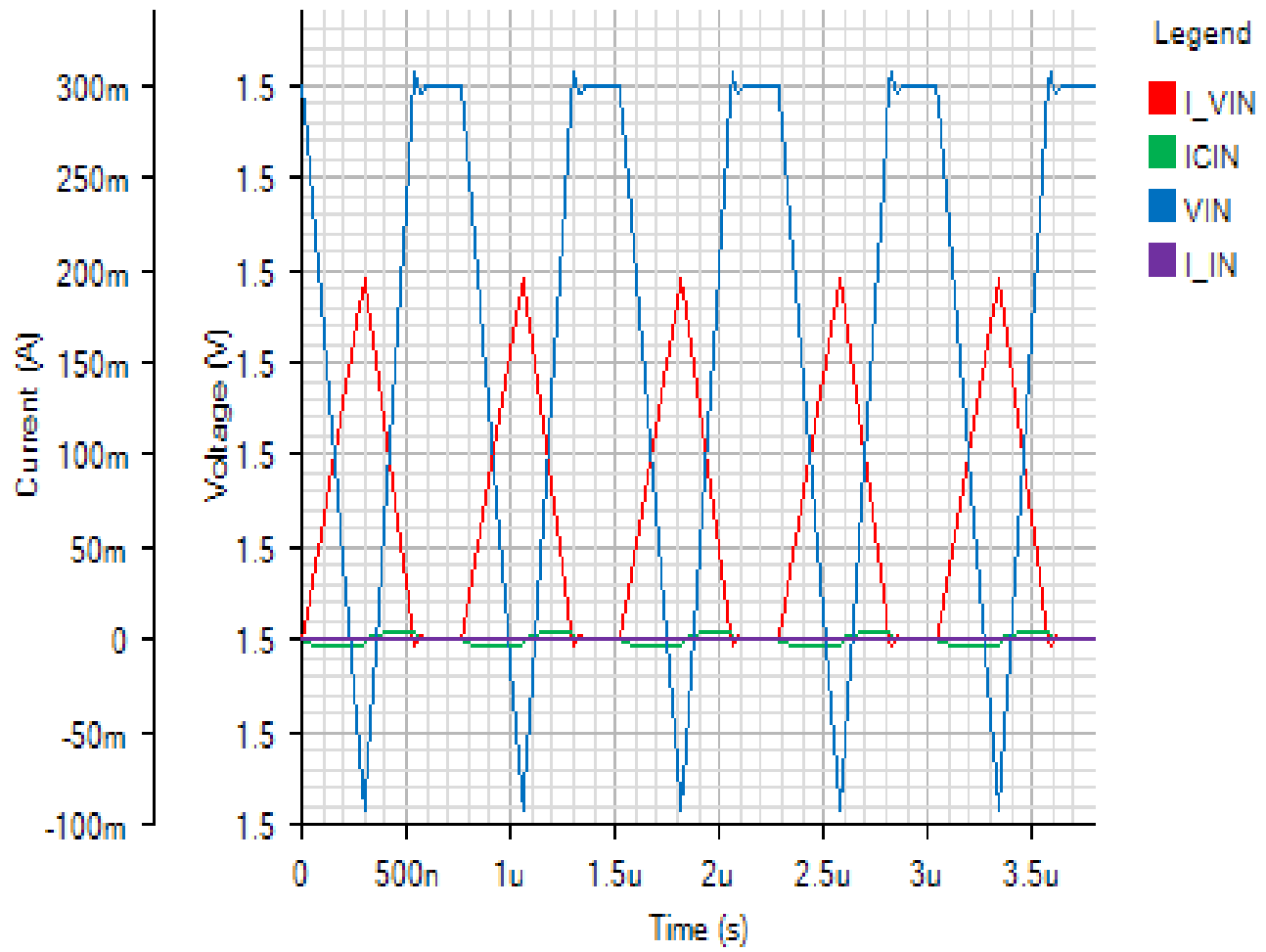
OUTPUT

Default



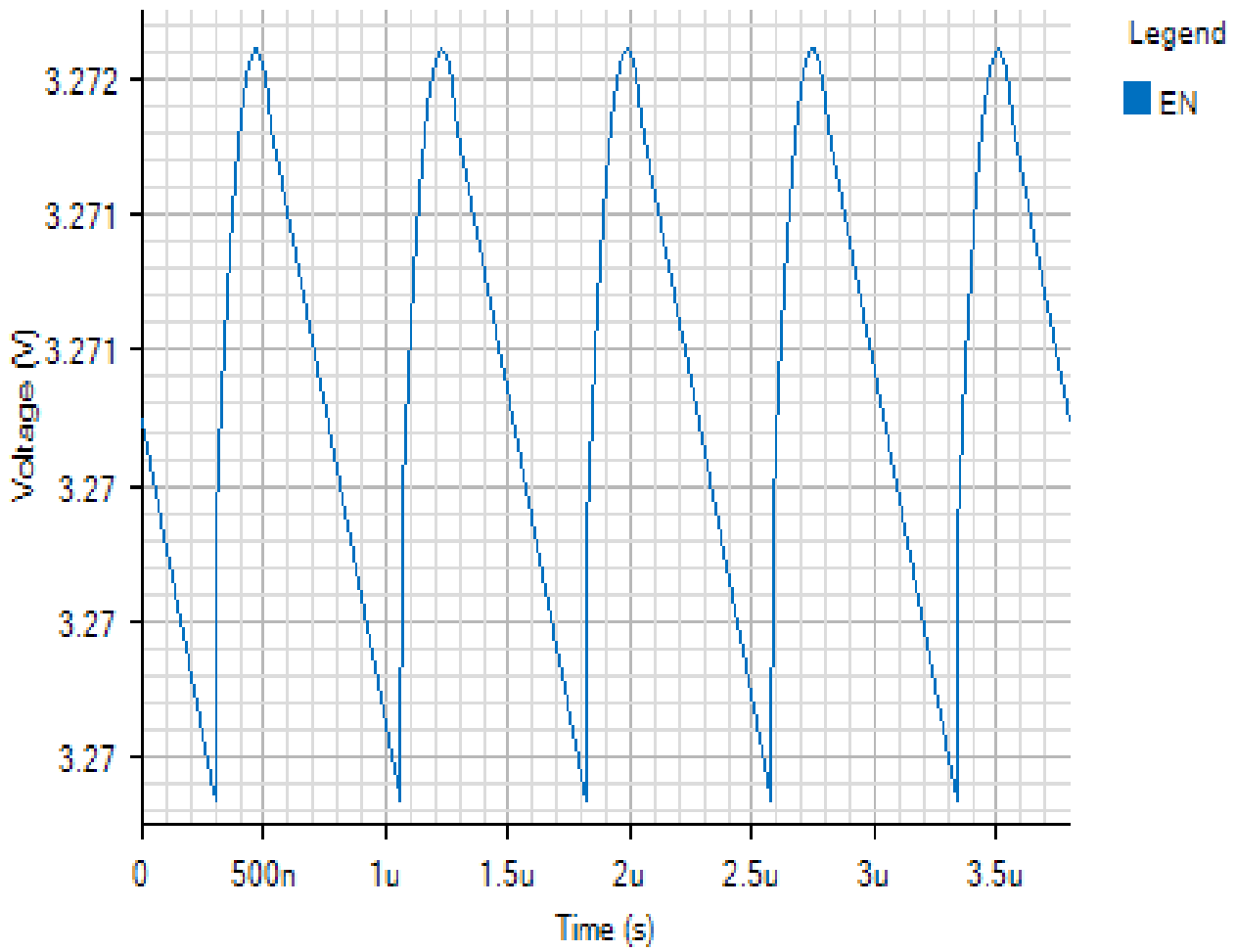
INPUT

Default



IC

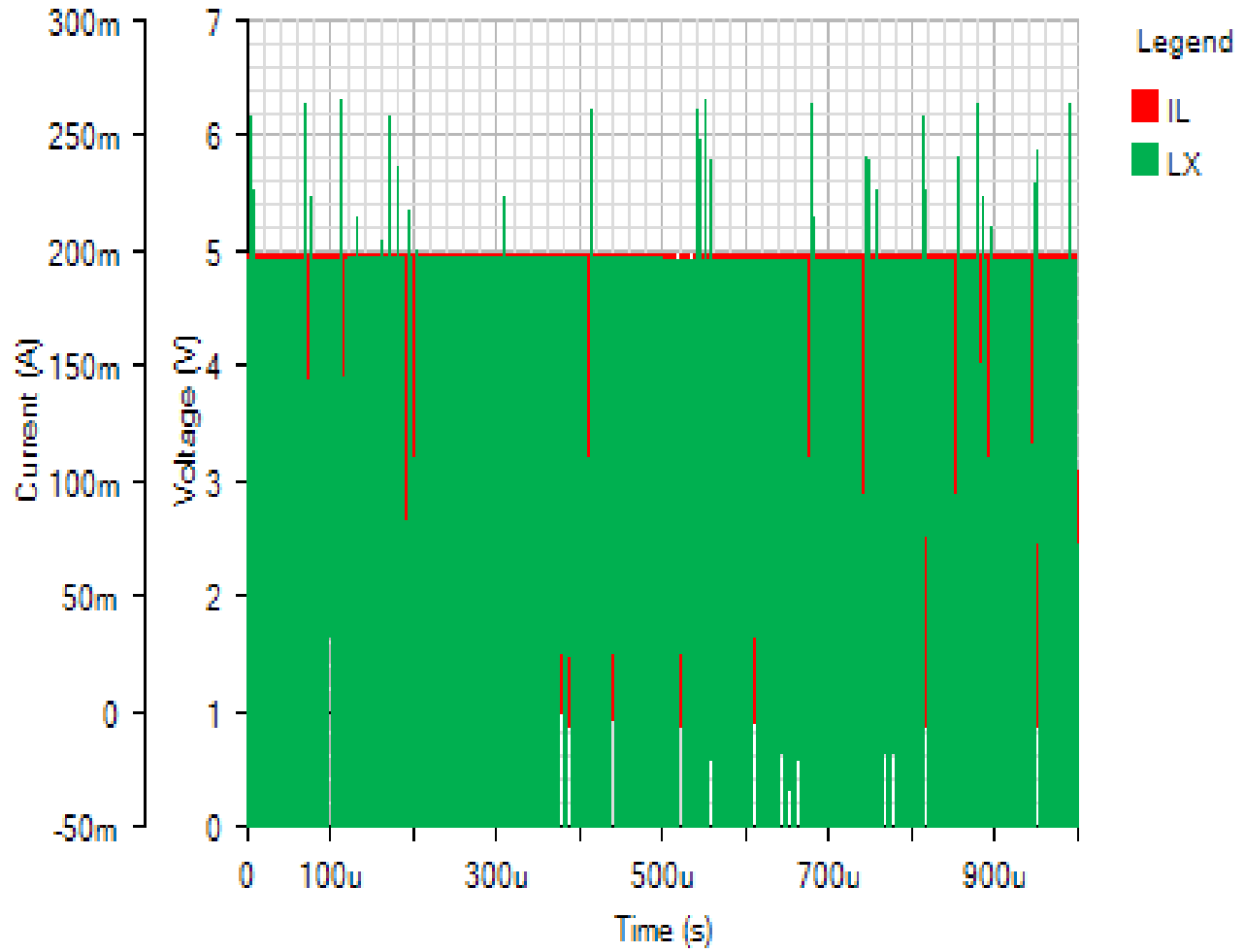
Default



Load Step - Sun Nov 18 2018 18:38:19

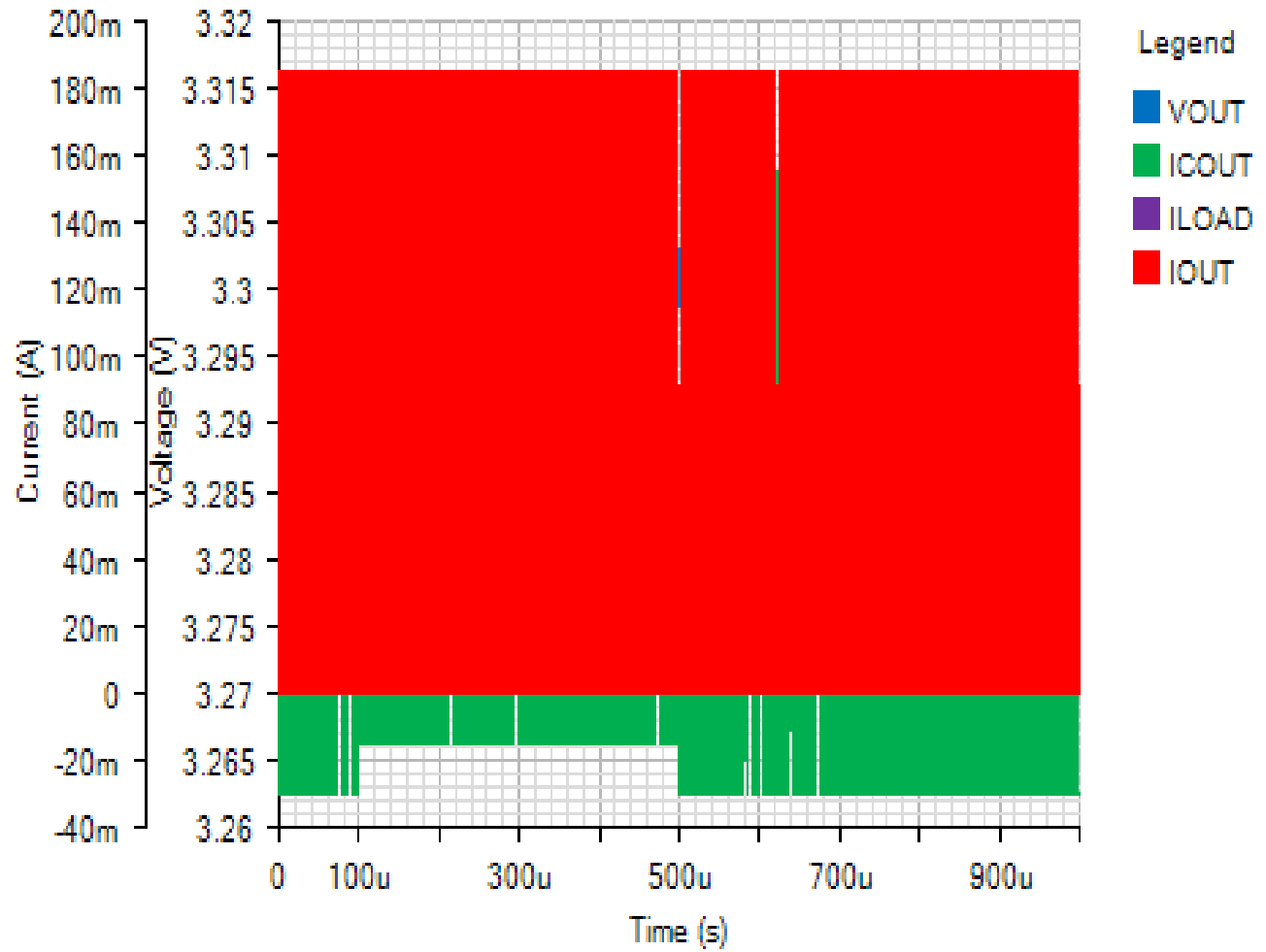
SWITCHING

Default



OUTPUT

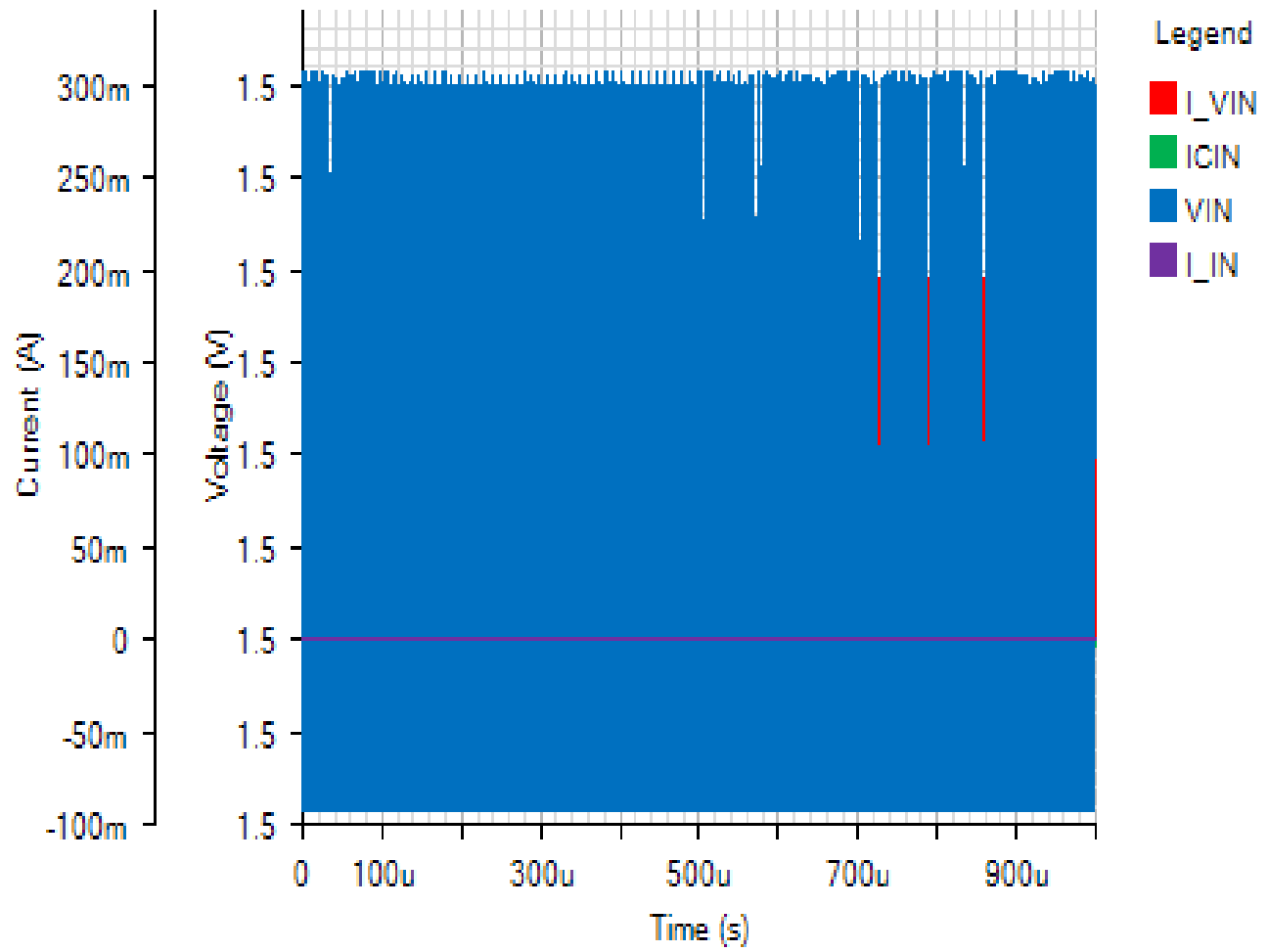
Default





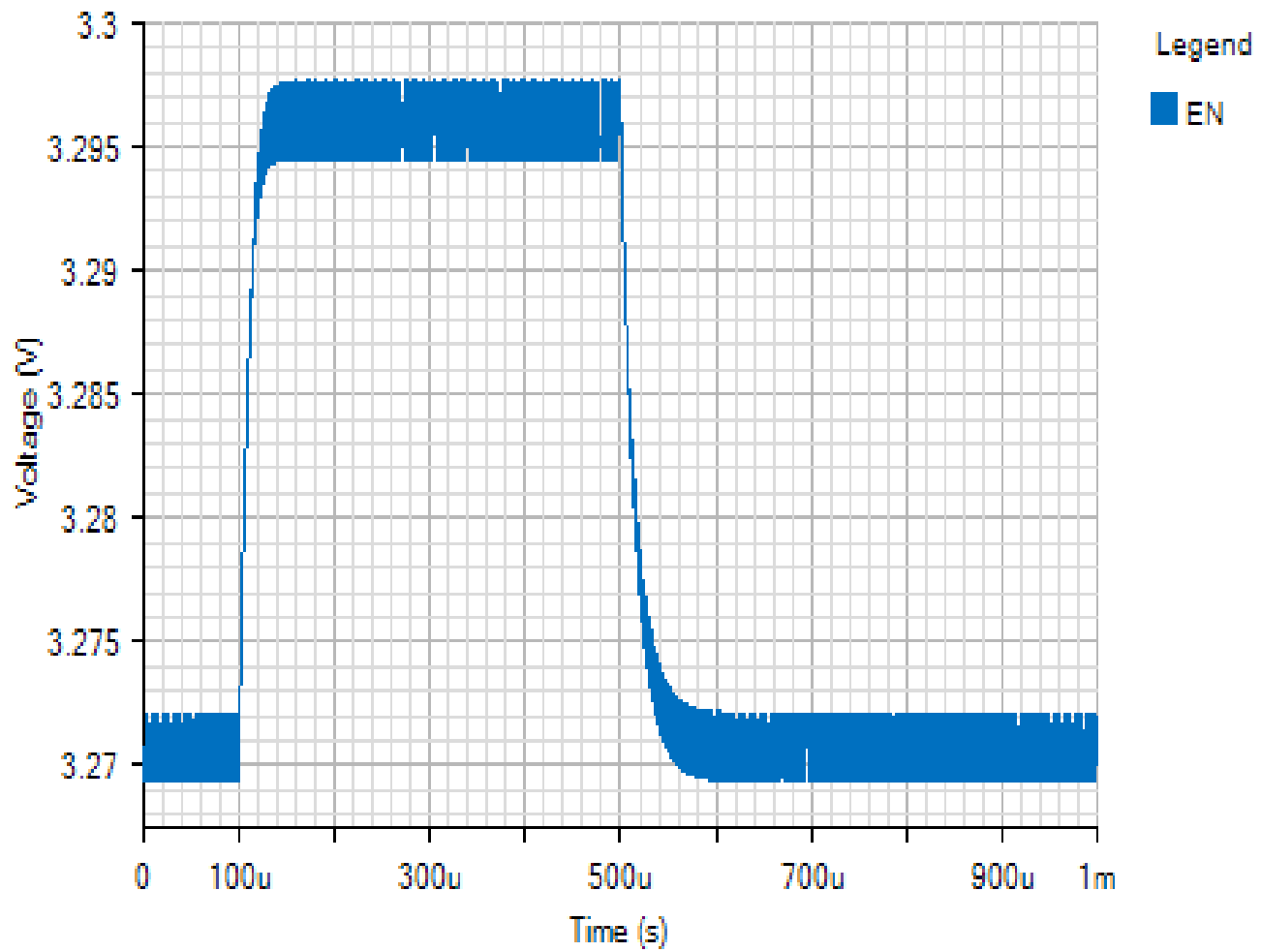
INPUT

Default

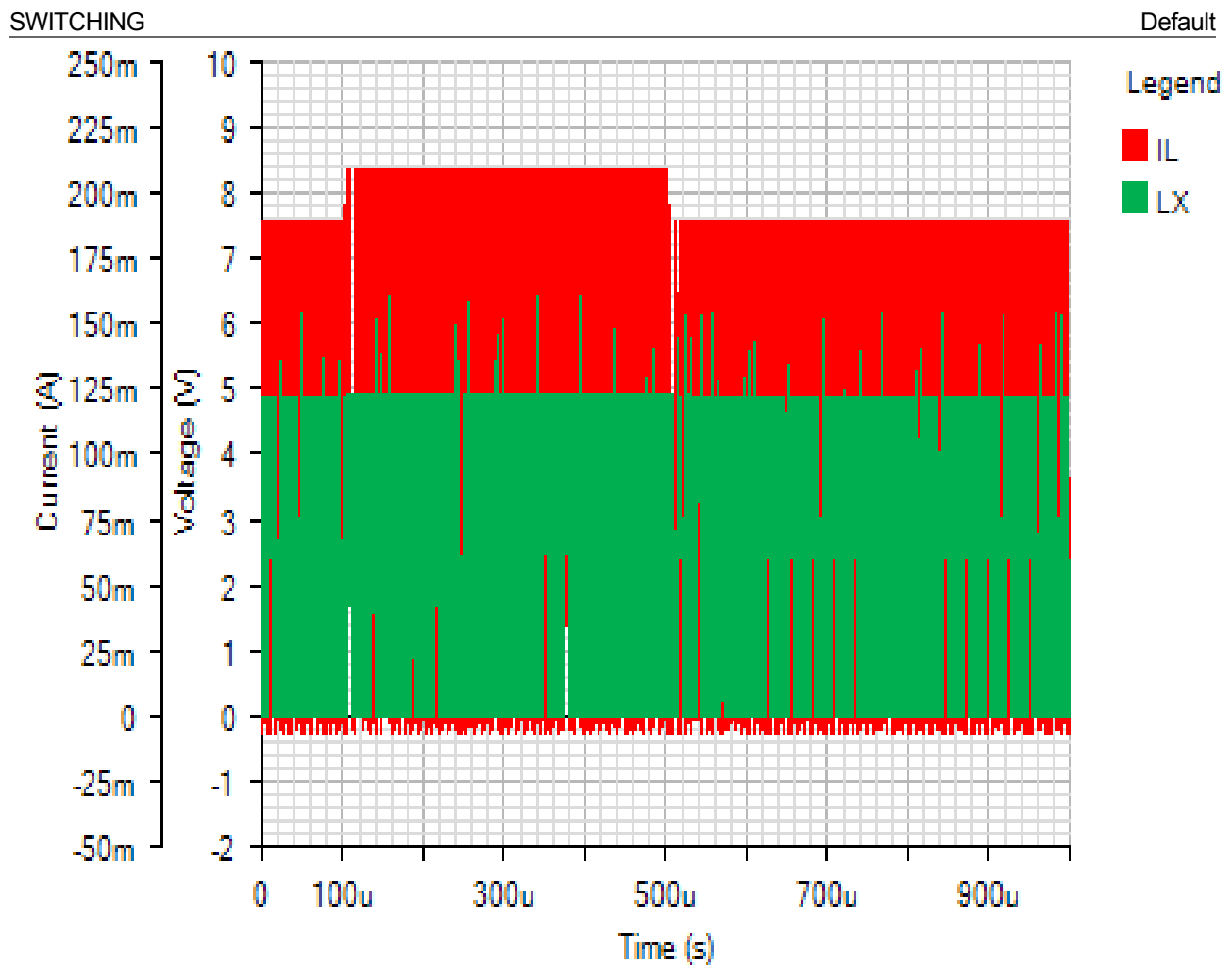


IC

Default

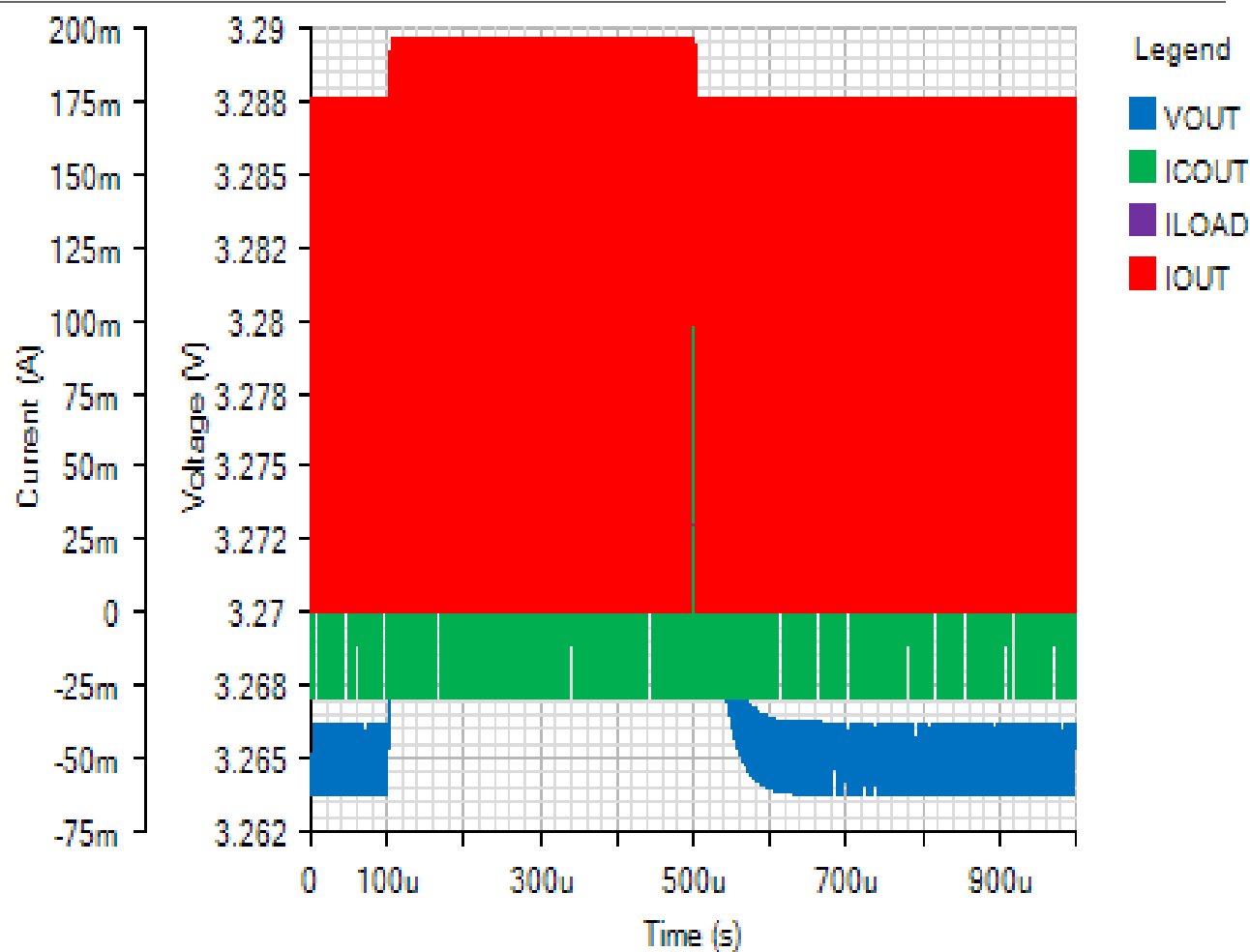


Line Transient - Sun Nov 18 2018 18:38:19



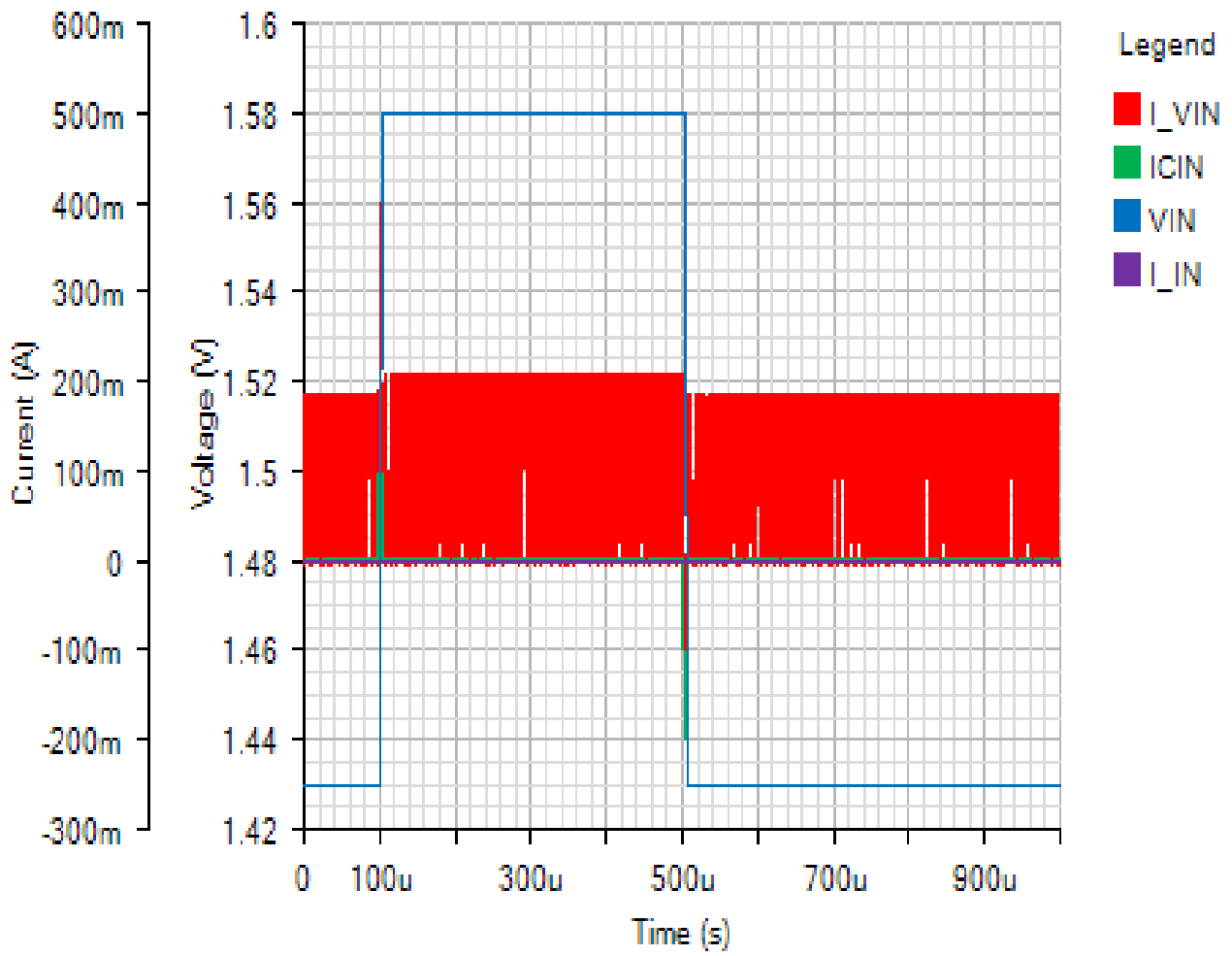
OUTPUT

Default



INPUT

Default



IC

Default

