

WEBENCH[®] Power Designer Basics and advanced

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Objectives



WEBENCH[®] Overview



Electrical/Thermal Simulation

Basic operating

Advance options,

Re-Comp(compensation circuit control), Editing

Export and Sharing



Summary



WEBENCH[®] Tools

Power Designer

Power supply and system power architecture

LED Designer

LED driver design and LED architecture

Sensor Designer

Sensor analog front end design

Active Filter Designer

Filter design and simulation

Clock Architect

Clock tree builder and simulation

LDC Designer

Inductive sensing applications

WEBENCH[®] Power Tools

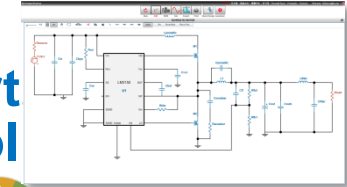
Power Designer	Create power supply designs including schematic, BOM and operating values
Visualizer	Visualize tradeoffs across dozens of solutions for power supply requirement
Optimizer	Optimize designs for small footprint, low cost and high efficiency
Simulation	Do electrical and thermal simulation to characterize dynamic circuit behavior
Architects	Create and optimize system level supplies for FPGAs, processors and custom loads
Edit	Edit the schematic and run Spice simulations
Export/BuildIt	Export your design to popular CAD tools and get prototype kits

14 Years of Modeling and Verification

Faster & More Effective

2014 Edit

2012 Export To CAD Tool



2010 FPGA Power Architecture



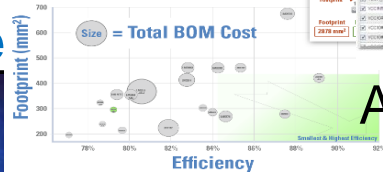
Total Customization

2009 Visualization



Immediate Integration

1999 Online



Agile Systems

Agile Designs

New Capabilities

Offline Pass

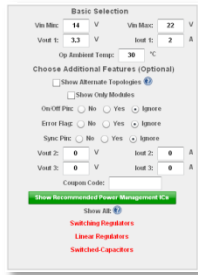


WEBENCH® Design Tools

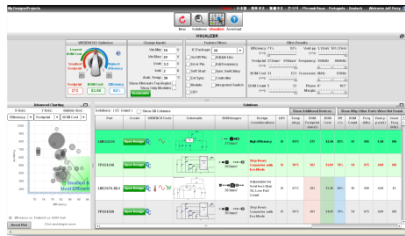
Trial and Error

WEBENCH[®] tools: Start to finish design and prototype

1. Choose a part



Enter specifications



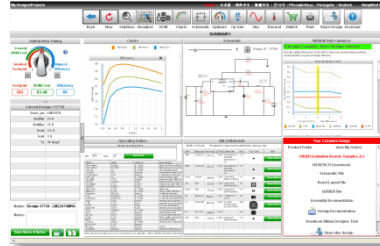
Select solution

WEBENCH Visualizer

WEBENCH Optimizer

Optimize for footprint, price and efficiency; use graphs to see design

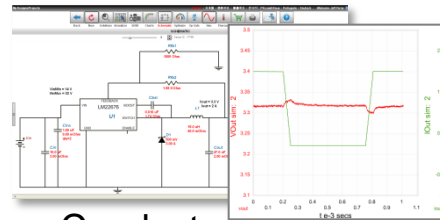
2. Create a design



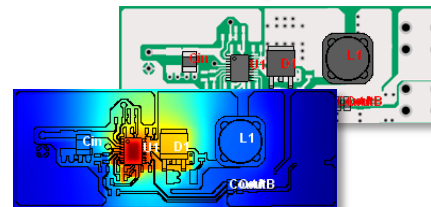
WEBENCH Create

View schematic, change BOM and view key operating values

3. Analyze a design

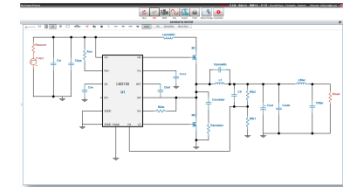


Conduct electrical analysis
WEBENCH Esim



Generate layout/
thermal analysis
WebTHERM

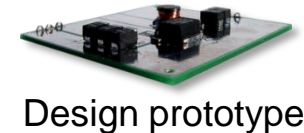
4. Edit



Change schematic/
electrical analysis
WEBENCH Editor

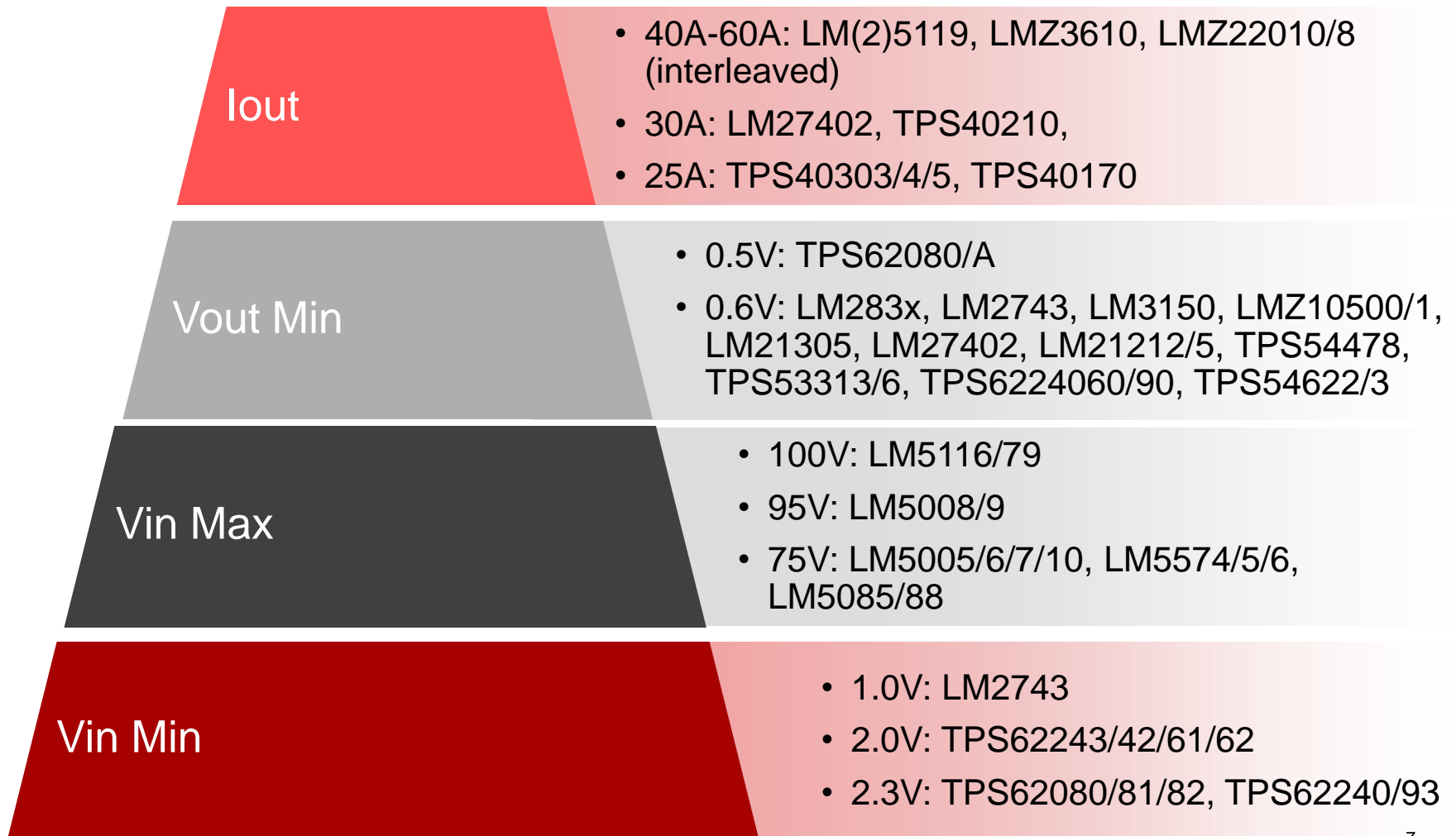
5. BuildIt!

WEBENCH Export



Design prototype

Coverage of WEBENCH[®] enabled parts (Buck DC to DC Switchers)



WEBENCH® Supports Broad Portfolio

14 Years of Modeling and Verification

Circuit Calc & Sim model

- LM10500
- LM2012x/3x/4x/54
- LM20242
- LM20323/33/43
- LM21212/5
- LM21305
- LM(2)5005/07/10/11
- LM(2)5085/88
- LM(2)5085/88
- LM(2)5116
- LM(2)5117
- LM26001/3
- LM2696
- LM2734/35/36
- LM27341/2
- LM27341/2
- LM2734/5/6
- LM27402
- LM2743
- LM2830/31/32
- LM2841/42
- LM2852/53/54
- LM3100/02/03
- LM3478/88/81
- LM34910/17/19/23/30
- LM3670/71/73/74
- LM5001/02/6/8/9
- LM5022
- LMR10510/15/20
- LMR12010
- LMR14203/6
- LMR24210/20
- LMR62421
- LMZ22008/10
- TPS2420
- TPS40170
- TPS54020/40/60(A)
- TPS54140/60
- TPS54240/60
- TPS54340/60
- TPS54418
- TPS62160/1/2/3/70/1/2/3

Circuit Calc but no Sim model

- LM(2)5118/9
- LM2622
- LM3224
- LM2700
- LM2698
- LM2731
- LM3668
- LMR62010/4
- TPS40210
- TPS40303/4/5
- TPS51225
- TPS51315
- TPS53313/6
- TPS5401
- TPS54060/61/62
- TPS5410/20/30/50
- TPS54218
- TPS54231/2/3
- TPS54310-8
- TPS54320/5/6
- TPS54331/2
- TPS54478
- TPS54610-8
- TPS61170/5
- TPS62080/1/2
- TPS62125
- TPS62130/1/2/3
- TPS62140/1/2/3
- TPS62150/1/2/3
- TPS62200-8
- TPS62240/2/3
- TPS622601/2/3
- TPS62290/1/3
- TPS842/4/610

WebTHERM /Build It

- LM22671-9, LM22680
- LM(2)5574/5/6
- LM2585/6/7/8
- LM2595/6/8/9
- LM2670-9
- LM3150/1/2/3
- LM3402/4(HV)
- LMZ10503/4/5
- LMZ12001/2/3/8/10
- LMZ13608/10
- LMZ14201/2/3
- LMZ22003/5/8/10
- LMZ23603/5

Switchers/Controllers/LED Drivers:
822 part numbers
LDOs: 239 part numbers

Supported Topologies: Buck (over 60% of total designs), Boost, Flyback, SEPIC, Inverting Buck/Boost, LDO, HotSwap, Modules, Flyback

Visit and Start a WEBENCH

Just visit to TI.com : <http://www.ti.com>

The screenshot shows the TI.com website with the WEBENCH Designer tool highlighted. The tool interface includes a navigation menu with categories like Filters, Sensors, Interface, and Reference. The Power category is selected, showing input fields for Vin (14.0 V), Vout (3.3 V), and Ambient Temp (30 °C). There are also buttons for 'Power Architect' and 'Start Design'.

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- Die/Wafer Solutions
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- Interface
- Isolation
- Logic
- Motor Drivers
- Power Management
- Embedded Processors
 - Sitara™ Processors
 - Digital Signal Processors (DSP)
 - Microcontrollers (MCU)
- Sensor Products
- Space Products
- Storage Products
- Switches & Multiplexers
- Wireless Connectivity

Calculators & Education Technology

New products >

Competitor cross reference search >

Parametric selection tool

Find the right part fast!

WEBENCH® Designer *My Designs*

Filters	Sensors	Interface	Reference
Power	FPGA/μP	LED	Clocks

Enter your power supply requirements:

DC AC

Min Max

Vin 14.0 V 22.0 V

Vout 3.3 V Iout 2.0 A

Ambient Temp 30 °C

Multiple Loads Single Output

Power Architect **Start Design**

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TI is a global semiconductor design and manufacturing company. Innovate with 100,000+ analog ICs and embedded processors, along with software, tools and the industry's

ecia MEMBER

WEBENCH® Power Designer



End-to-end design solutions
Online selection, simulation and prototyping
Dynamic design optimization based on size, cost and efficiency
Edit and simulate schematic, export to CAD tools



WEBENCH Visualizer

View dozens of designs at a time to get the best solution for a single power supply
Each design optimized for efficiency, cost and size



WEBENCH Power Architect

System level designs for complex multiple load applications
Provides different rail architectures
Each system optimized for efficiency, cost and size



WEBENCH Design Tools save you time

Thank You!

Try WEBENCH® Tools yourself:

<http://ti.com/webench-kr>

WEBENCH[®] Tool Industry Awards



- **2014 Best in Test & Design Award DesignCon 2015**
 - WEBENCH PCB Export
- 2013 *Design News Golden Mousetrap Award*
 - WEBENCH Schematic Export
- 2012 *Design News Golden Mousetrap Award*
 - WEBENCH System Power Architect
- 2011 EDN “Innovation of the Year”
 - WEBENCH FPGA Power Architect
- 2010 *Electronic Design “Year’s Best - Power”*
 - WEBENCH LED Architect
- 2010 EDN “Innovation of the Year”
 - WEBENCH Visualizer
- 2009 EDN “Innovation of the Year”
 - WEBENCH Power/LED Designer
- 2008 *Electronic Products “Product of the Year”*
 - WEBENCH Sensor Designer
- 2006 IEC “DesignVision” Award
 - WEBENCH Designer
- 2005 EDN “Innovation of the Year”
 - WEBENCH Active Filter Designer
- 2001 EDN “Innovation of the Year”
 - WEBENCH 3.0
- 2000 *Electronic Products “Product of the Year”*
 - WEBENCH 1.0

