

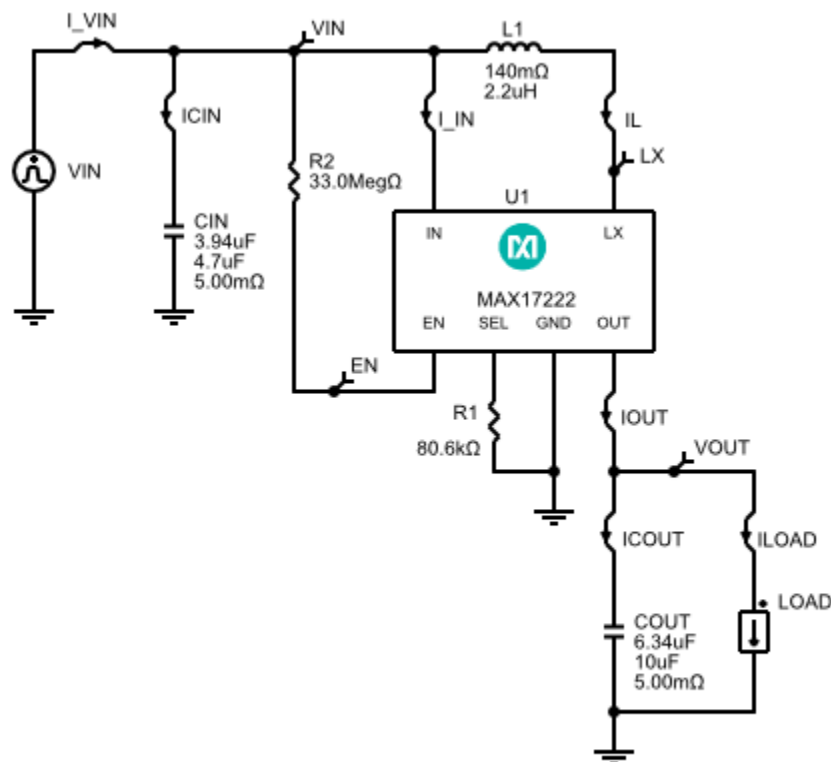
Initial Design

1.0

Design Requirements

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	0.1A
Performance Priority	Balance Efficiency and Size
BOM Priority	Cost
Ambient Temperature	25°C

Schematic



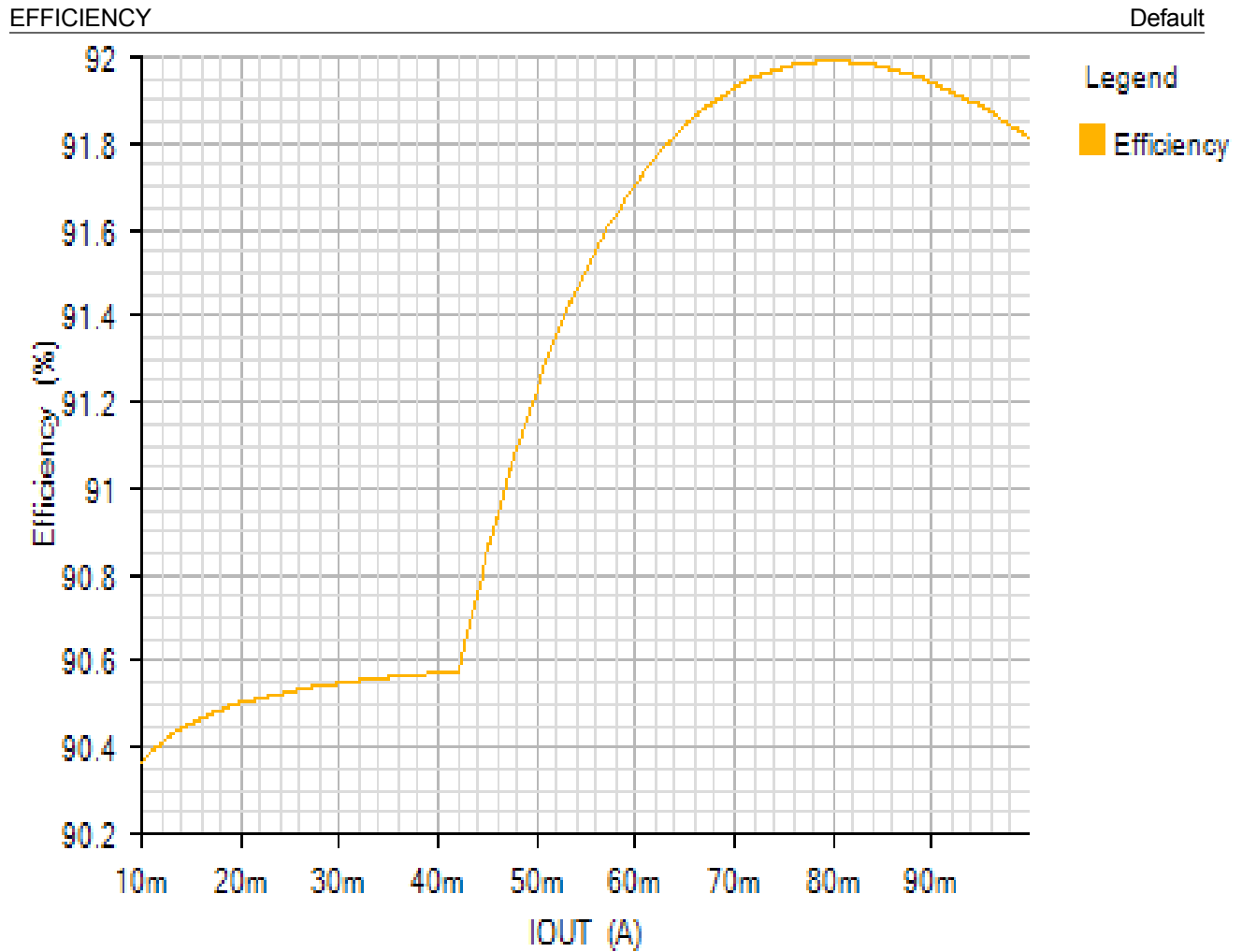
If the current level (starting current for Load Steps) is too low, Steady State and Load Step analyses may fail due to PFM operation.

BOM

Ref	Qty	Part Number	Manufacturer	Description
U1	1	MAX17222	Maxim Integrated	0.4V to 5.5V Input, Synchronous Boost Converter with 300nA Ultra Low Quiescent Current, 10nA True Shutdown, 500mA Input Peak Current , Input Transient Protection
CIN	1	C1608X7S1A475K080AC	TDK	Cap Ceramic 4.7uF 10V 0603 125C
COUT	1	C2012X6S1C106K085AC	TDK	Cap Ceramic 10uF 16V 0805 105C
L1	1	VLS201612CX-2R2M	TDK	Inductor 2.2uH 20% 117mOhm 1.48A Isat 1.77A Irms
R1	1	ERJ2RK8062X	Panasonic	Res Thick Film 0402 80.6K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R
R2	1	HMC0402JT33M0	Stackpole Electronics, Inc	Res Thick Film 0402 33M Ohm 5% 0.063W(1/16W) ±400ppm/°C Pad SMD T/R

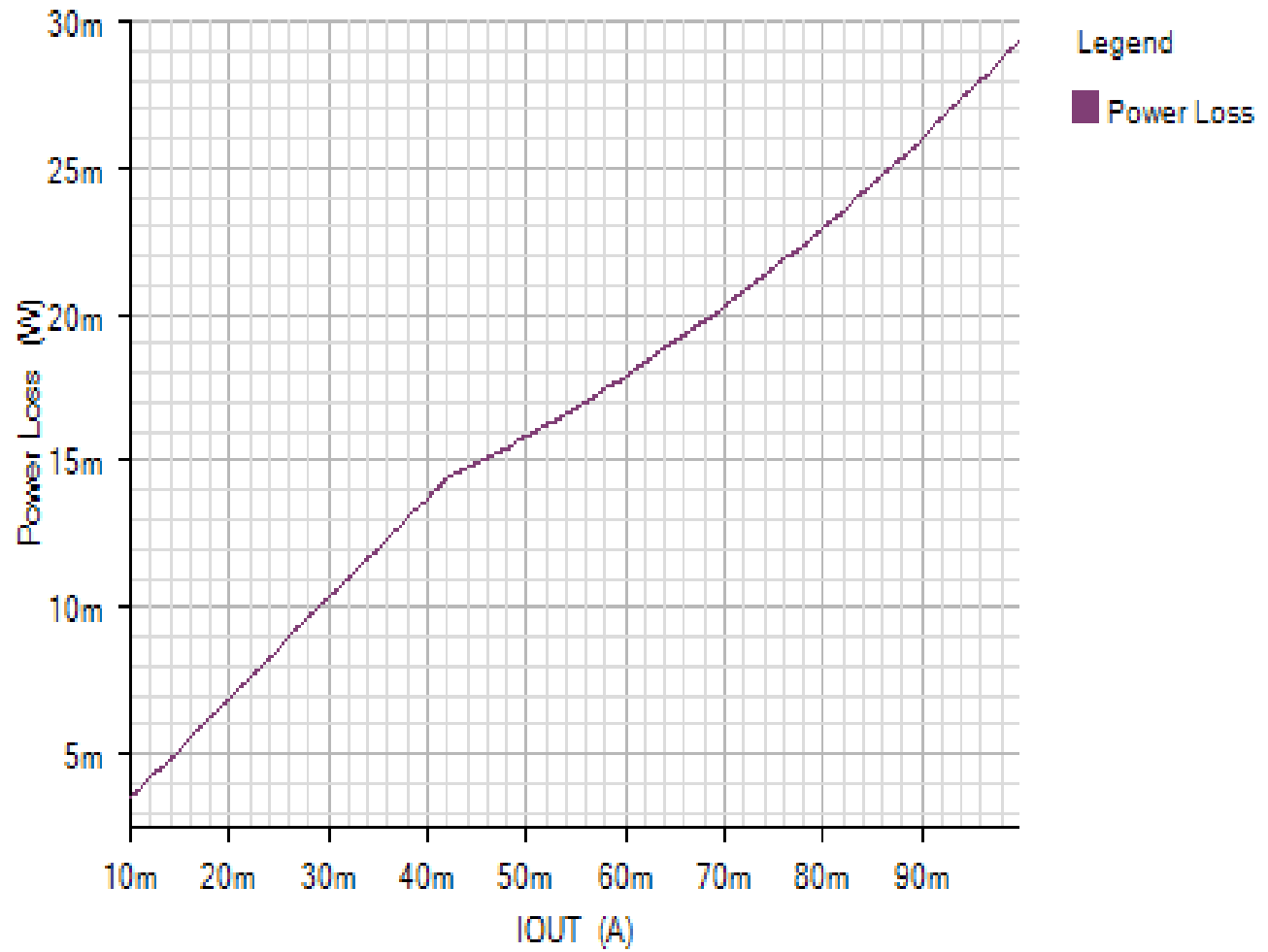
Simulation Results

Efficiency - Sun Nov 18 2018 18:50:11



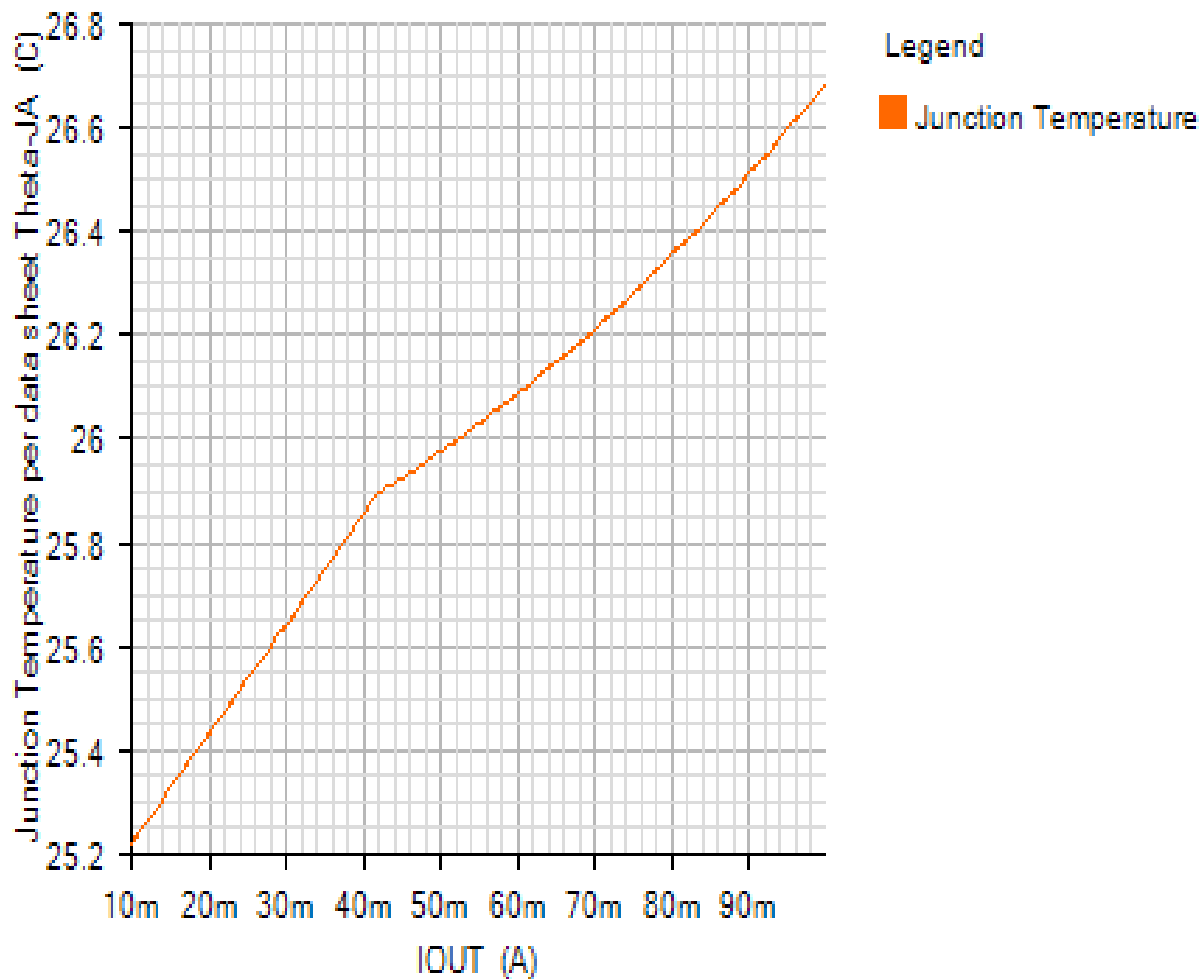
POWER_LOSS

Default

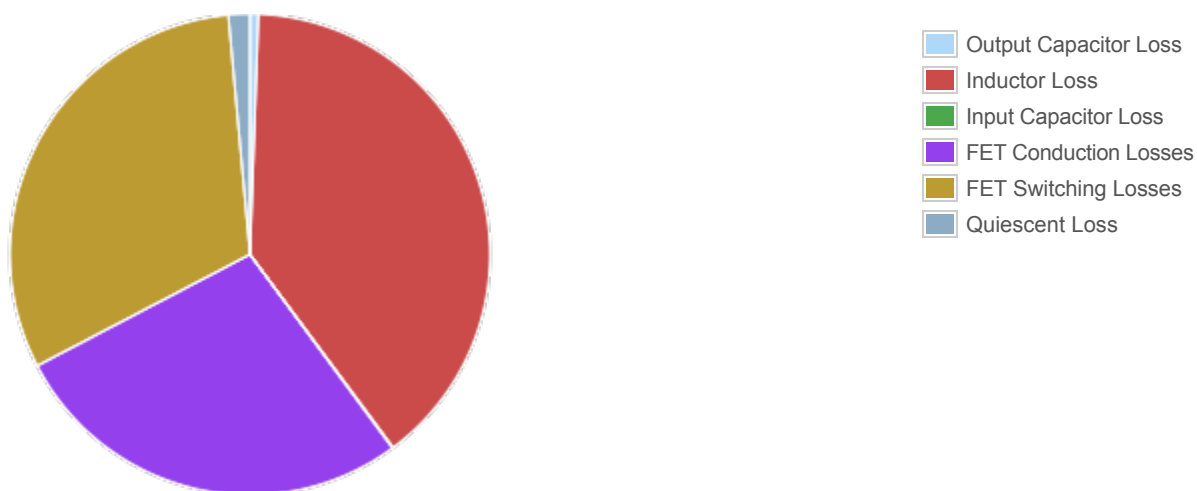


JUNCTION_TEMPERATURE

Default



Losses



Component

Loss (W)

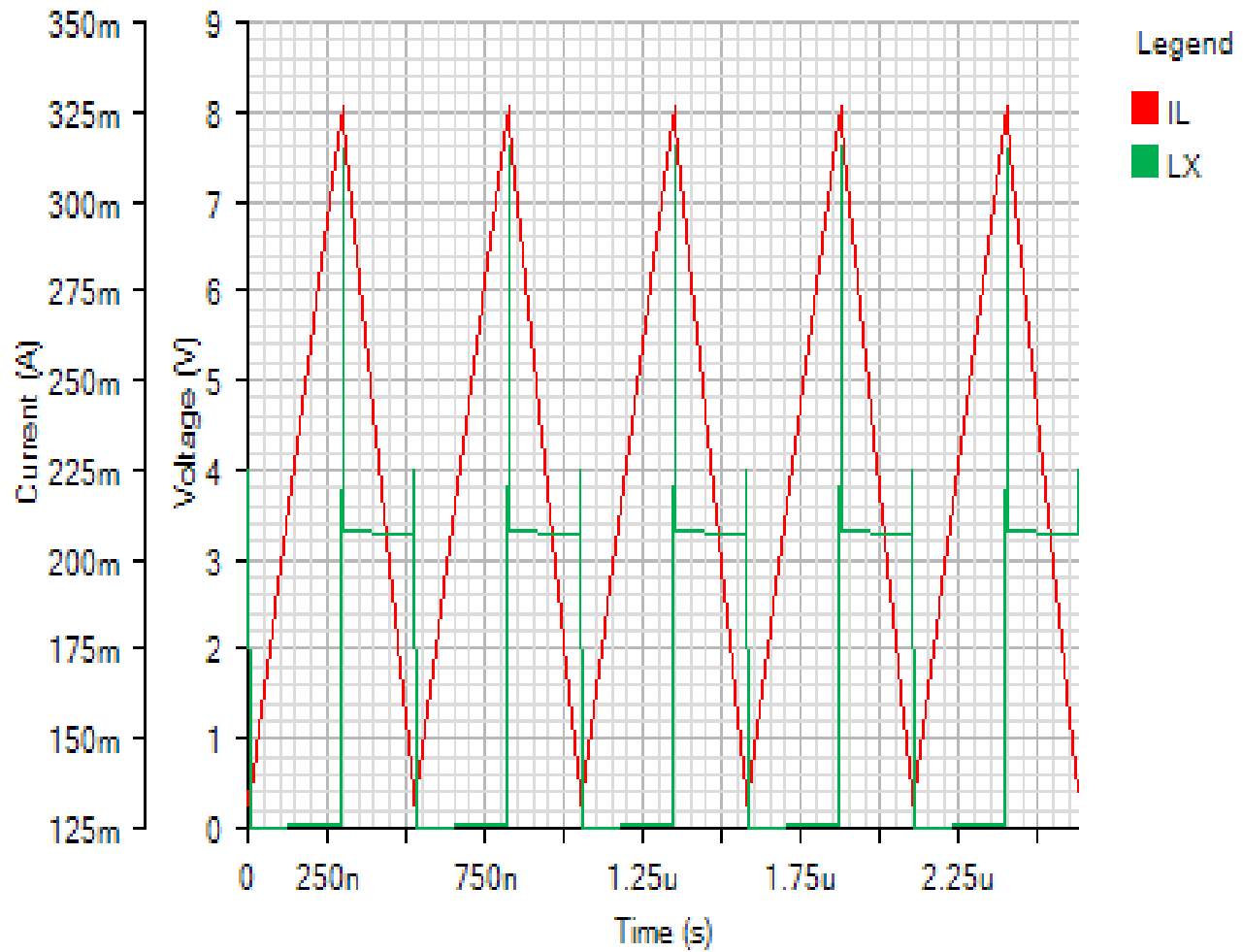
% of total

Component	Loss (W)	% of total
Output Capacitor Loss	0.000168	0.6
Inductor Loss	0.011724	39.3
Input Capacitor Loss	0.000017	0.1
FET Conduction Losses	0.008197	27.5
FET Switching Losses	0.009322	31.2
Quiescent Loss	0.00043	1.4
Total	0.02986	100

Steady State - Sun Nov 18 2018 18:50:11

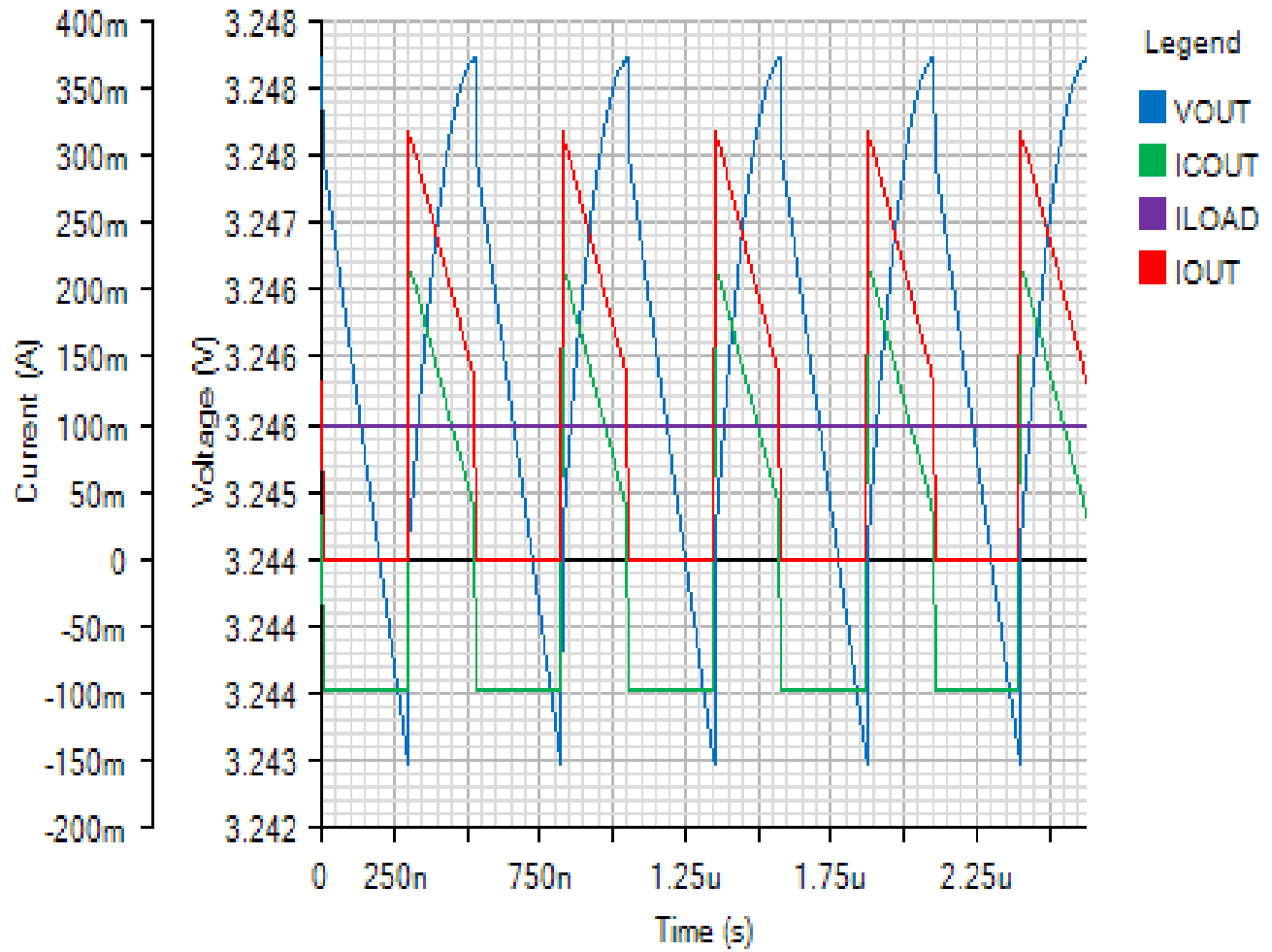
SWITCHING

Default



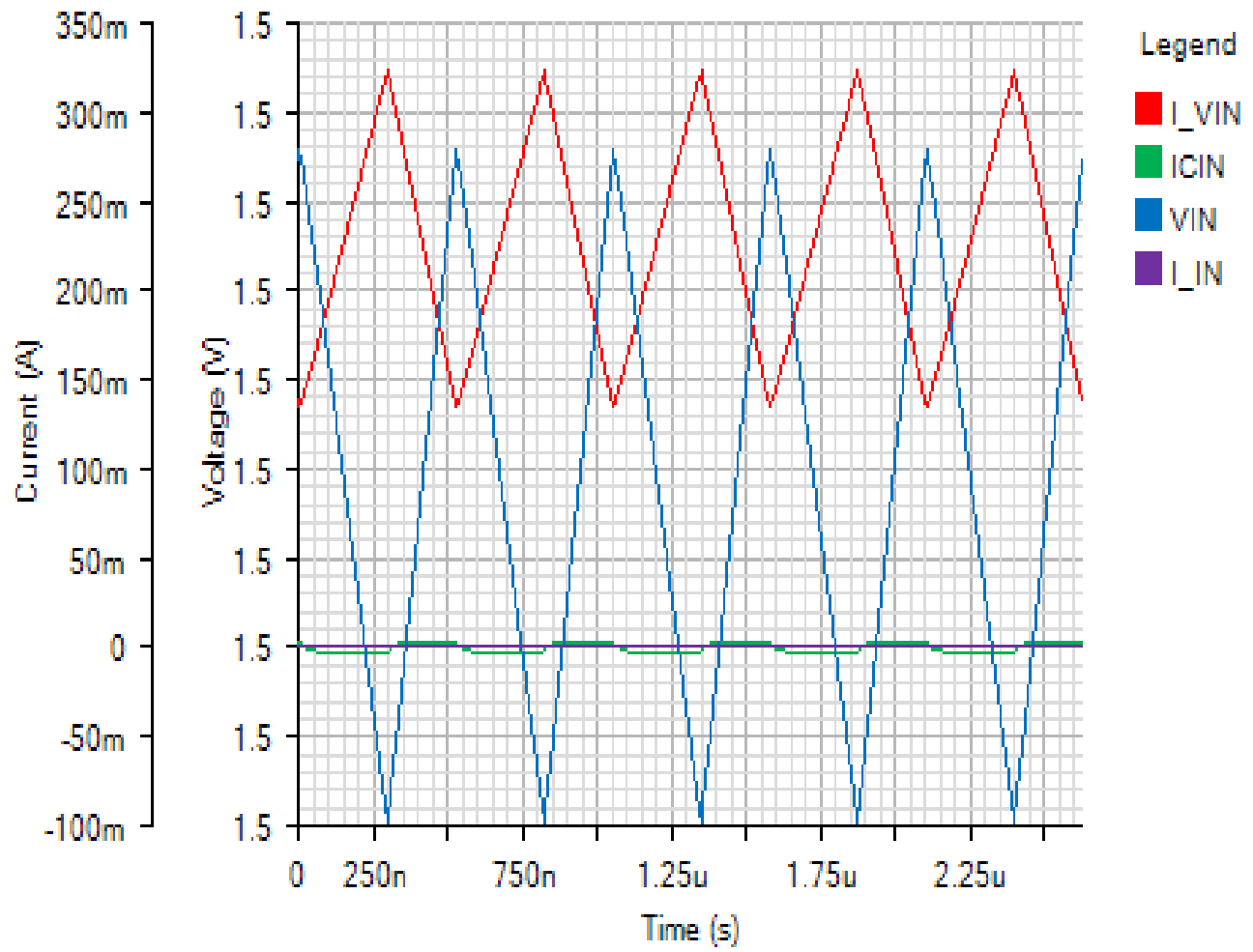
OUTPUT

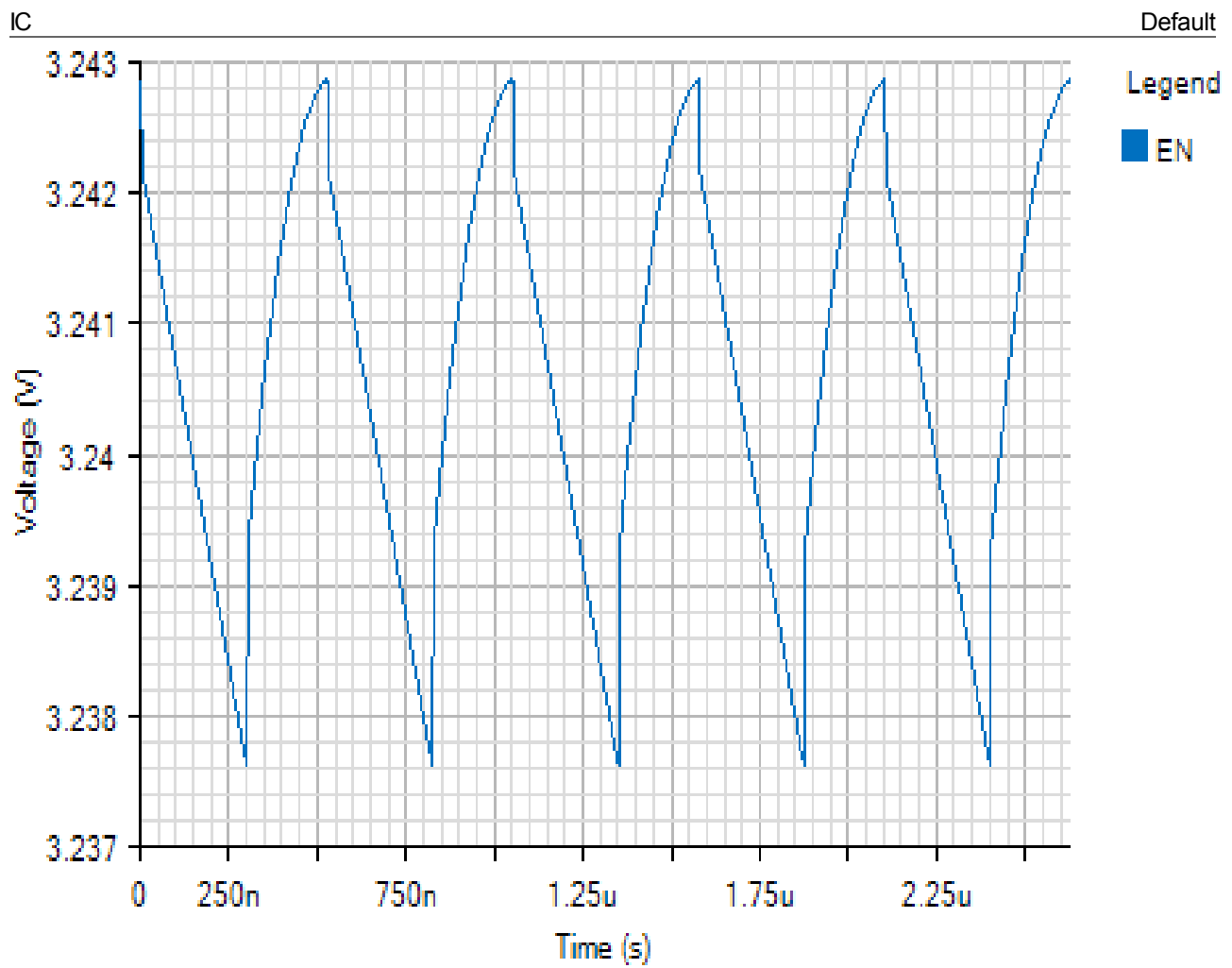
Default



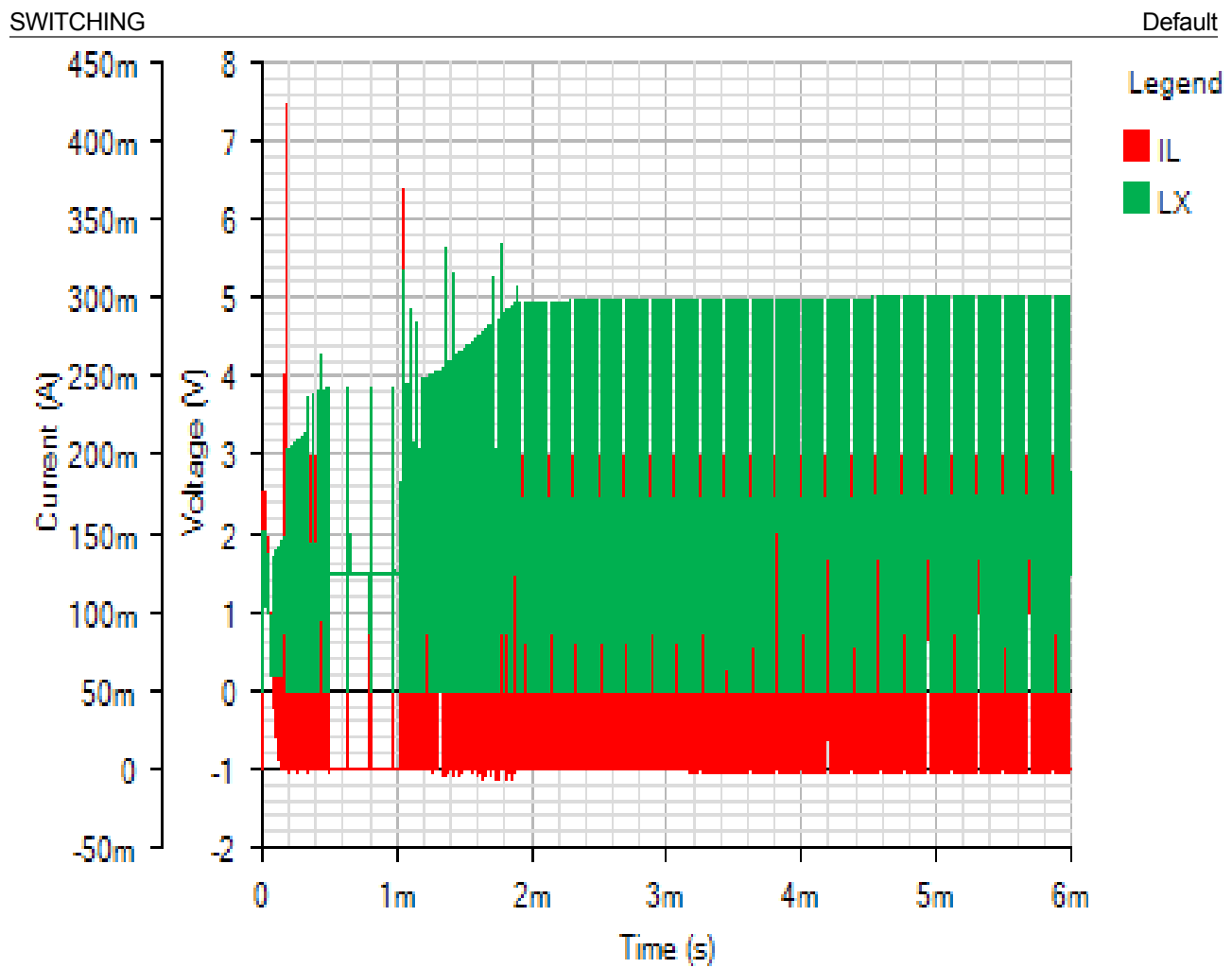
INPUT

Default



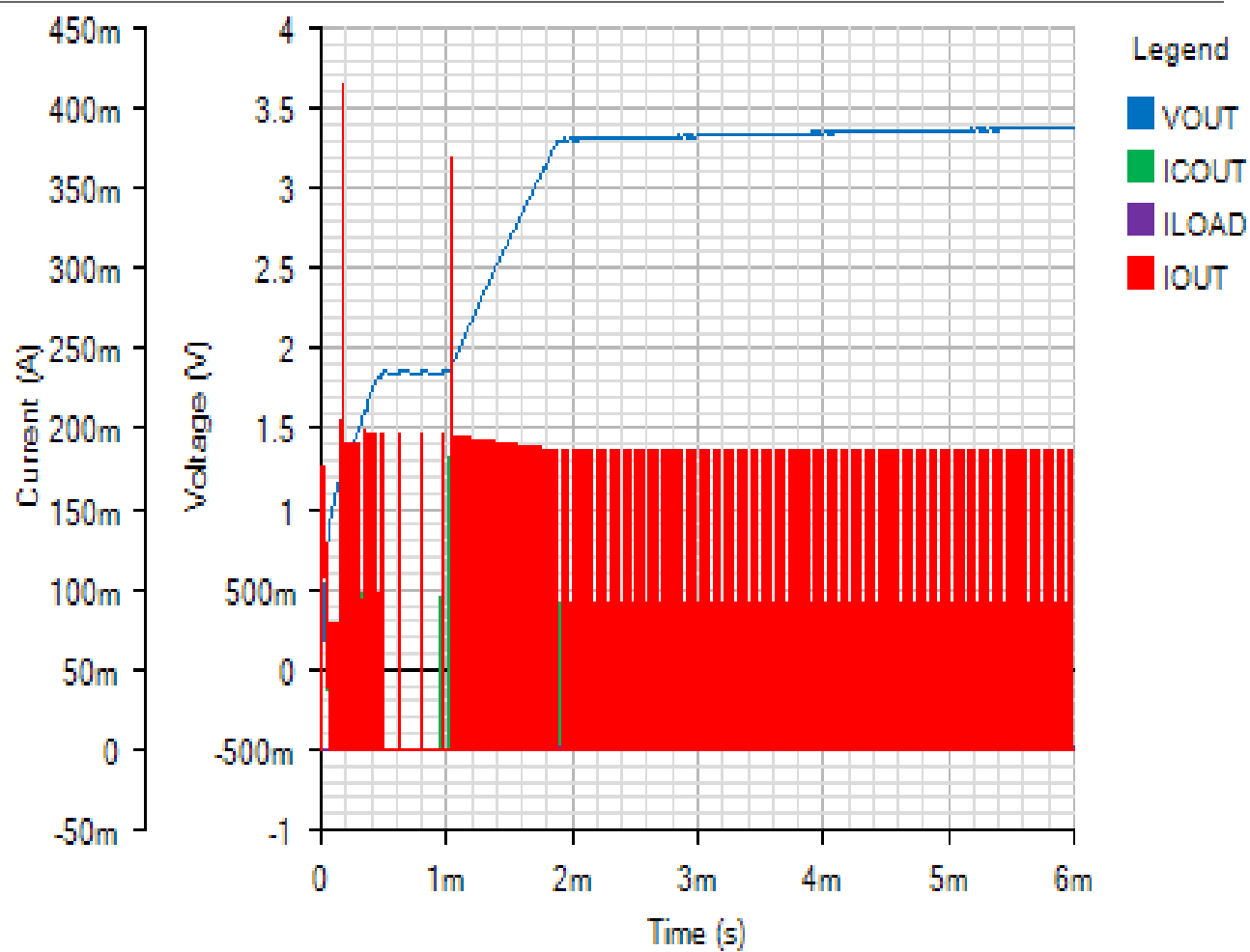


Start Up - Sun Nov 18 2018 18:50:11



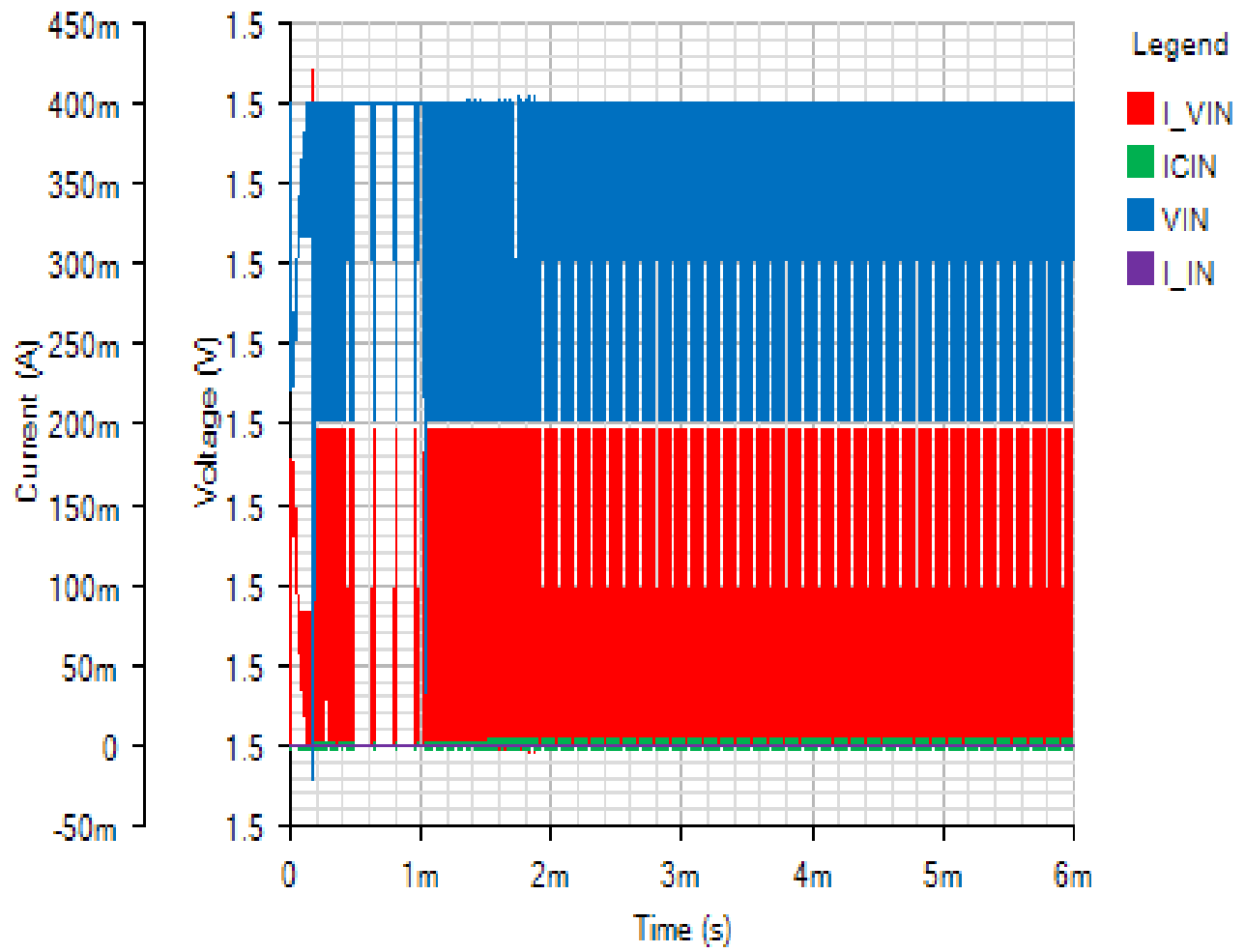
OUTPUT

Default



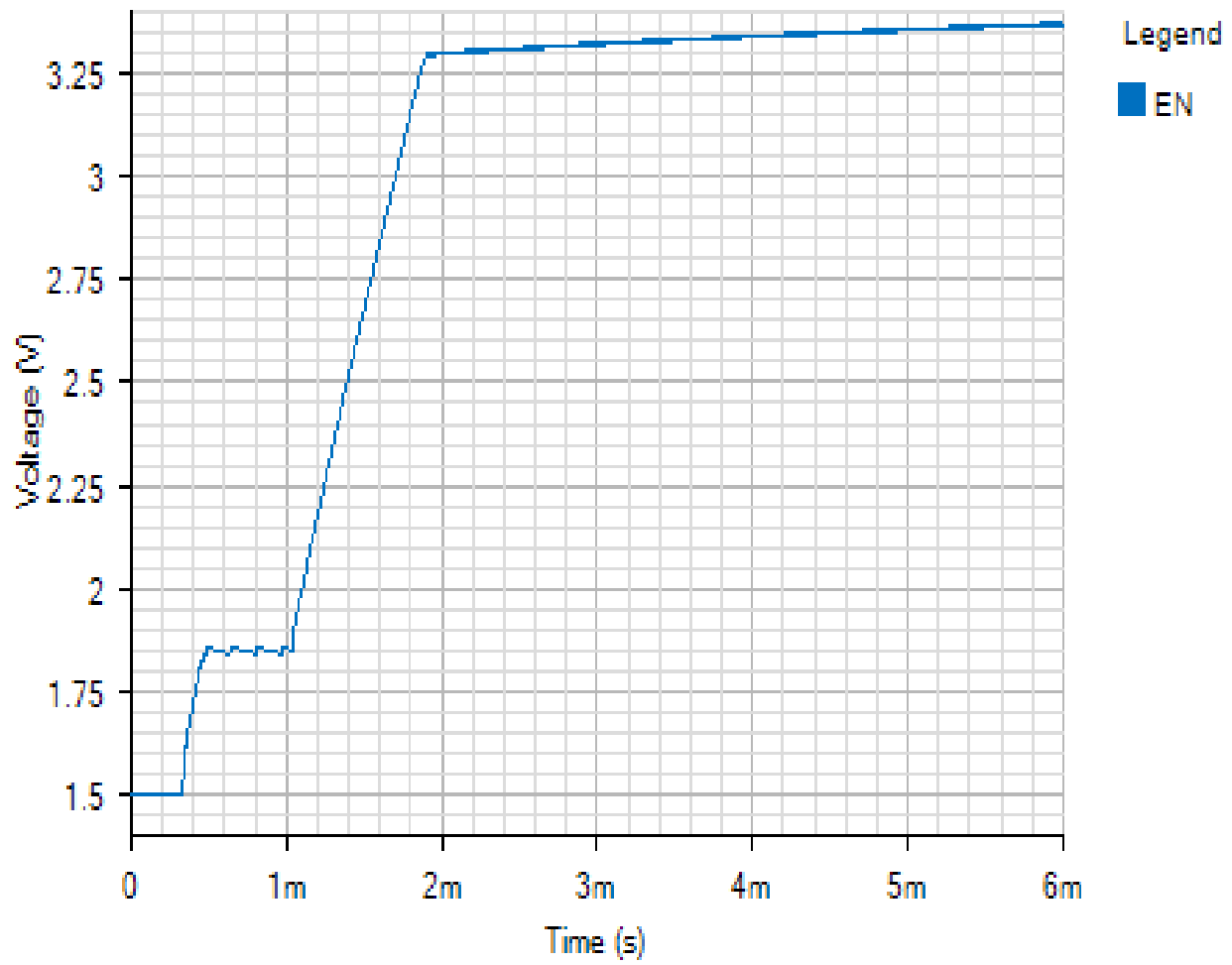
INPUT

Default

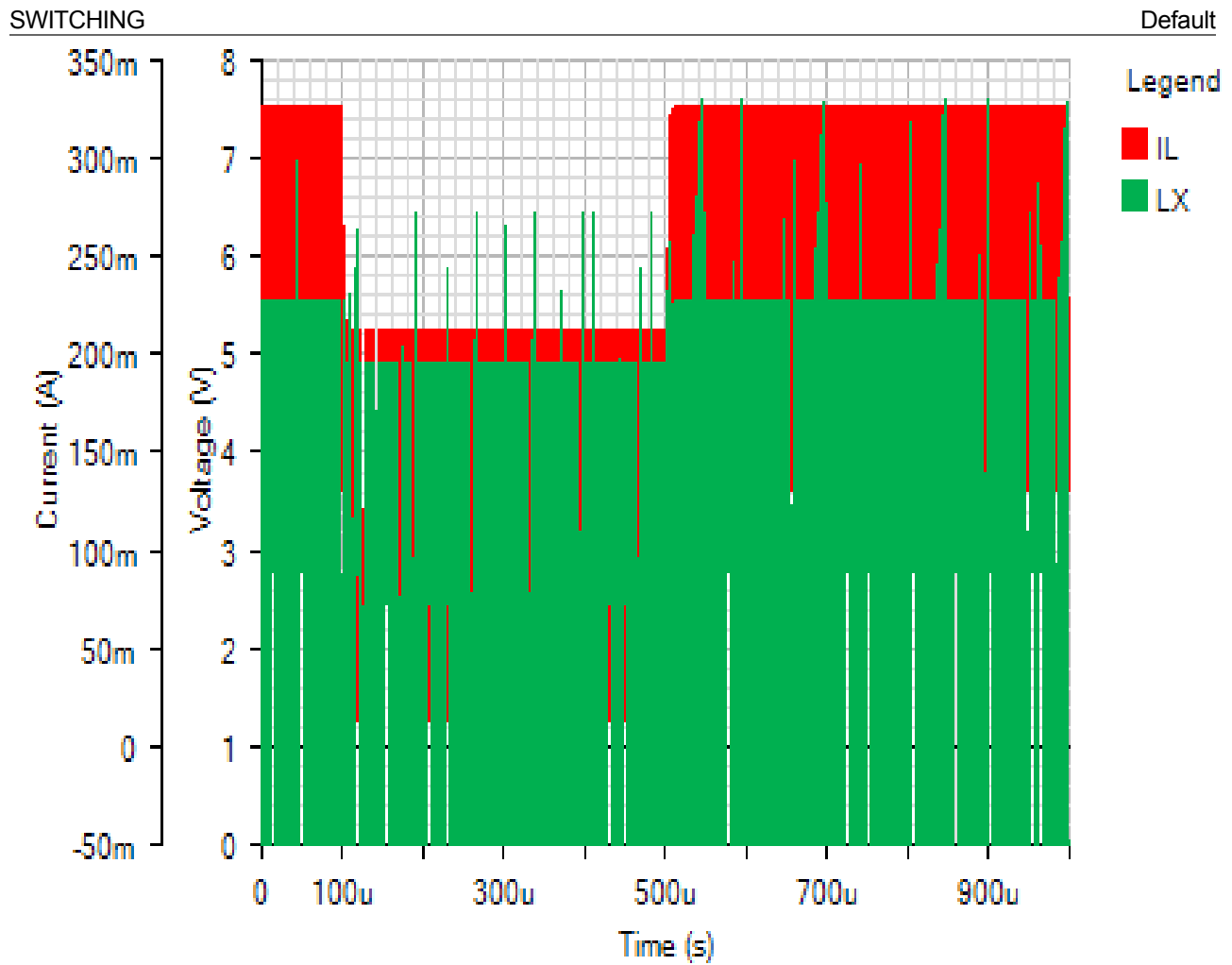


IC

Default

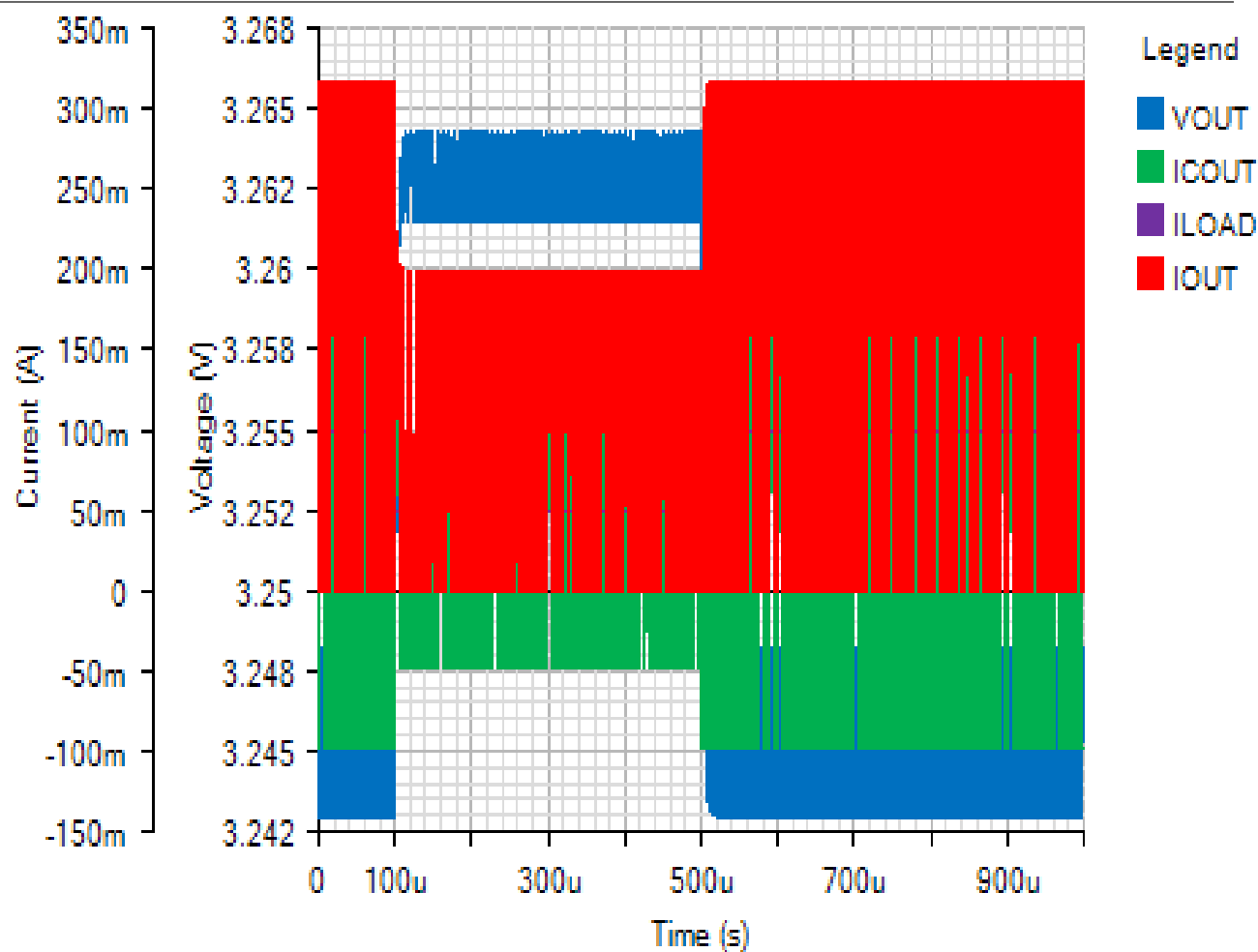


Load Step - Sun Nov 18 2018 18:50:11



OUTPUT

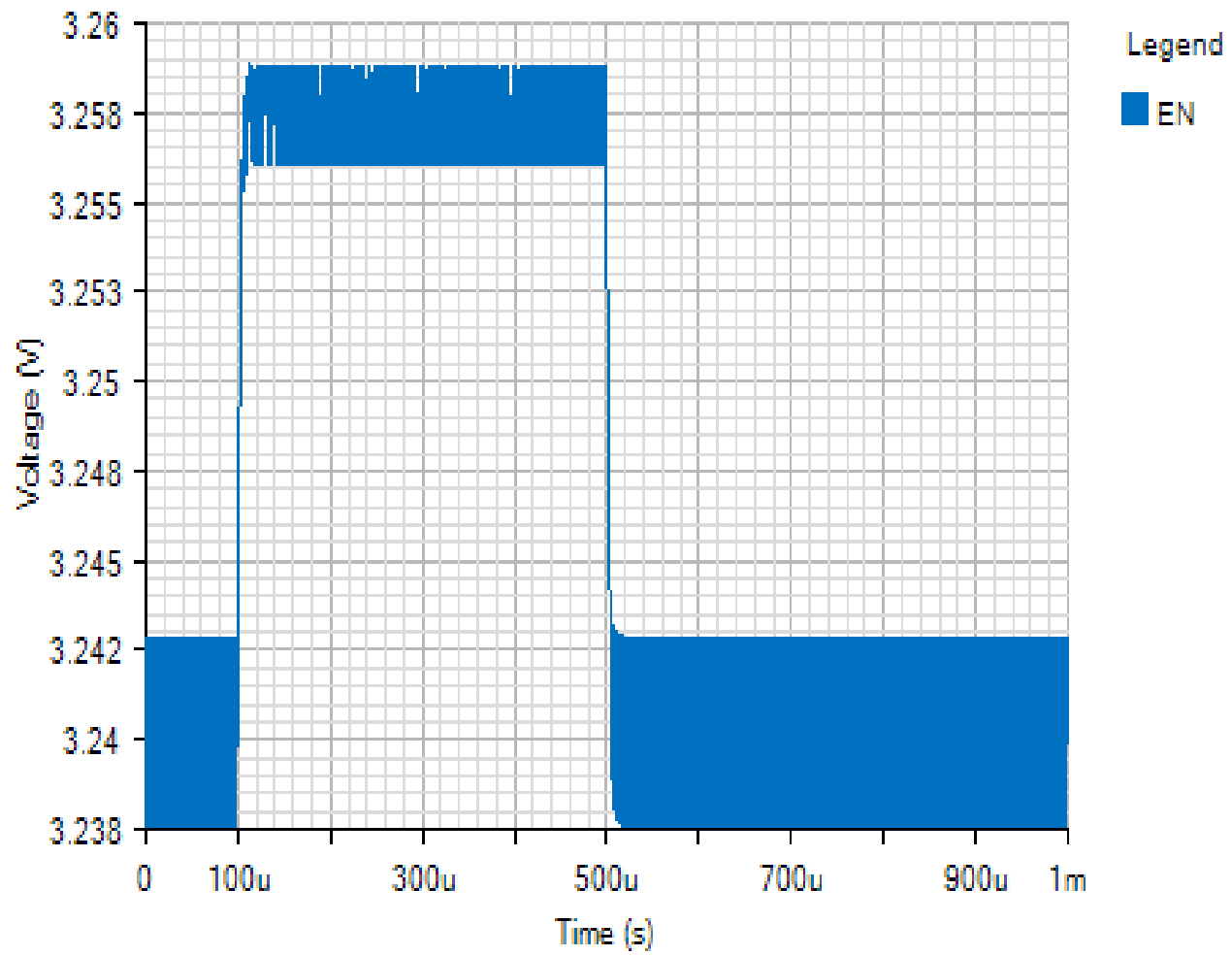
Default





IC

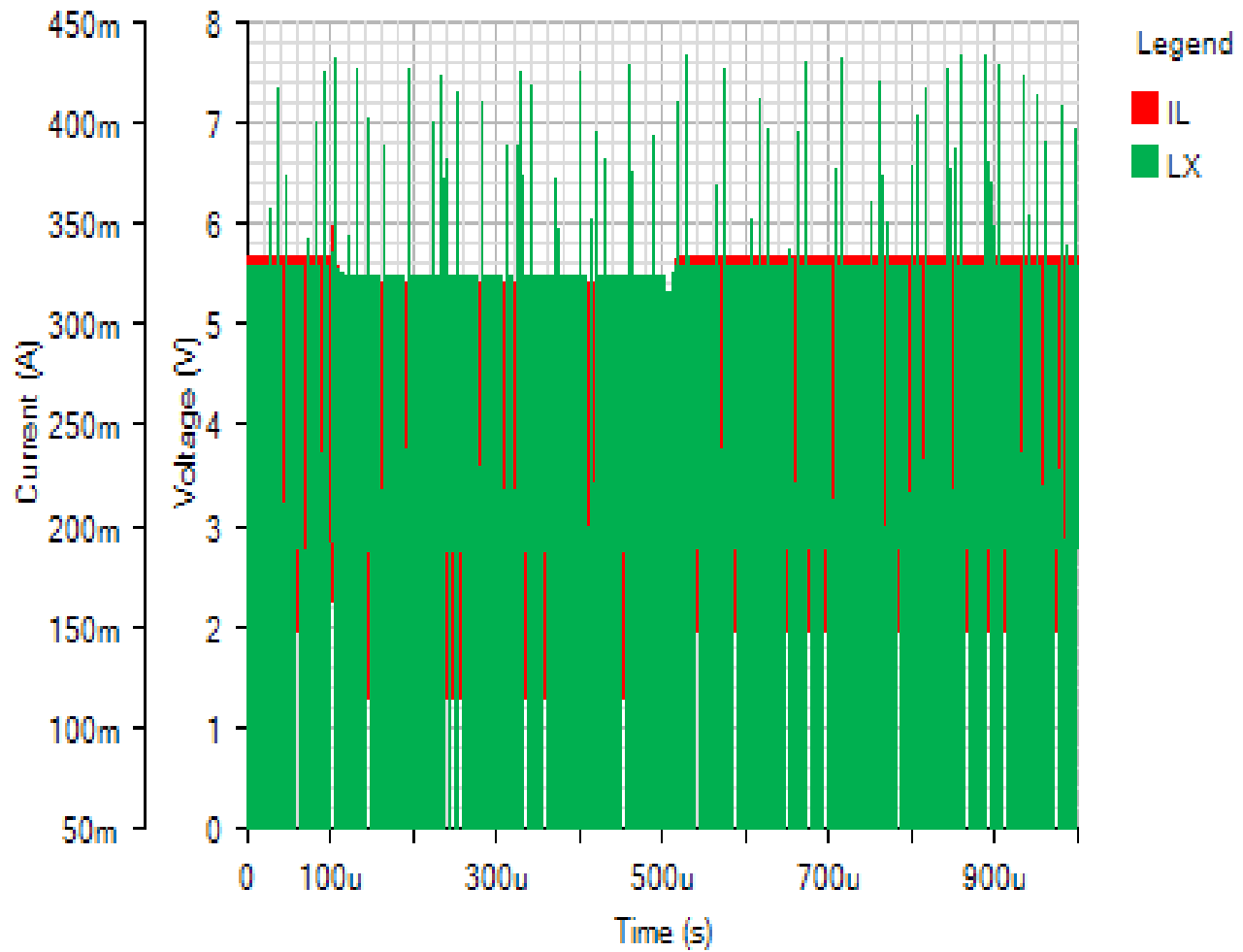
Default



Line Transient - Sun Nov 18 2018 18:50:11

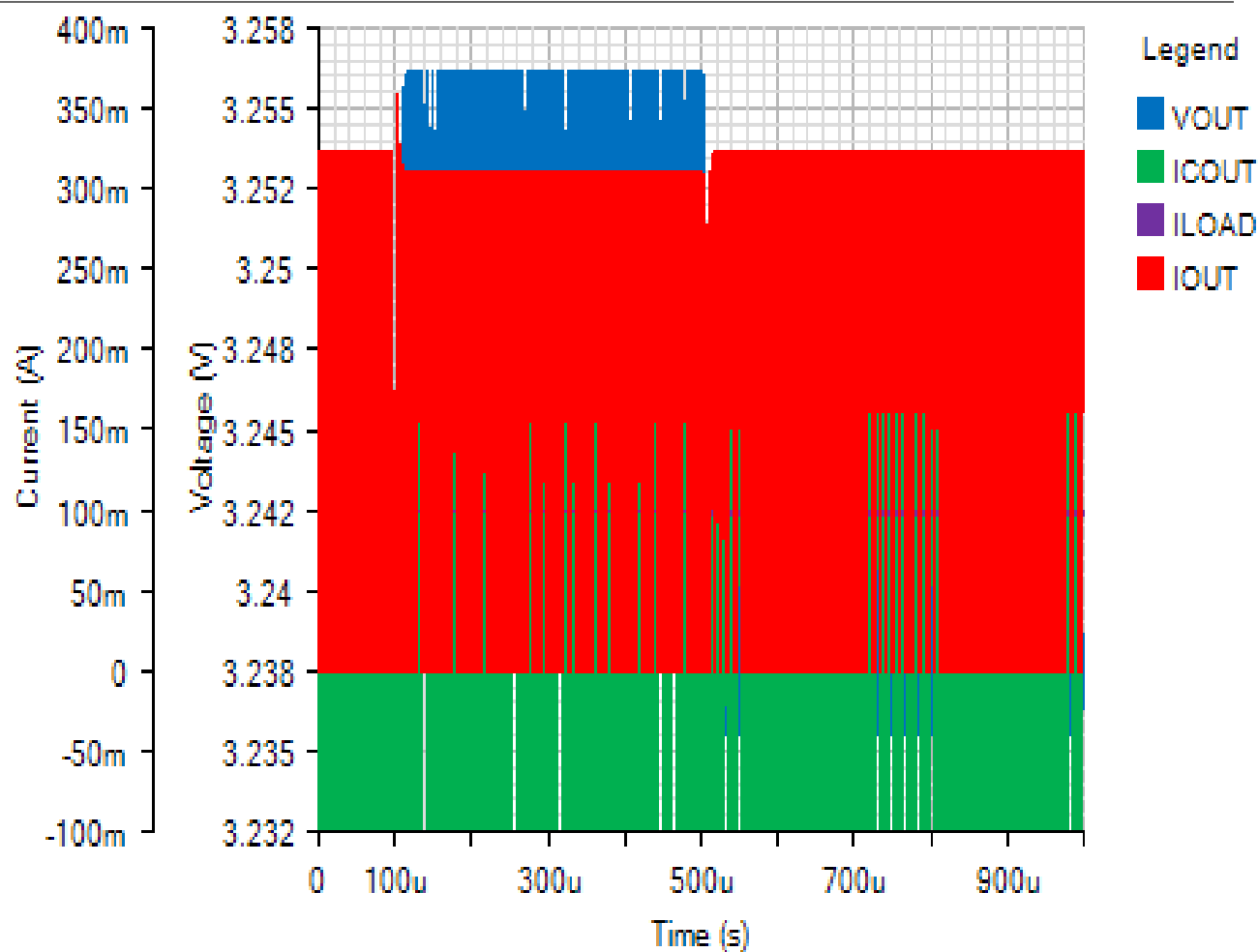
SWITCHING

Default



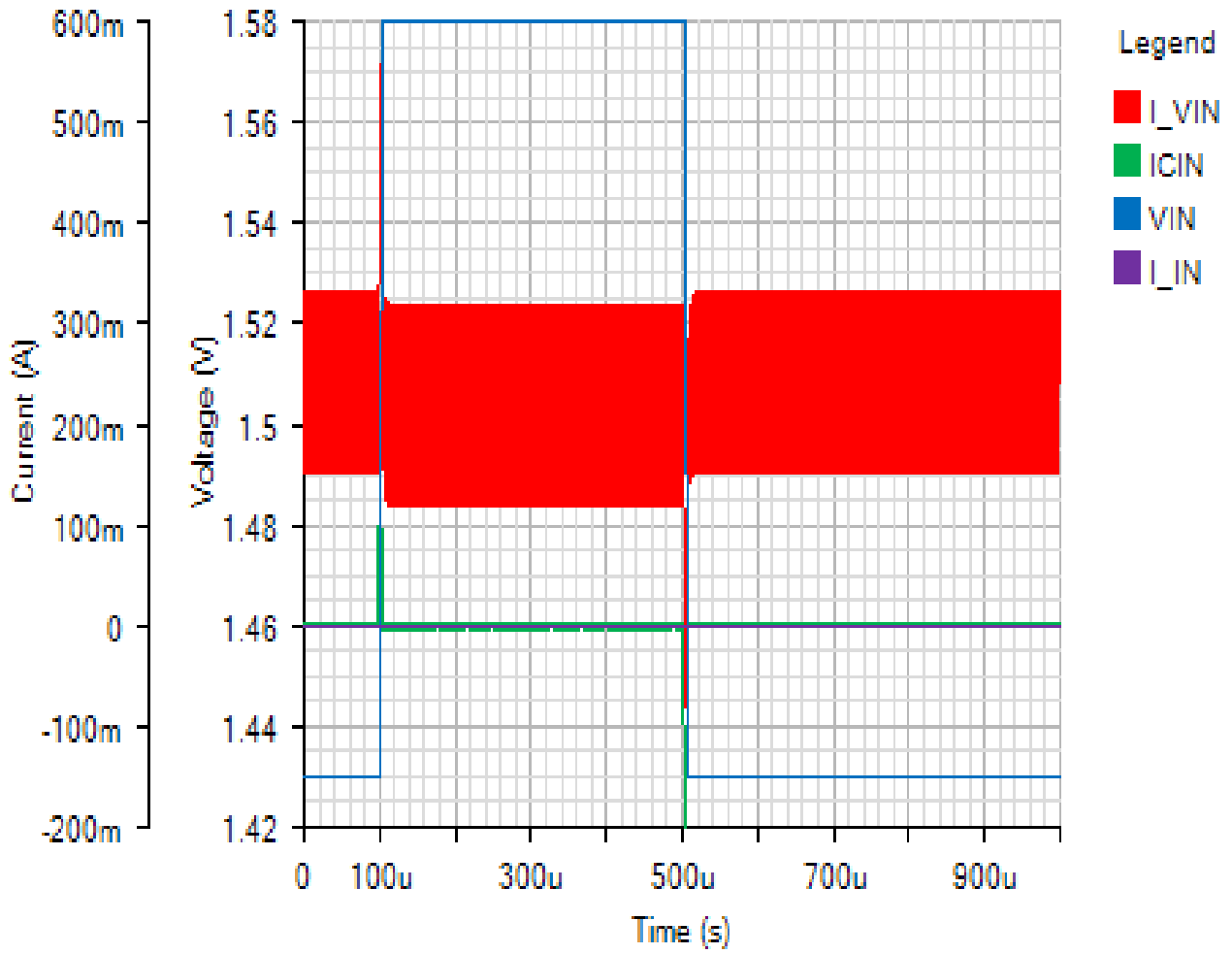
OUTPUT

Default



INPUT

Default



IC

Default

