



LTspice Device Model Based Power Converters

Download File: [LTSpice Power Converter Models Pak_Rev2.zip]

INTRODUCTION

Circuit models for several commonly used power converter topologies are provided based on the LTspice Wolfspeed device models for MOSFETs and Diodes. The intention of creating these converters is to provide an example reference circuit and a quicker way to evaluate the performance of Wolfspeed SiC MOSFETs and diodes. These circuit models enable a user to quickly modify a known working circuit to create a custom design that meets the user's specifications.

PREREQUISITE

- LTSPICE simulation software (<http://www.linear.com/designtools/software/#LTspice>)
- Wolfspeed MOSFET Spice package library
- Wolfspeed Diode Spice package library

MODEL INSTALLATION

- Extract the zip file.
- Copy model file and paste it into the LTSPICE directory or any folder that user normally used. Typical path is given by (C:\Program Files (x86)\LTC\LTspiceIV\). This would make the model appear in the open window.

MODEL POWER CONVERTER SPECIFICATION

Items	Switch Mode Power Supply	Vin (V)	Vout (V)	Fsw (KHz)	Po (W)	Efficiency (%)	Wolfspeed Device part number
1	2KW Buck Boost Converter	120	240	100	2K	97.33	C3M0065090J, C4D20120A
2	2KW Boost Converter	120	240	100	2K	98.66	C3M0065090J, C4D20120A
3	5KW Buck Converter	400	120	100	5K	97.11	C2M0025120D, C4D20120A
4	Multiple Output 750W Flyback Converter	115	+/-12, +5, +3.3	100	750	89.86	C3M0065090J, C4D20120A, C3D10060A, C3D04060A
5	3Phase 2 Level 33KW PV Inverter	850	480	100	33k	98.68	C2M0025120D
6	8KW Resonant LLC Full Bridge Converter	650	270	200	8k	98.07	C2M0160120D, C3D08060A



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7	1Phase 2 Level Bipolar 7.5KW Inverter	480	230	50	7.5K	98.16	C2M0025120D
8	1Phase 2 Level Unipolar 7.5KW Inverter	480	230	50	7.5K	98.19	C2M0025120D
9	200W Forward Converter	115	12	100	200	87.57	C3M0065090J, C5D50065D, C3D08060A
10	10KW Interleaved Boost Converter	450	640	100	10K	99.28	C2M0080120D, C4D10120D
11	5KW Active Single Front End Converter	120	400	100	5K	94.89	C2M0025120D

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