

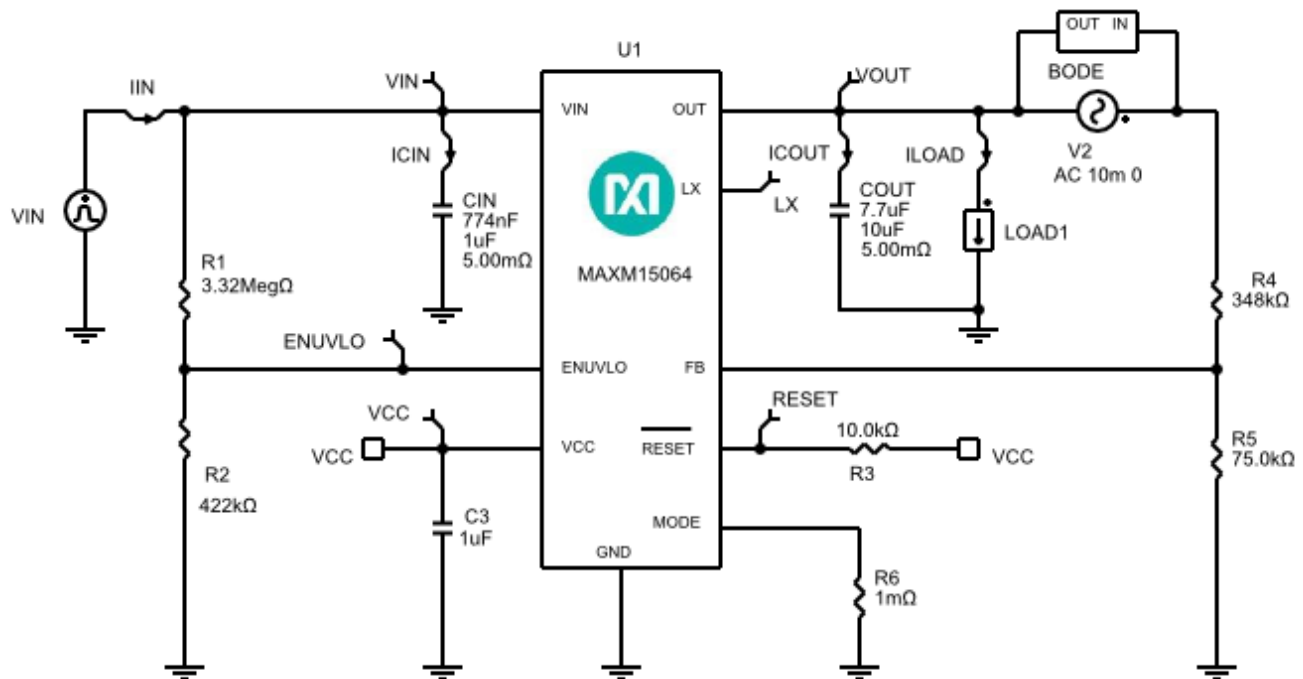
Initial Design

1.0

Design Requirements

Parameter	Value
Minimum Input Voltage	12V
Maximum Input Voltage	60V
Nominal Input Voltage	24V
Input Steady-State Ripple	5%
Input Undervoltage Lockout Level	10.8V
Output Voltage	5V
Load Current	0.3A
Mode of Operation	PWM
Switching Frequency	500kHz
Ambient Temperature	25°C
Soft Start time	4ms

Schematic

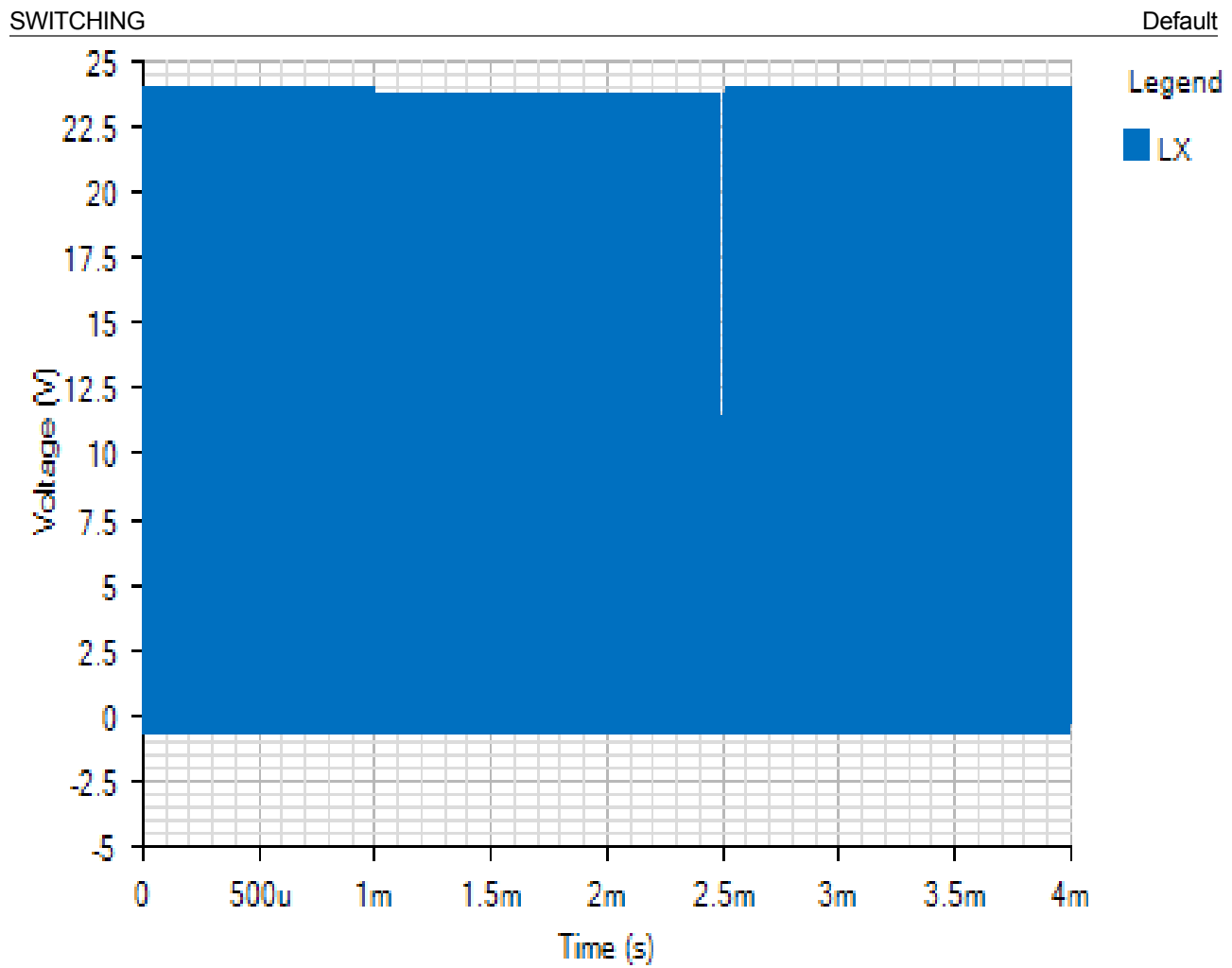


BOM

Ref	Qty	Part Number	Manufacturer	Description
U1	1	MAXM15064	User-Defined	IC
C3	1	CC0603KRX7R6BB105	Yageo	Cap Ceramic 1uF 10V X7R 10% Pad SMD 0603 125°C T/R
CIN	1	C3216X7R2A105K160AA	TDK	Cap Ceramic 1uF 100V X7R 10% SMD 1206 125C Plastic T/R
COUT	1	C1206C106K9RAC	Kemet	Cap Ceramic 10uF 6.3V X7R 10% SMD 1206 125C Bulk
R1	1	RC0402FR-073M32L	Yageo	Res Thick Film 0402 3.32M Ohm 1% 0.063W(1/16W) ±100ppm/°C Epoxy Pad SMD T/R
R2	1	ERJ2RK4223X	Panasonic	Res Thick Film 0402 422K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R
R3	1	ERJ2RK1002X	Panasonic	Res Thick Film 0402 10K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R
R4	1	ERJ2RK3483X	Panasonic	Res Thick Film 0402 348K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R
R5	1	ERJ2RK7502X	Panasonic	Res Thick Film 0402 75K Ohm 1% 0.1W(1/10W) ±100ppm/°C Pad SMD Automotive T/R

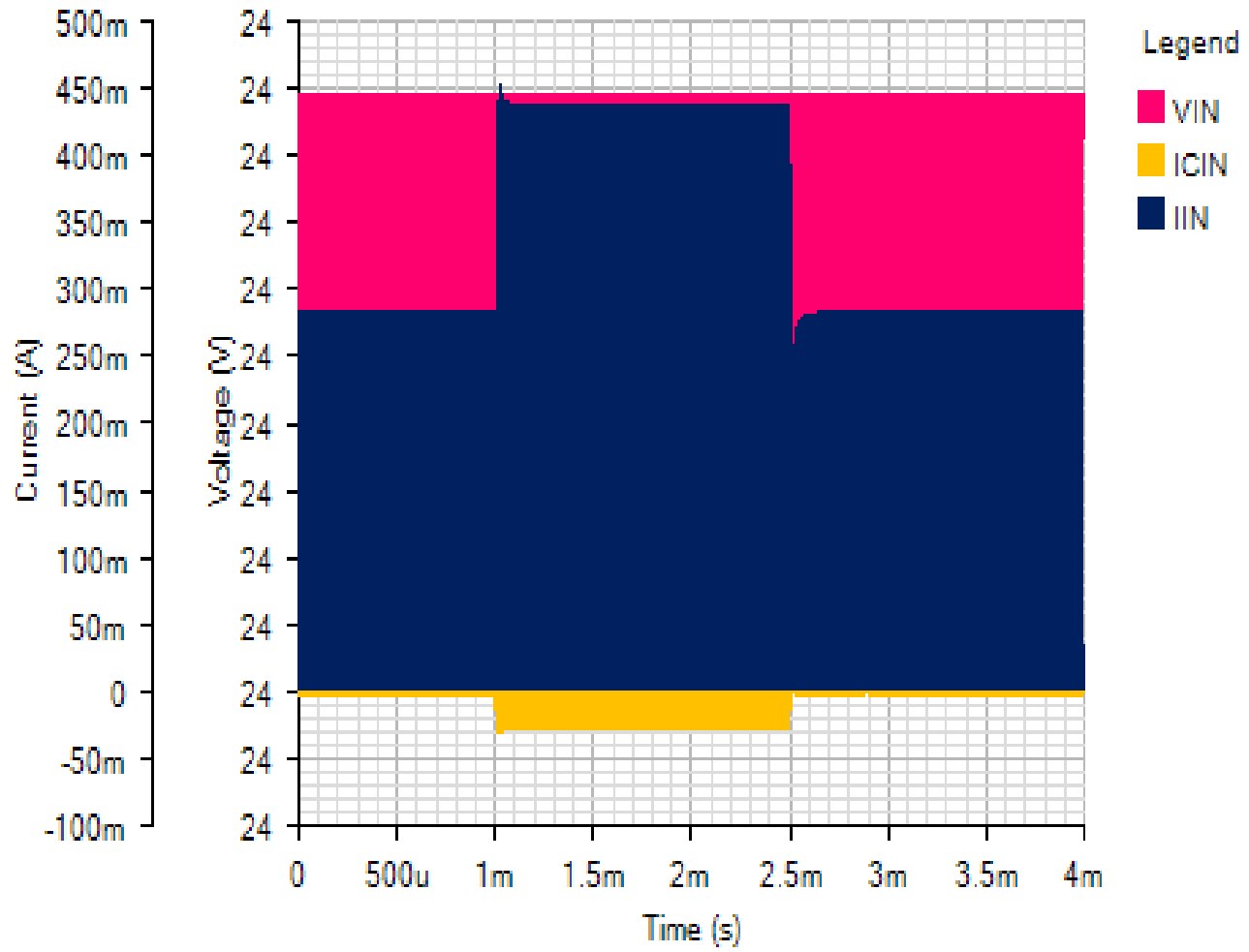
Simulation Results

Load step - Mon Nov 26 2018 13:24:07



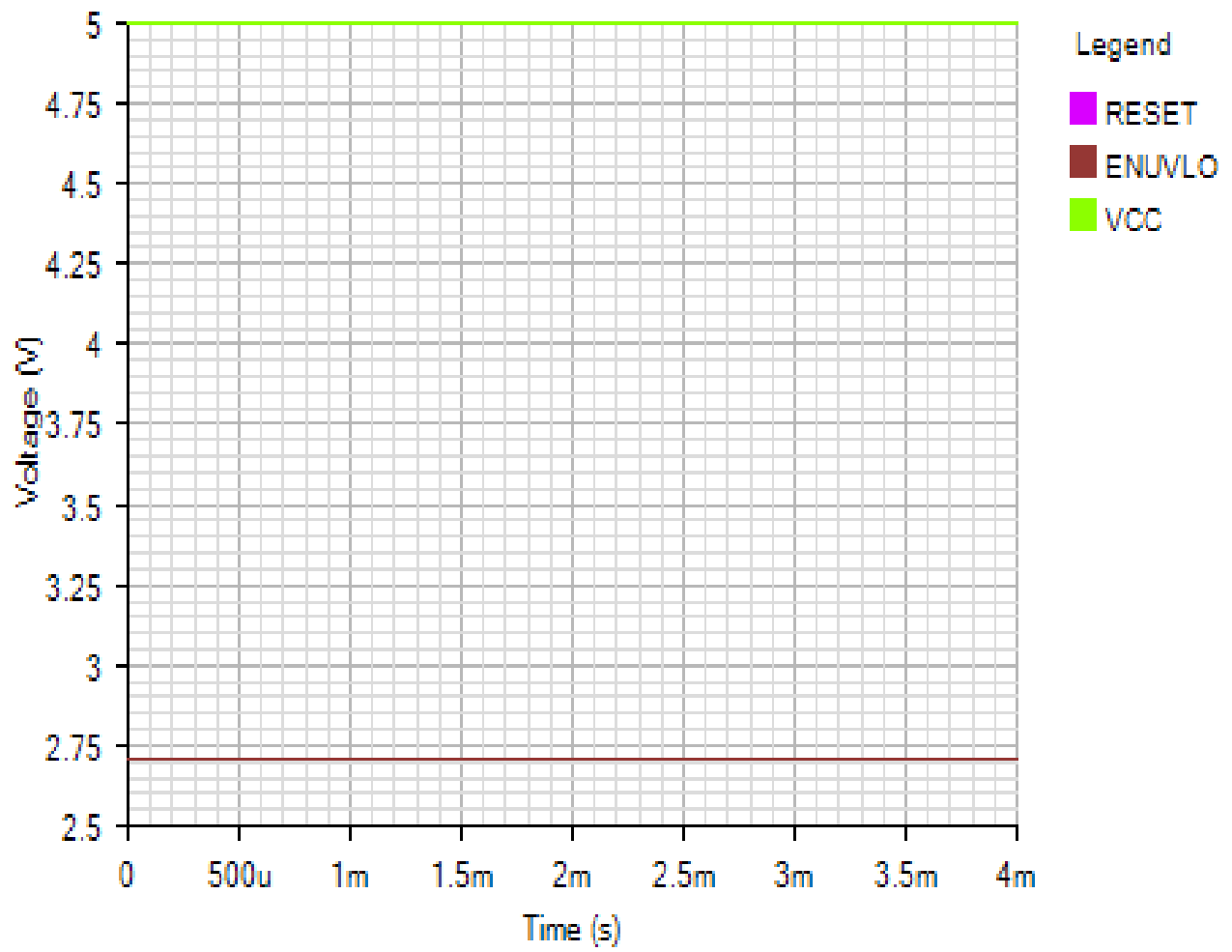
INPUT

Default



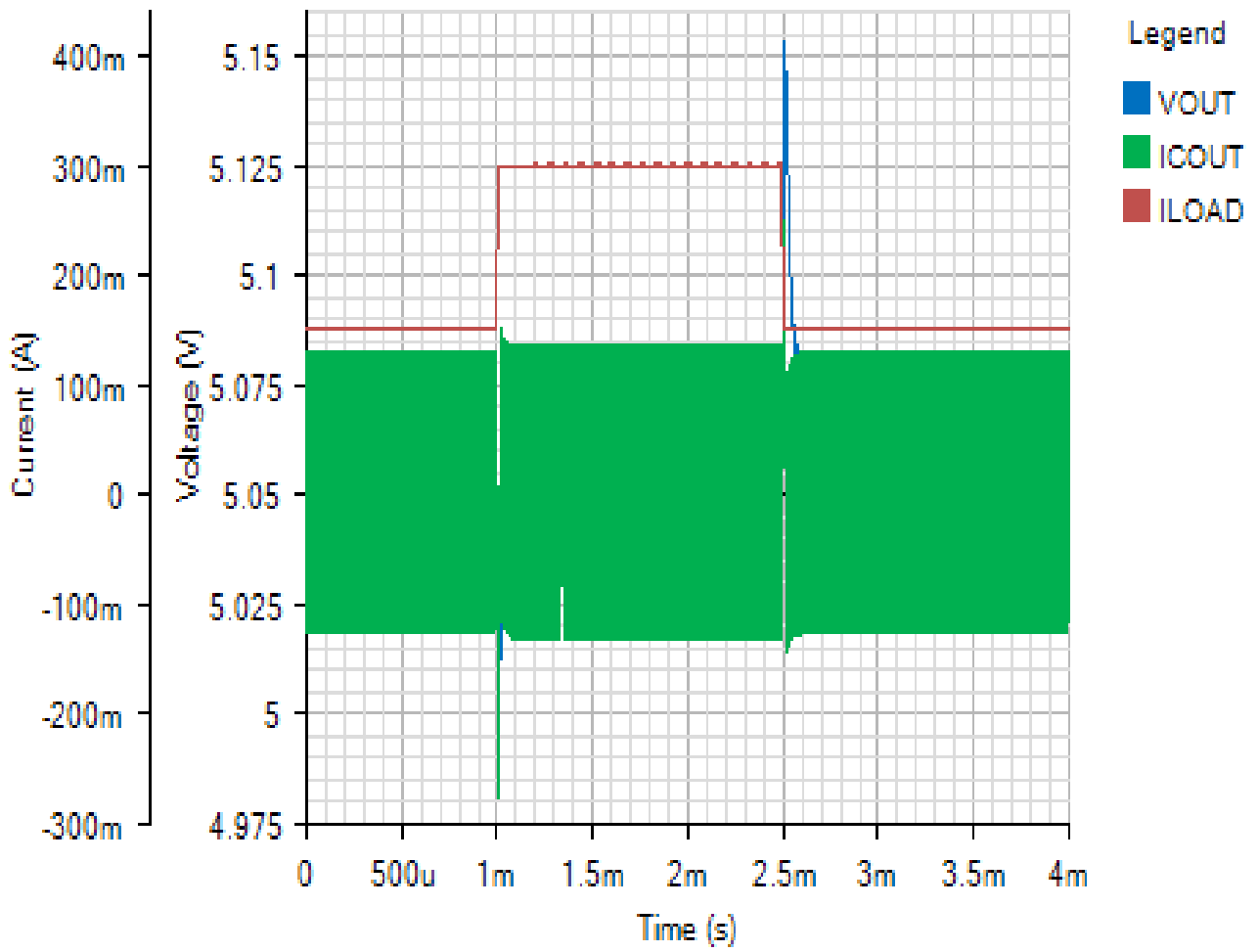
IC

Default



OUTPUT

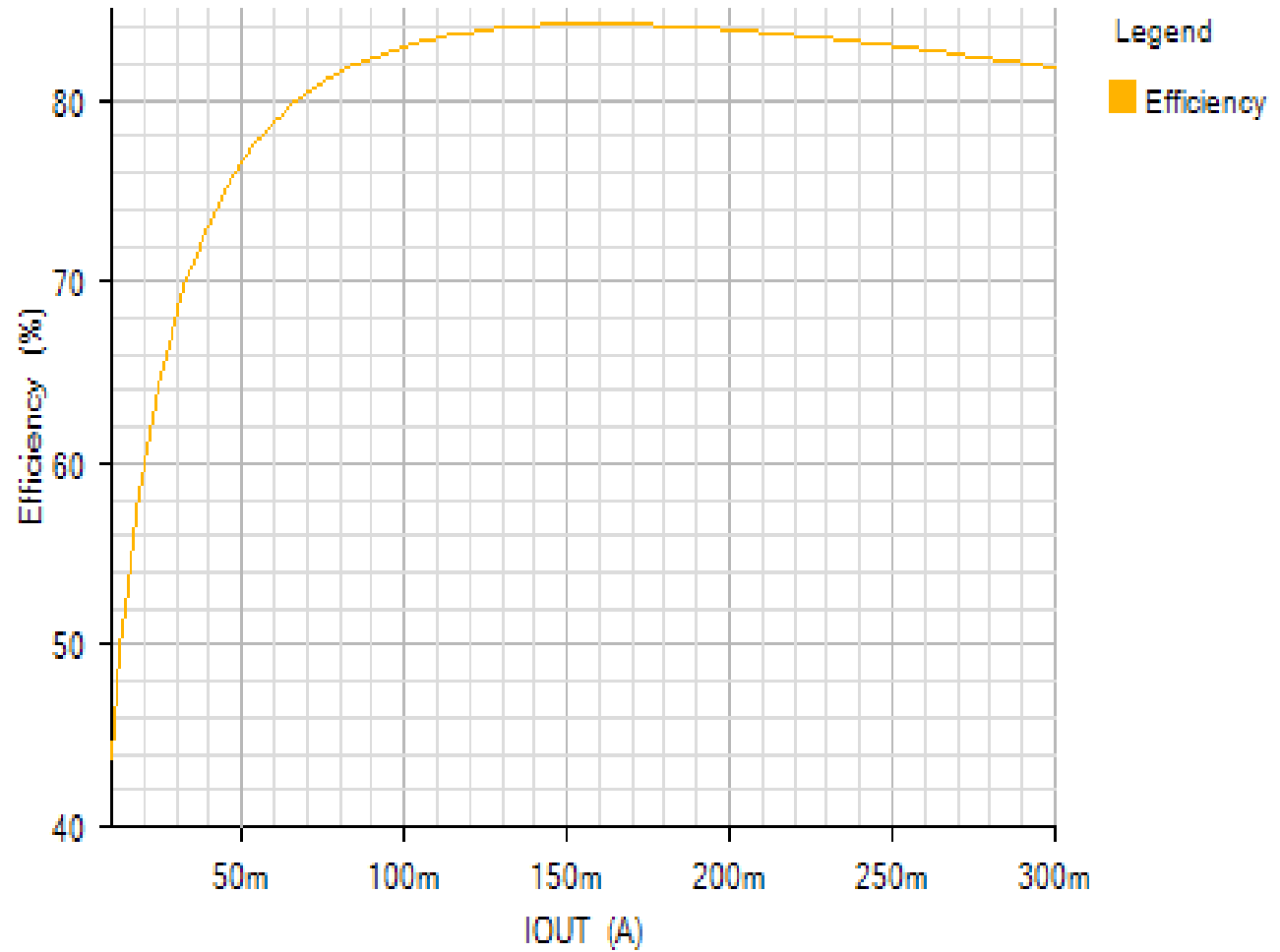
Default



Efficiency - Mon Nov 26 2018 13:24:07

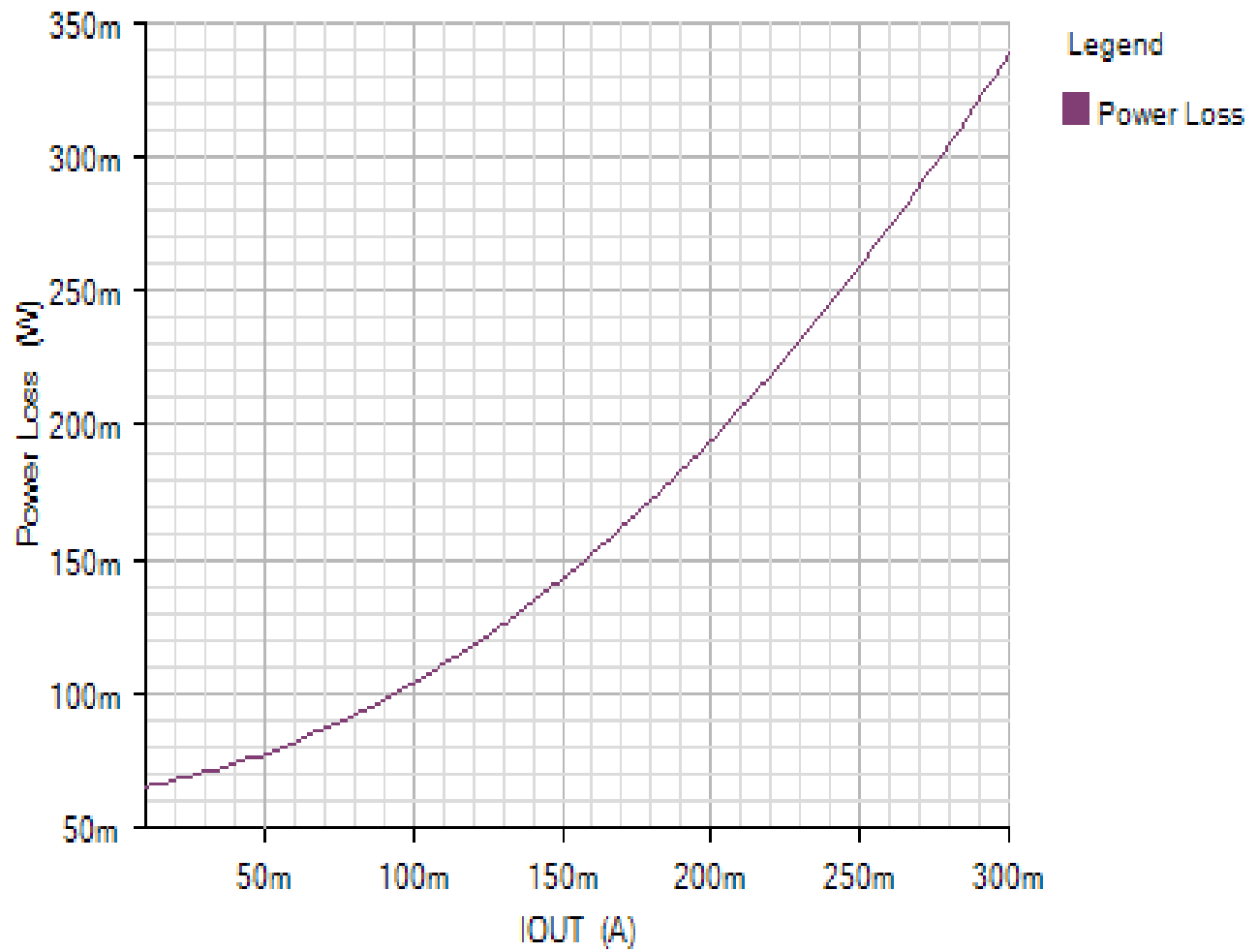
EFFICIENCY_PLOT

Default



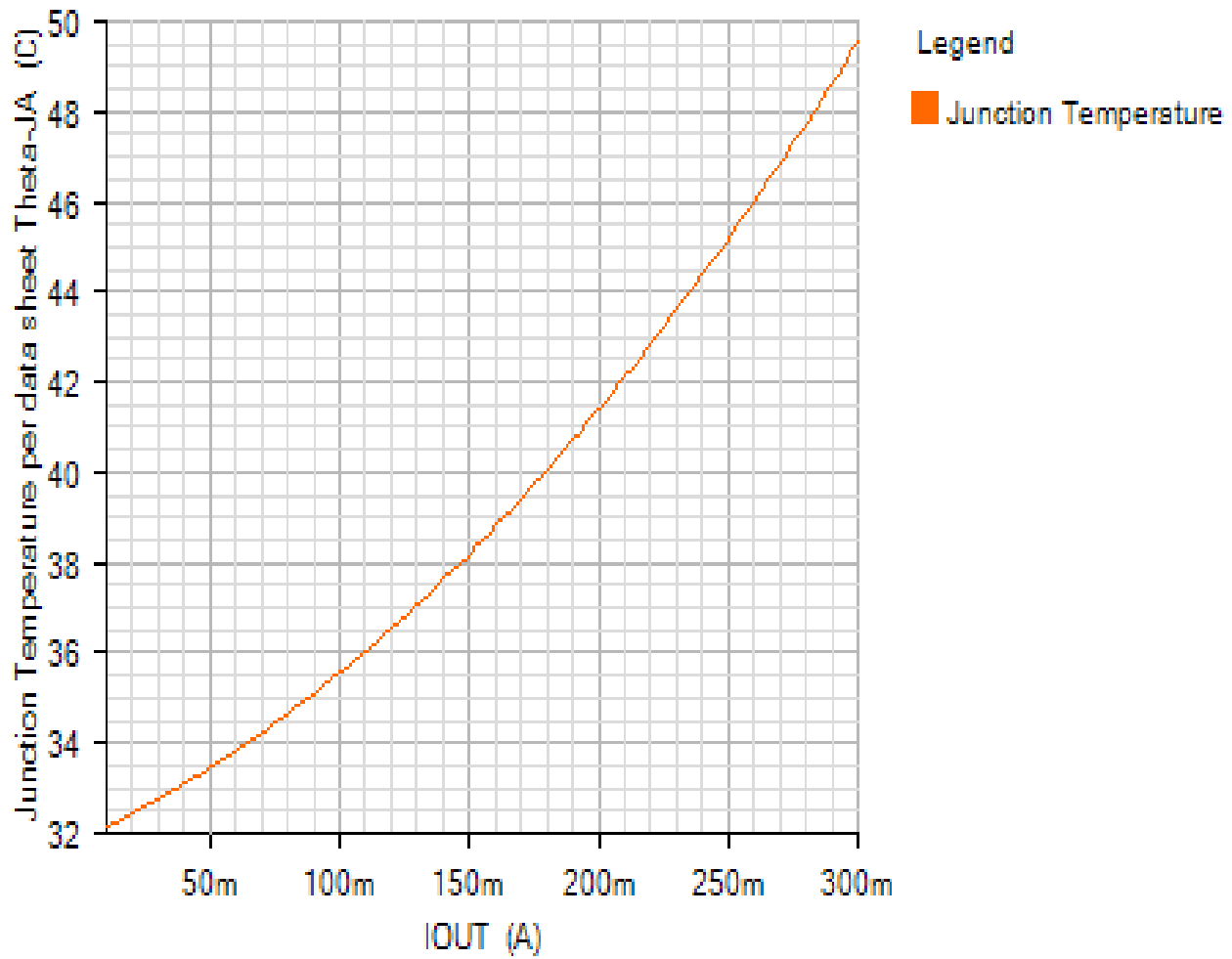
POWER_LOSS_PLOT

Default



JUNCTION_TEMPERATURE_PLOT

Default



Losses

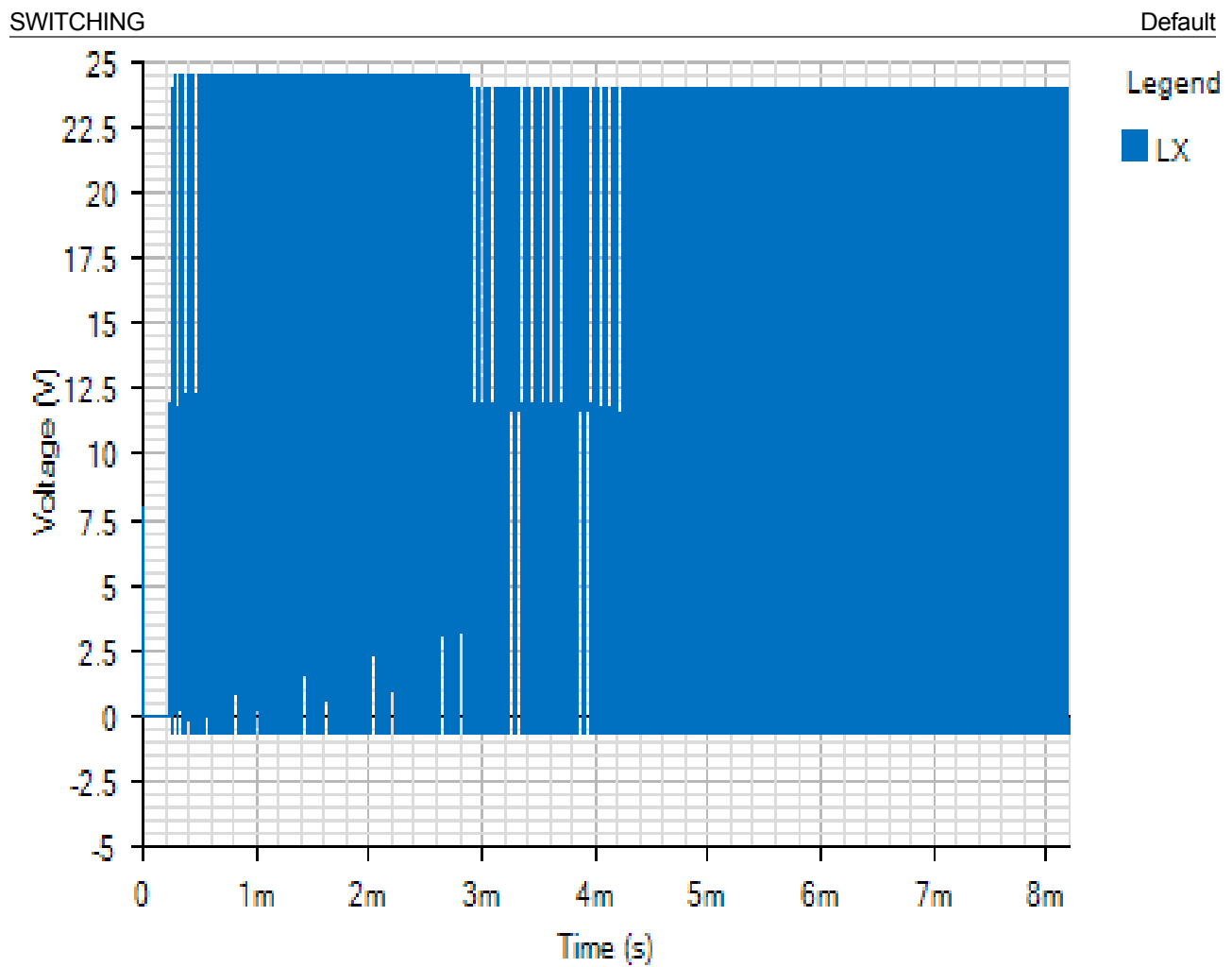
Component

Loss (W)

% of total

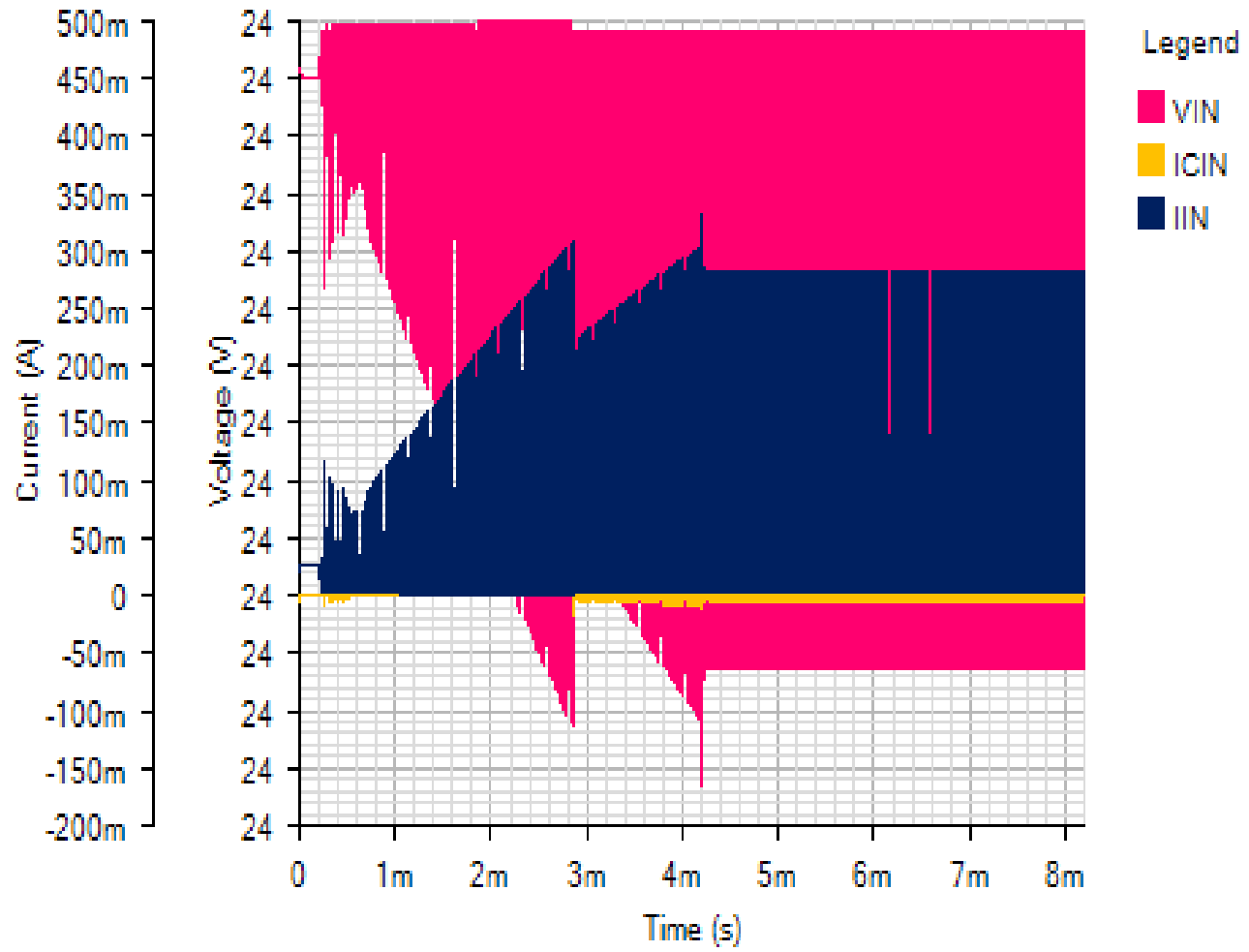
Component	Loss (W)	% of total
Total	0	100

Start Up - Mon Nov 26 2018 13:24:07



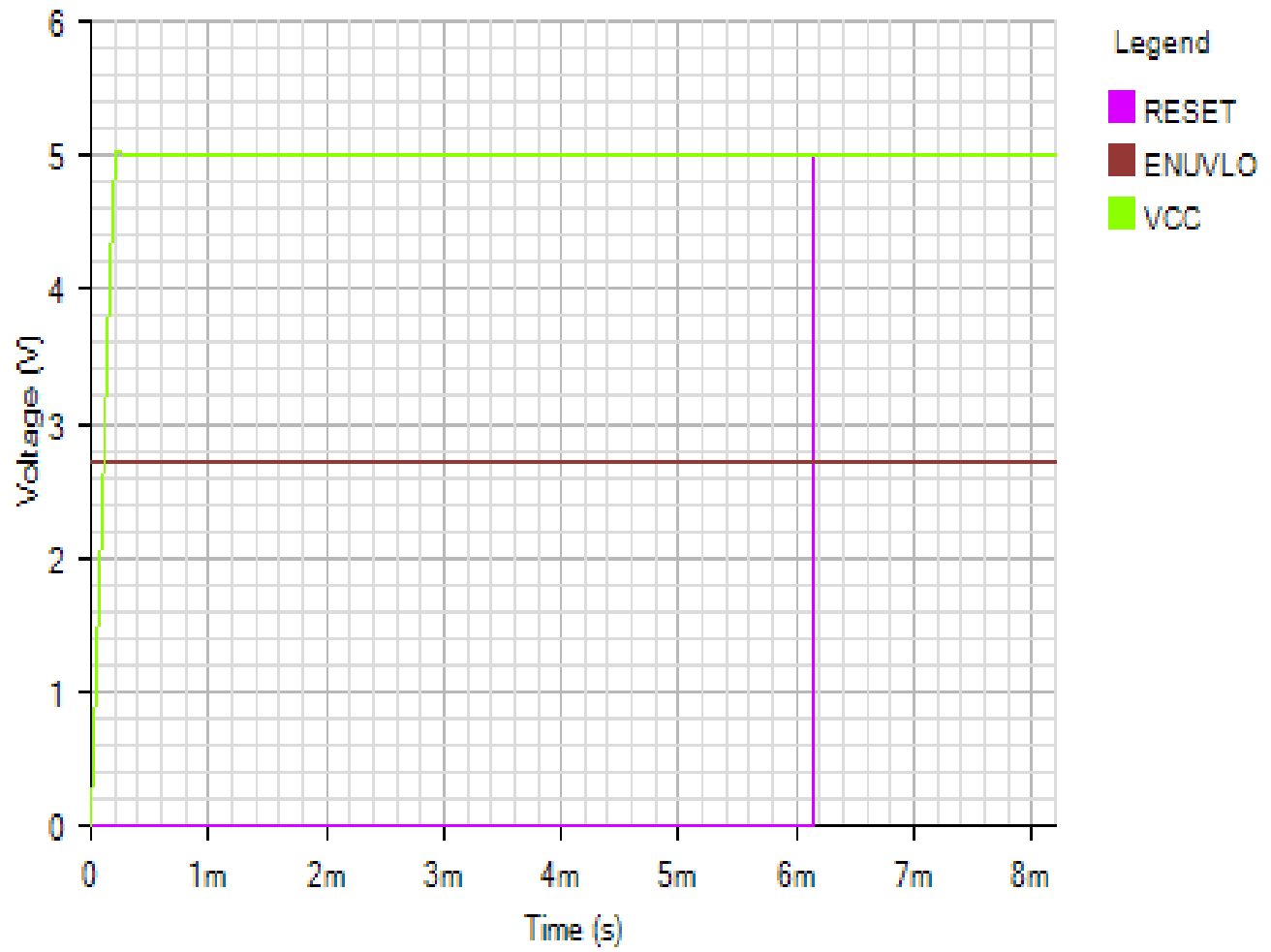
INPUT

Default



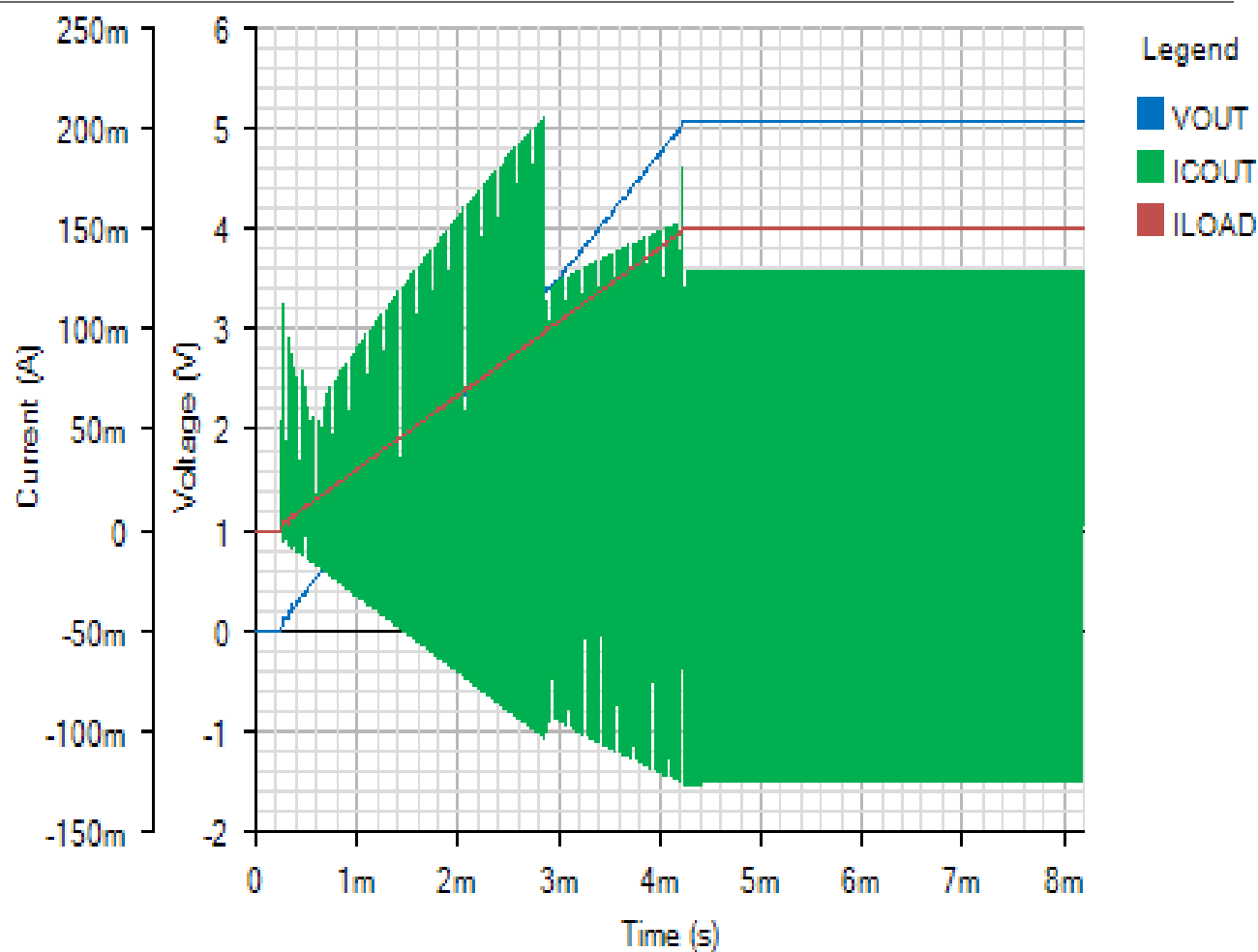
IC

Default



OUTPUT

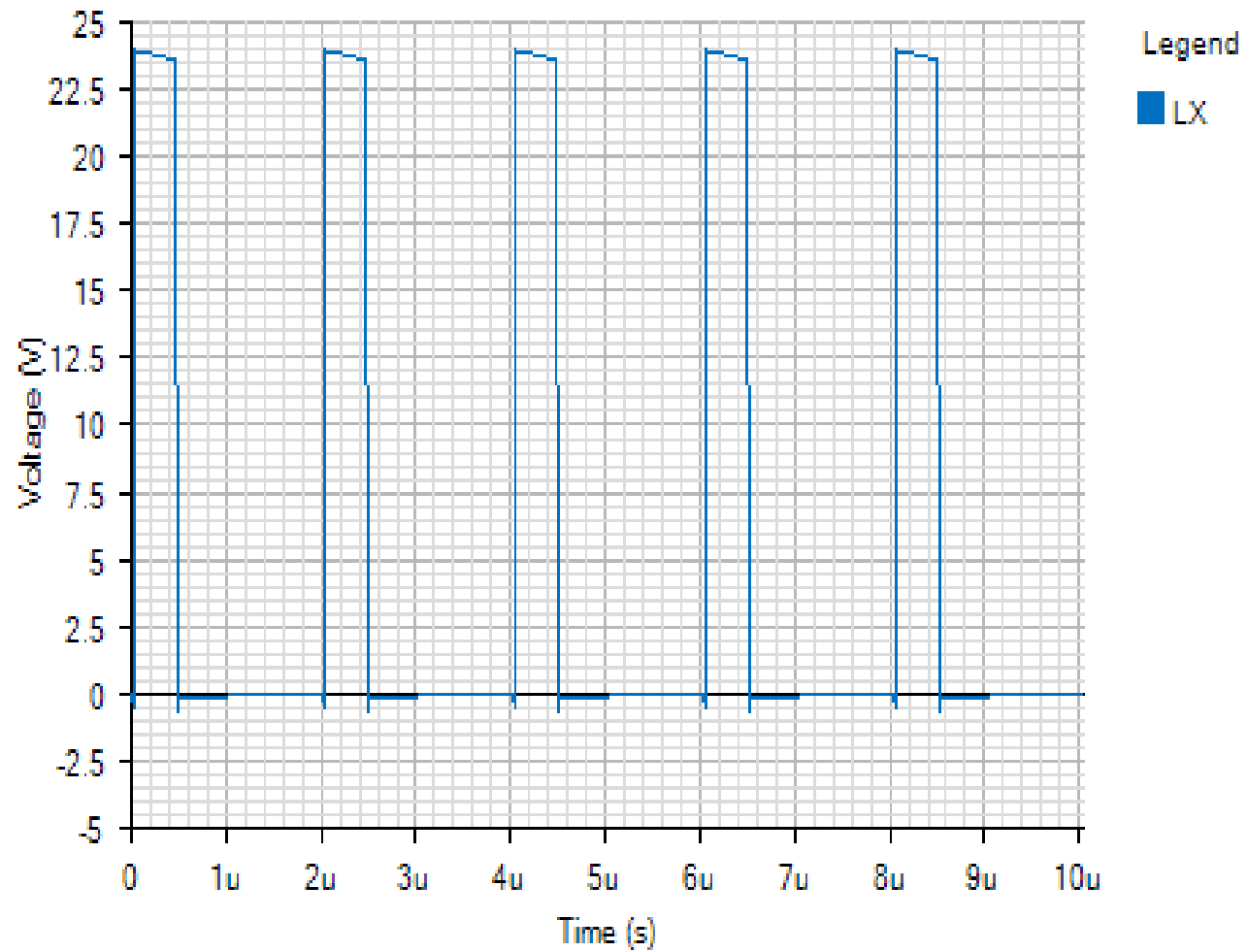
Default



Steady state - Mon Nov 26 2018 13:24:07

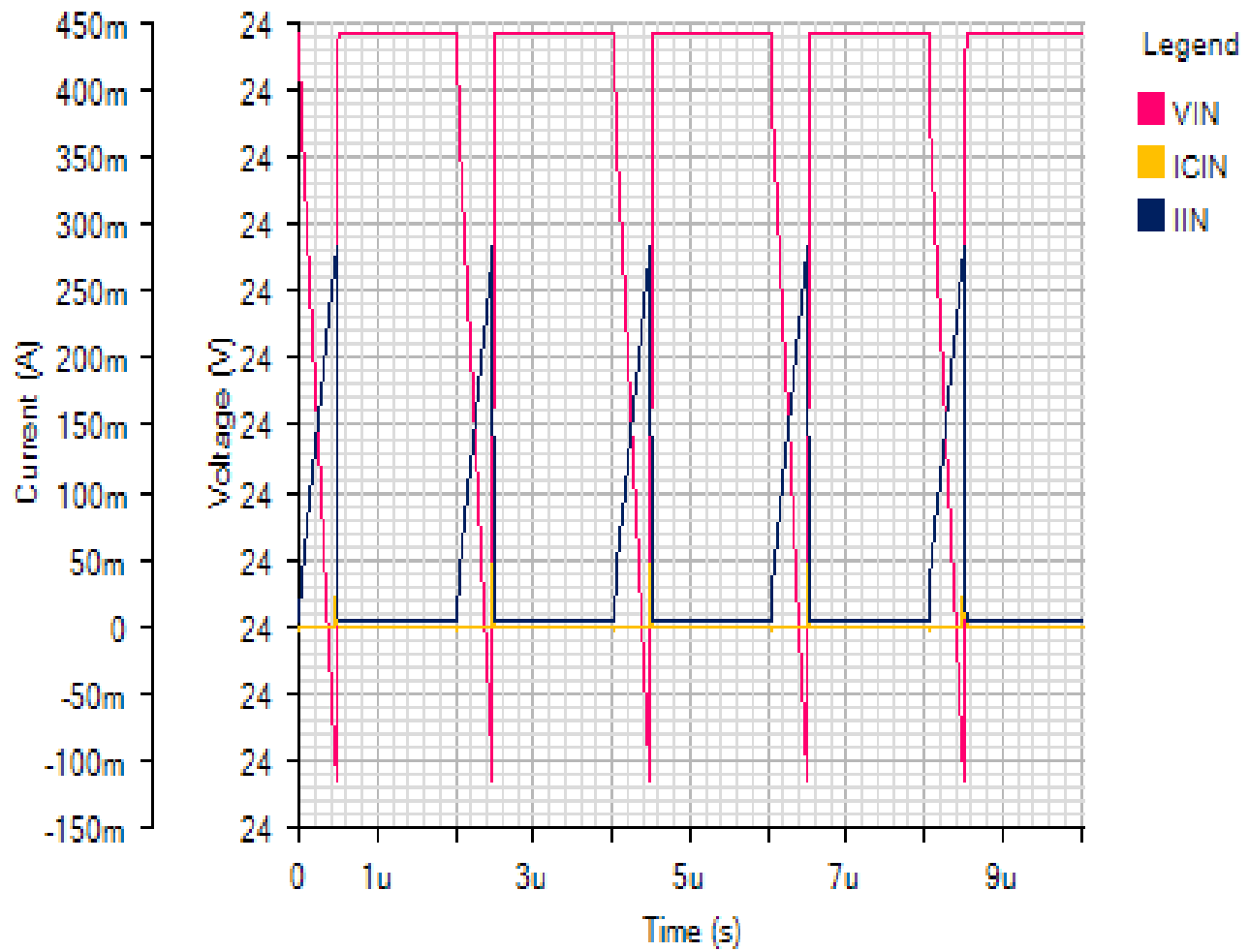
SWITCHING

Default



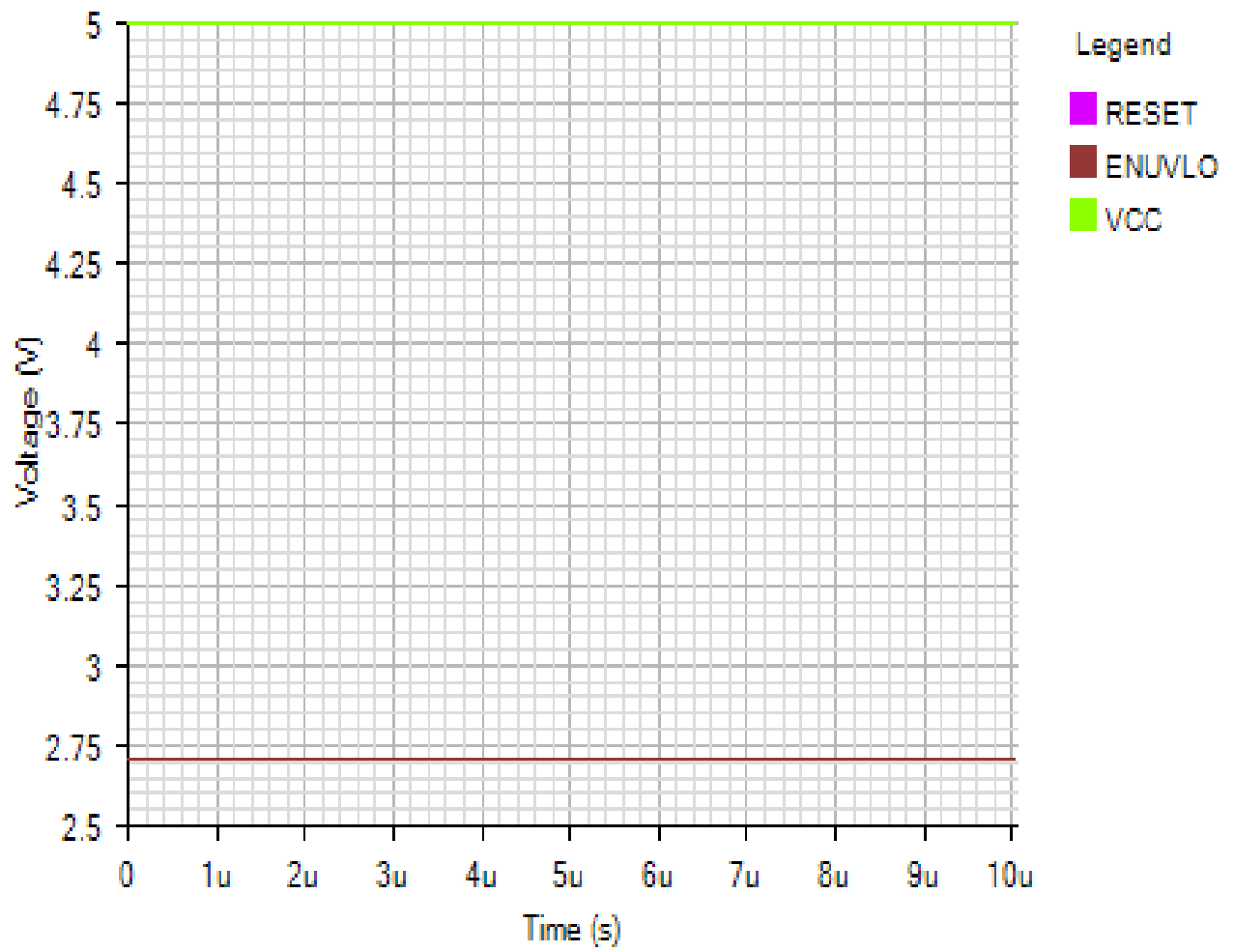
INPUT

Default



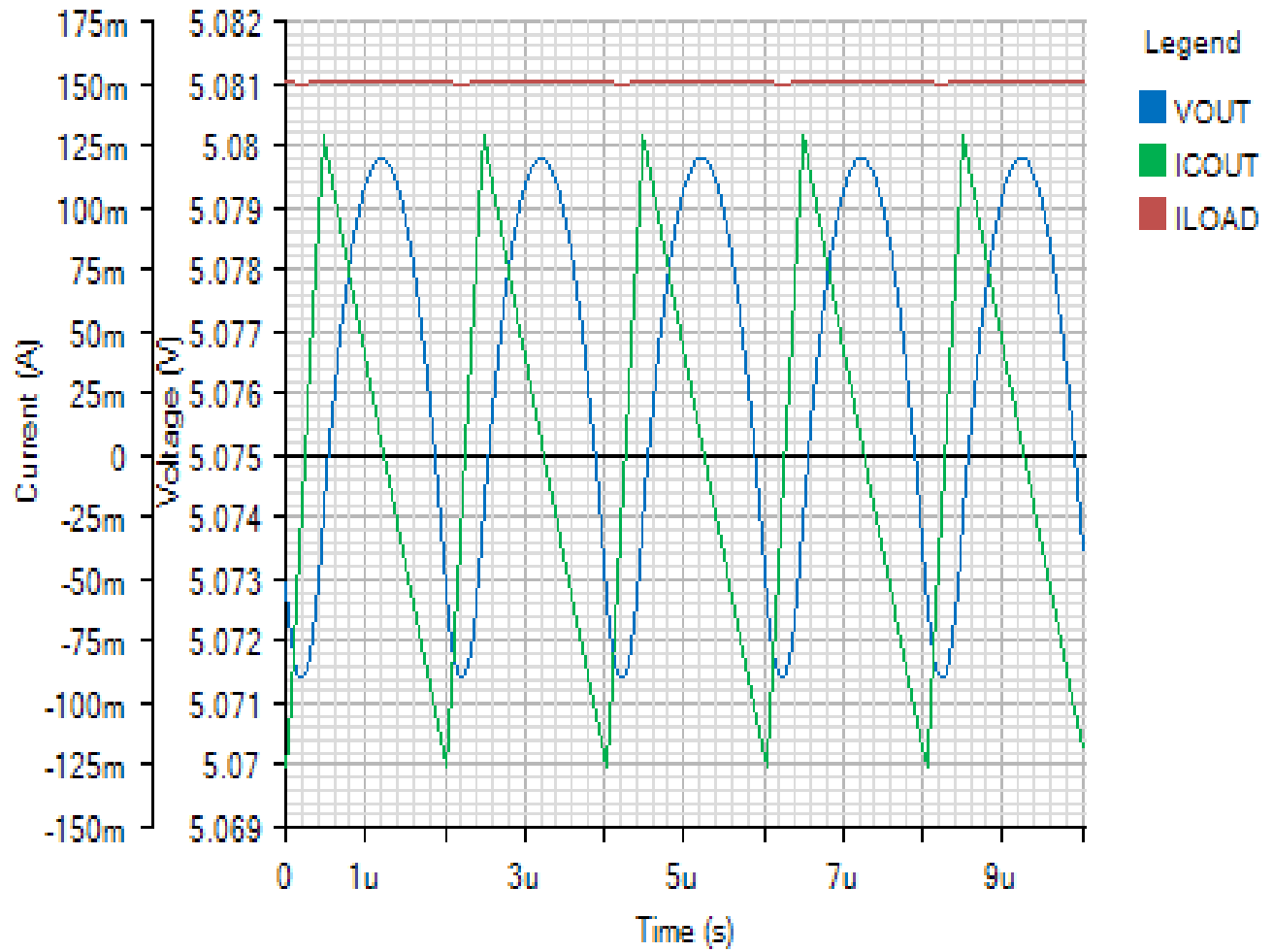
IC

Default



OUTPUT

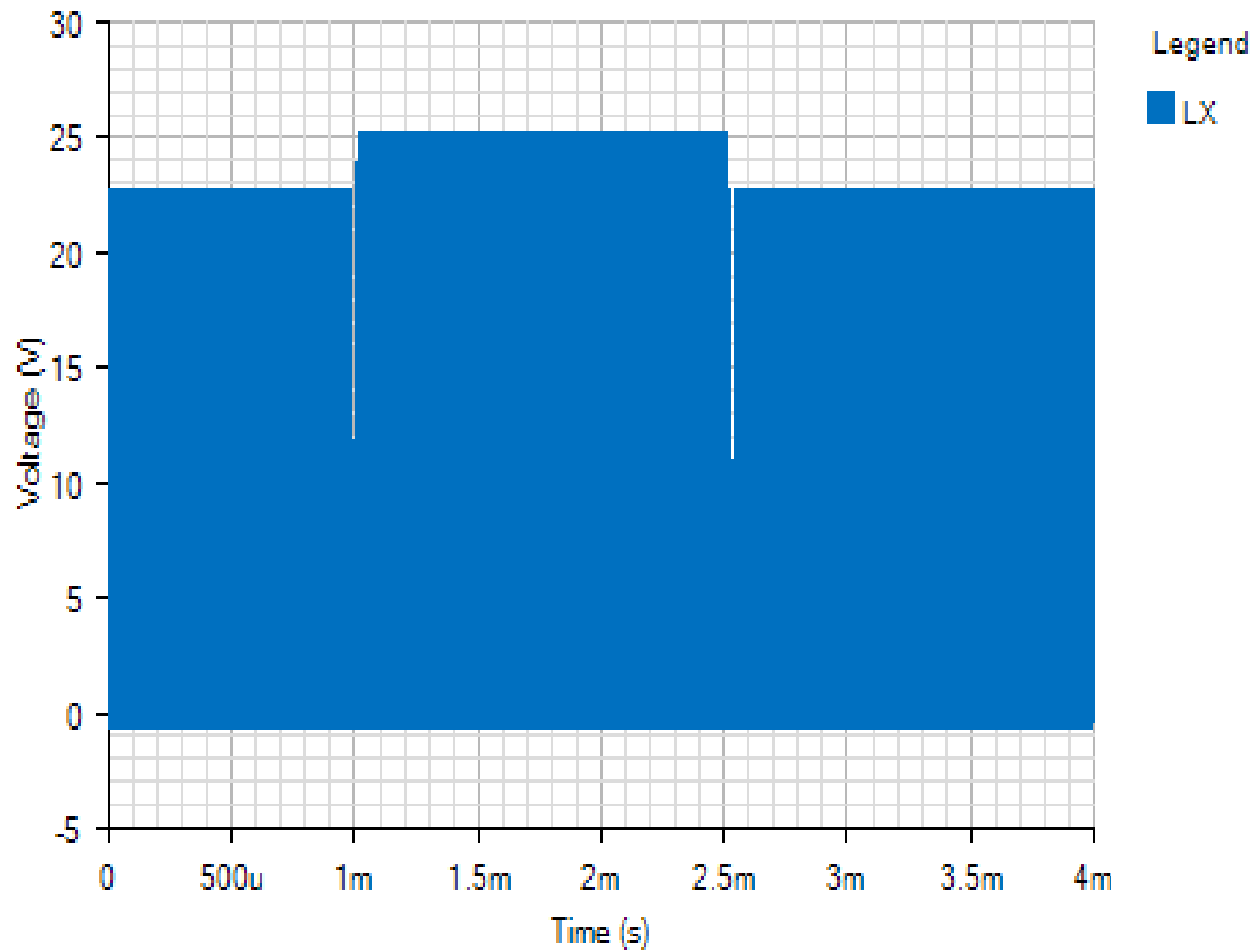
Default



Line Transient - Mon Nov 26 2018 13:24:07

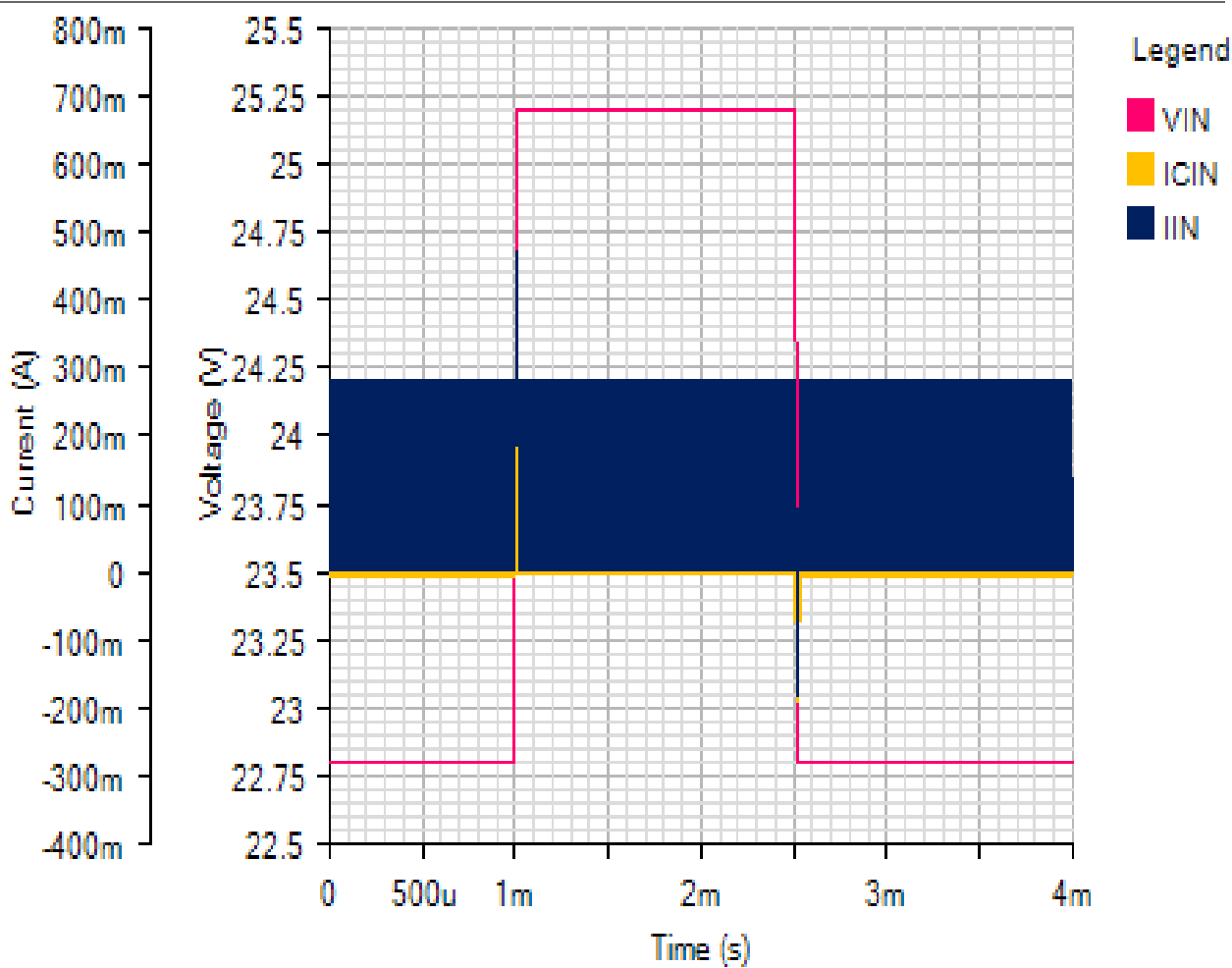
SWITCHING

Default



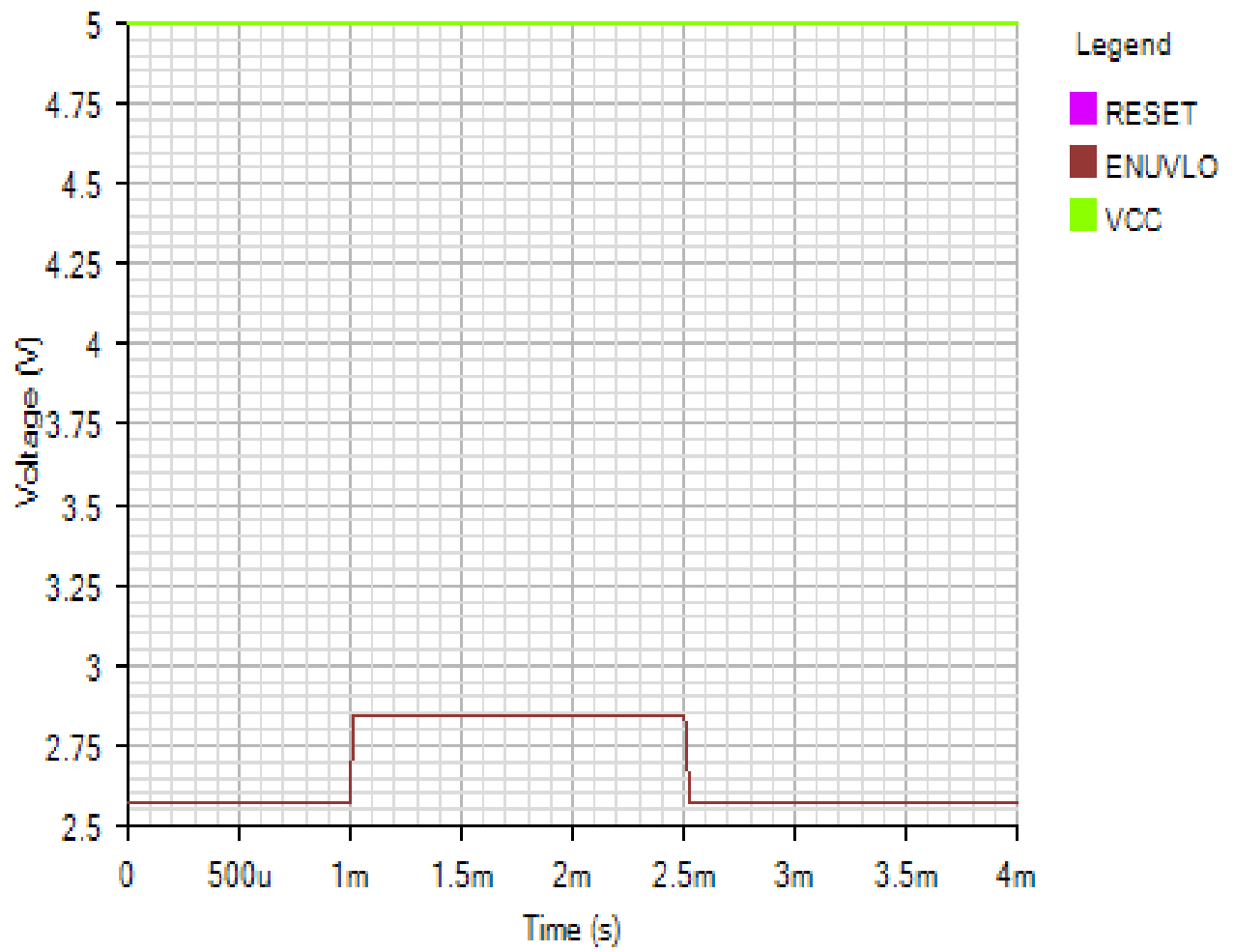
INPUT

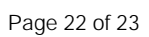
Default



IC

Default

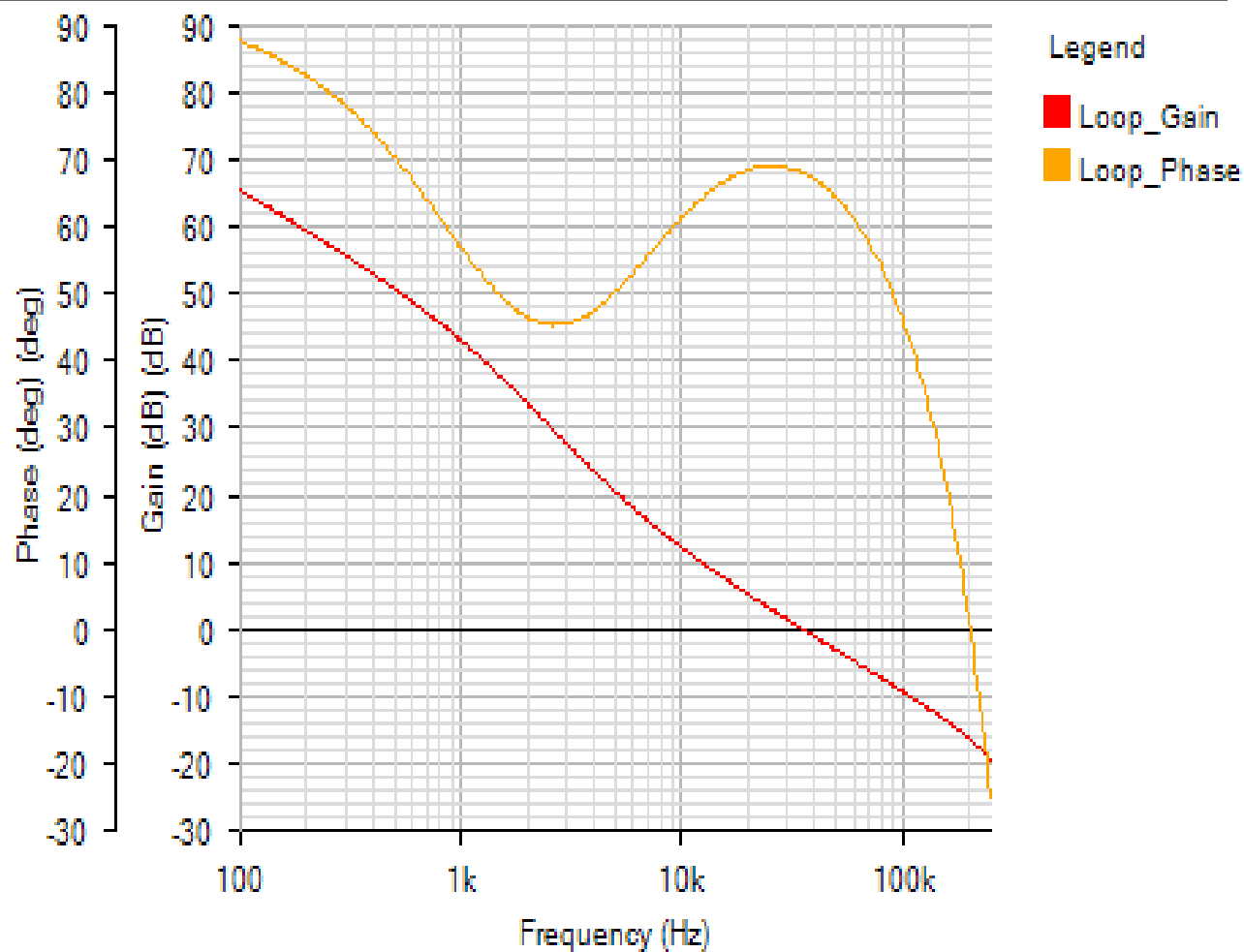




AC Loop - Mon Nov 26 2018 13:24:07

BODE

Default



20 30 40 50 60 70 80 90 100 110