
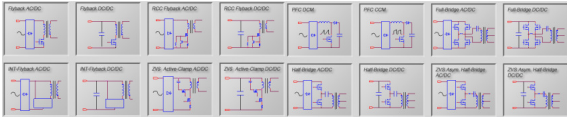
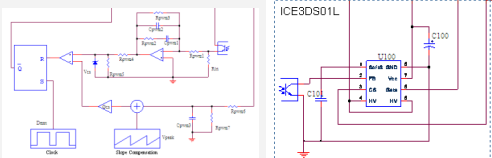
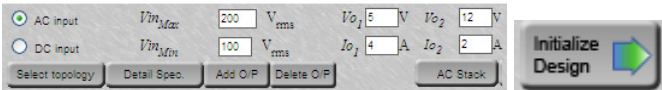
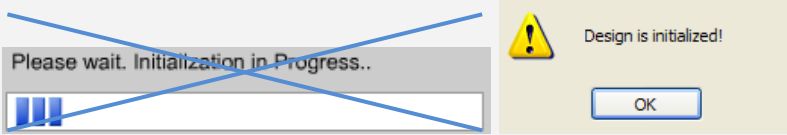
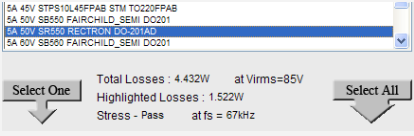
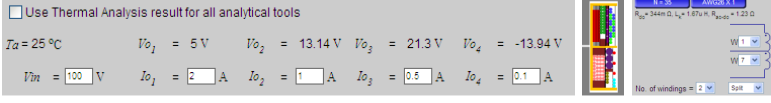

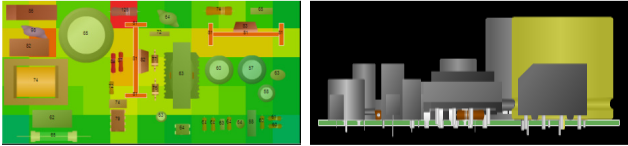





Design Steps	Getting Start with powerEsim	Details																								
<p>Goto powerEsim.com</p>		<ol style="list-style-type: none"> 1) 10 Fully integrated analysis tools 2) Free and require no login. 3) Use free Sponsor Account to get advanced features. 																								
<p>Choose Topology</p>		<p>More than 30 topologies for any power, voltage, and current available to be chosen.</p>																								
<p>Then Choose PWM Block</p>		<p>Different manufacturer PWM controller circuit is provided. Generic PWM controller also provided for greatest feasibility.</p>																								
<p>Just Press Initialize Design</p>		<p>Only Input voltage, output voltage and current will be asked</p>																								
<p>Wait 0 Sec.</p>		<p><0.01s for a full switching simulation with absolute convergence</p>																								
<p>Click Loss Analysis – Loss</p>	<table border="1" data-bbox="300 1149 1090 1283"> <tr> <td>BD1</td> <td>2 A 800 V RS206M RECTRON RS-2M</td> <td>505.8m W</td> </tr> <tr> <td>M1</td> <td>385m Ω 600 V 9 A IPP60R385CP INFINEON TO-220</td> <td>457.2m W</td> </tr> <tr> <td></td> <td>Conduction Losses</td> <td>(222.7m W)</td> </tr> <tr> <td></td> <td>Switching Losses</td> <td>(234.5m W)</td> </tr> </table>	BD1	2 A 800 V RS206M RECTRON RS-2M	505.8m W	M1	385m Ω 600 V 9 A IPP60R385CP INFINEON TO-220	457.2m W		Conduction Losses	(222.7m W)		Switching Losses	(234.5m W)	<p>Click the blue component button to enter computer selection UI for choosing other component.</p>												
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	Switching Losses	(234.5m W)																								
<p>Start Optimize losses</p>		<p>By using ↑↓ key to select best component by it's own losses and stress shown.</p>																								
<p>Trim cross regulation – Magnetic Builder</p>		<p>Build real transformer by real core, wire and tape for losses and regulation</p>																								
<p>Save & Load Your Design</p>		<p>Save this temporary design in user's own computer</p>																								
<p>Run Thermal Simulation Thermal</p>		<p>Pick and place the well thermal modeled parts onto the PCB and click, thermal result will be know within 5s.</p>																								
<p>Check DVT Report DVT Report</p>	<table border="1" data-bbox="300 1821 1074 1910"> <tr> <td>Cap</td> <td>150uF 400V DC 105°C 2000hrs 25x36mm HS CAPXON 20%</td> <td>Vpk</td> <td>116.9V</td> <td>400V</td> <td>950m</td> <td>Pass</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Irms</td> <td>1.406A</td> <td>980mA</td> <td>800m</td> <td>Warning</td> <td>You may need to select a capacitor having higher ripple current rating.</td> </tr> <tr> <td></td> <td></td> <td>Tj</td> <td>60°C</td> <td>105°C</td> <td>1</td> <td>Pass</td> <td></td> </tr> </table>	Cap	150uF 400V DC 105°C 2000hrs 25x36mm HS CAPXON 20%	Vpk	116.9V	400V	950m	Pass				Irms	1.406A	980mA	800m	Warning	You may need to select a capacitor having higher ripple current rating.			Tj	60°C	105°C	1	Pass		<p>Check any reject, warning on any parts to make sure no over stress.</p>
Cap	150uF 400V DC 105°C 2000hrs 25x36mm HS CAPXON 20%	Vpk	116.9V	400V	950m	Pass																				
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<p>MTBF or Life Life & MTBF</p>	<table border="1" data-bbox="300 1933 954 2011"> <tr> <td>Simulated Overall Failure Rate</td> <td>= 3.801 failures/10⁶ hours</td> </tr> <tr> <td>Simulated Overall MTBF</td> <td>= 263.1k hours</td> </tr> <tr> <td>Simulated Overall Life Time</td> <td>= 32k hours</td> </tr> </table>	Simulated Overall Failure Rate	= 3.801 failures/10 ⁶ hours	Simulated Overall MTBF	= 263.1k hours	Simulated Overall Life Time	= 32k hours	<p>Ensure the quality by MTBF and Life of the power supply.</p>																		
Simulated Overall Failure Rate	= 3.801 failures/10 ⁶ hours																									
Simulated Overall MTBF	= 263.1k hours																									
Simulated Overall Life Time	= 32k hours																									
<p>Finally Stabilize the loop Loop & Stability</p>		<p>Trim the loop stability by changing circuit value or simple press "Automatic Compensation"</p>																								



Features **Advanced features of powerEsim** **Details**

Project Management

Project Management 1) PFC DCM(10.57 W) 2) Flyback DC-DC(10.72 W)

User can build complex power supply by using a group of single power supply.

Add Parts

Add Parts

Use Thermal Analysis result for all analytical tools
 $T_a = 25\text{ }^\circ\text{C}$

Component Type

Create new components

Component Type	Ref	Add
- Select Component Type -		Add

User can add extra parts in their BOM for thermal, MTBF or DVT analysis.

Component Data Base

Manufacturer: any

VISHAY	FERROXCUBE	SAMWHA
EVOX_RIFA	NICERA	JAMICON
VISHAY_ROEDERSTEIN	SAMWHA	UNICON
MURATA	MICROMETALS	SANYO
NICHICON	PowerESim	CAPXON
NCC	GROUPARNOLD	AVX
RUBYCON	MAGNETICS	PowerESim
WIMA	TOKIN	VISHAY_SPRAGUE
EPCOS	ACME	ARCOTRONICS
SAMWHA	TDK	KEMET

More than 130,000 Components are electrically and thermally modeled.

Build Custom Component
Component Builder

Component Modelling

Magnetic Material

Core

Rectifier

MOSFET

Capacitor

Wire

Thermistor

Resistor

Fuse

Zener

OptoCoupler

Transistor

Shunt Regulator

User can build their own component database by using our non-linear modeling module.

Series or Parallel Components

Series or Parallel Components

1 in parallel

1 in series

Component can be connected in series or in parallel.

Loss optimization

Smart Optimizer

Number of iterations permitted: 400

Total number of combinations: 86

Number of iterations: 50

Smart Optimizer will perform GA optimization for losses against a data pool of different component chosen.

Export Report

Export to Excel Format

Export Excel format for documentation.

Transformer Drawing

Transformer drawing is automatically generated to save engineer resource. Customize drawing is also possible.

Input Harmonic Current
Harmonic

Class A Class B Class C **Class D**

Simulated Harmonic

Check Input Harmonic Current Content comply with international standard

Accuracy

60W TEV demo board using ICE2D05(UC)

Proven bench accuracy by experiment and engineer from power supply manufacturer.