SIMPLE SWITCHER® Products Power Xilinx 7-Series FPGAs

Easy to Use Power Solution for Avnet's Kintex 7 Mini Module

Texas Instruments

SIMPLE SWITCHER Solutions

The SIMPLE SWITCHER® Power Module supply designed by Texas Instruments features the ease of use provided by the SIMPLE SWITCHER family of products as well as excellent performance and scalability to meet the needs of the latest 7-Series FPGAs from Xilinx.
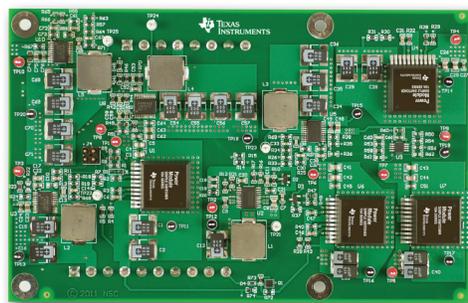
The LMZ SIMPLE SWITCHER power modules provide a complete integrated switching power solution in a single package, offer excellent thermal performance and come pretested and certified to meet strict CSPR 22 Class B requirements for radiated and conducted EMI. Two LMZ22008 devices provide discrete regulated outputs, while two LMZ22010 modules are used in a current sharing mode turning the two 10A converters into a single 20A power house. The LMZ22010 devices are used in parallel to provide the 3.3V regulated output to the board, and also provide the input voltage to other supplies on the power module. By creating a lower voltage intermediate bus, TI is able to boost overall board efficiency.

All devices featured in the design are fully supported by WEBENCH® design tools allowing for ease of use and optimization for different system requirements.
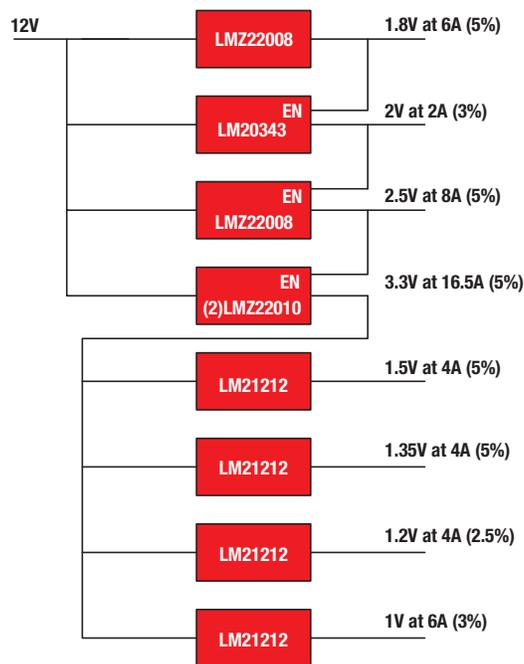
WEBENCH® FPGA Power Architect

With a single click, prepare power supply loads for today's latest FPGAs including all voltage and current requirements with specified sequencing, noise filtering, and ripple sensitivity. Quickly configure multiple rail, multiple load FPGA power supplies for simulation and optimization.

- Save time and accuracy with one-click configuration
- Modify loads for system needs within datasheet performance guidelines
- Optimize the selection of preferred power topologies including buck, boost, buck-boost, flyback, and sepic architectures

SIMPLE SWITCHER Power Module board for Xilinx 7-series FPGAs

12V	LMZ22008	1.8V at 6A (5%)
	EN LM20343	2V at 2A (3%)
	EN LMZ22008	2.5V at 8A (5%)
	EN (2)LMZ22010	3.3V at 16.5A (5%)
	LM21212	1.5V at 4A (5%)
	LM21212	1.35V at 4A (5%)
	LM21212	1.2V at 4A (2.5%)
	LM21212	1V at 6A (3%)

AVNET electronics marketing

National Products from Texas Instruments

Avnet Kintex 7 Xilinx Development Board features the following power products from Texas Instruments

Product ID	Description
LMZ22008	8A SIMPLE SWITCHER® Power Module with 20V Maximum Input Voltage and Current Sharing
LM20343	36V, 3A Adjustable Frequency Synchronous Buck Regulator
LMZ22010	10A SIMPLE SWITCHER® Power Module with 20V Maximum Input Voltage and Current Sharing
LM21212	12A High Efficiency Synchronous Point of Load Buck Regulator with Frequency Synchronization

SIMPLE SWITCHER Product Family

Nano Power Modules

Product ID	Output Current (A) Max	Input Voltage (V)	Adjustable Output Voltage (V)	Operating Junction Temperature (°C)	Features	Frequency (kHz)	CISPR22 Class B EMI	Package Size (mm)
LMZ10500	0.65	2.7 to 5.5	0.6 to 3.6	-40 to 125	EN, SS	2000	✓	3.0 x 2.5 x 1.2
LMZ10501	1	2.7 to 5.5	0.6 to 3.6	-40 to 125	EN, SS	2000	✓	3.0 x 2.5 x 1.2

LMZ1-Series Power Modules

Product ID	Output Current (A) Max.	Input Voltage (V)	Adjustable Output Voltage (V)	Peak Efficiency (%)	Operating Junction Temperature (°C)	Features	EMI EN55022/CISPR22 Class B Certification		Packaging
							Radiated	Conducted*	
LMZ10503/04/05	3/4/5	2.95 to 5.5	0.8 to 5	96	-40 to 125	EN, SS	✔	✔	TO-PMOD-7
LMZ12001/02/03	1/2/3	4.5 to 20	0.8 to 6	92	-40 to 125	EN, SS	✔	✔	TO-PMOD-7
LMZ14201/02/03	1/2/3	6 to 42	0.8 to 6	90	-40 to 125	EN, SS	✔	✔	TO-PMOD-7
LMZ12008/10	8/10	6 to 20	0.8 to 6	92	-40 to 125	EN, SS	✔	✔	TO-PMOD-11
LMZ13608/10	8/10	6 to 36	0.8 to 6	92	-40 to 125	EN, SS	✔	✔	TO-PMOD-11

* Additional input filter required

LMZ2-Series Power Modules

Product ID	Output Current (A) Max.	Input Voltage (V)	Adjustable Output Voltage (V)	Operating Junction Temperature (°C)	Features	EMI EN55022/CISPR22 Class B Certification		Packaging
						Radiated	Conducted*	
LMZ22003/5	3/5	6 to 20	0.8 to 5	-40 to 125	EN, SS, Freq Sync	✔	✔	TO-PMOD-7
LMZ23603/5	3/5	6 to 36	0.8 to 6	-40 to 125	EN, SS, Freq Sync	✔	✔	TO-PMOD-7
LMZ22008/10	8/10	6 to 20	0.8 to 6	-40 to 125	EN, SS, Freq Sync, Current Share	✔	✔	TO-PMOD-11
LMZ23608/10	8/10	6 to 36	0.8 to 6	-40 to 125	EN, SS, Freq Sync, Current Share	✔	✔	TO-PMOD-11

* Additional input filter required

TEXAS INSTRUMENTS

IMPORTANT NOTICE