

## Anex

Seasonic SSR-850GD

Lab ID#: 73  
Receipt Date: -  
Test Date: -

Report: 20PS73A

Report Date: Jan 4, 2000

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	Seasonic	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	Sea Sonic Electronics Co., Ltd.	Rated Current (Arms)	11-5.5
Series	Prime Gold	Rated Frequency (Hz)	50-60
Model Number	SSR-850GD	Rated Power (W)	850
Serial Number	R1701TA101480009	Type	ATX12V
DUT Notes		Cooling	135mm Fluid Dynamic Bearing Fan (HA13525M12F-Z)
		Semi-Passive Operation	✓ (selectable)
		Cable Design	Fully Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70	2.5	0.3
	Watts	100		850	12.5	3.6
Total Max. Power (W)		850				

CABLES AND CONNECTORS			
Modular Cables			
Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (610mm)	1	1	18-22AWG
4+4 pin EPS12V (650mm)	2	2	18AWG
6+2 pin PCIe (680mm+80mm)	3	6	18AWG
SATA (460mm+120mm+120mm+120mm)	2	8	18AWG
SATA (360mm+120mm)	1	2	18AWG
4 pin Molex (460mm+130mm+130mm)	1	3	18AWG
4 pin Molex (360mm+130mm)	1	2	18AWG
FDD Adapter (+110mm)	1	1	22AWG

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PAGE 1/8

## Anex

Seasonic SSR-850GD

RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	89.650
Efficiency With 10W ( $\leq 500W$ ) or 2% ( $> 500W$ ) Load -115V	0.000
Average Efficiency 5VSB	79.322
Standby Power Consumption (W) -115V	0.0576594
Standby Power Consumption (W) -230V	0.0921196
Average PF	0.989
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	43.25
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard

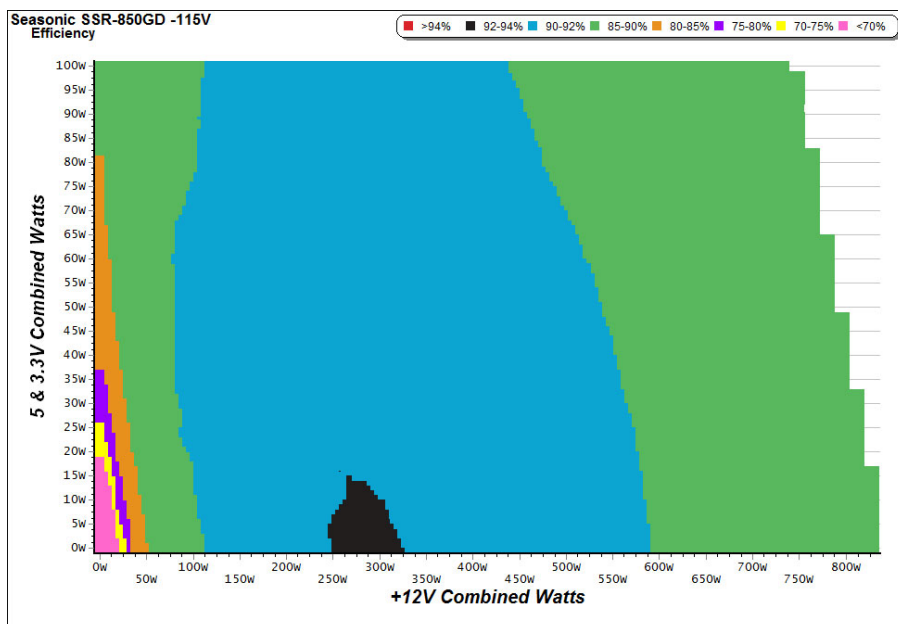
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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PAGE 2/8

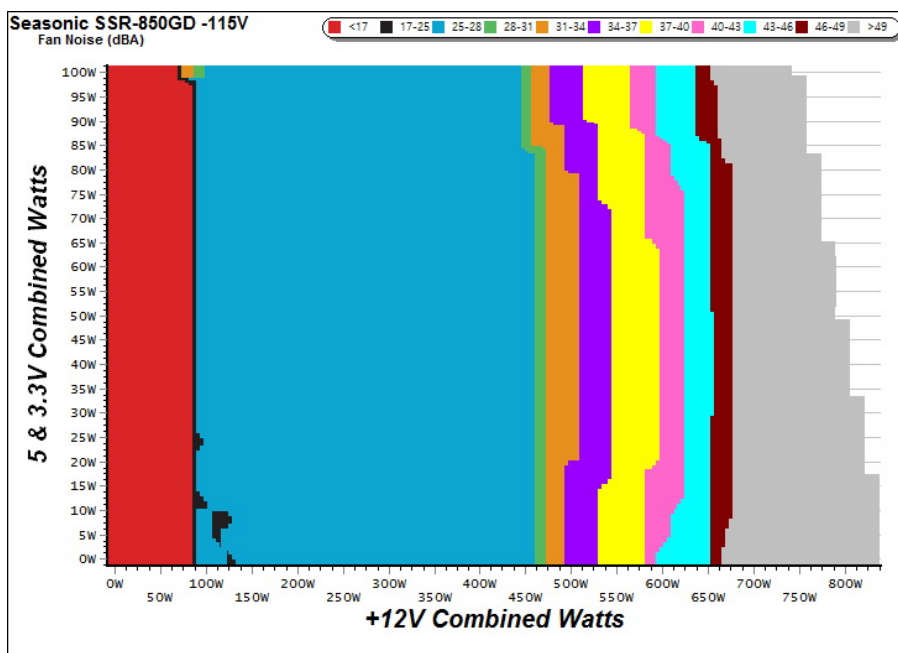
### EFFICIENCY GRAPH



#### INFO

This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

### NOISE GRAPH



#### INFO

The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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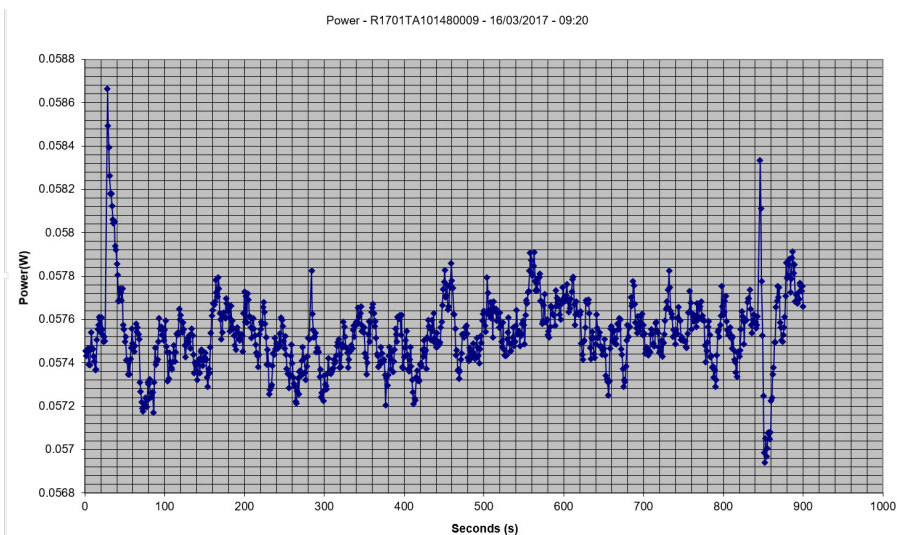
Anex

Seasonic SSR-850GD

5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)				
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.041A	0.212	64.634%	0.036
	5.111V	0.328		115.08V
2	0.087A	0.444	71.729%	0.067
	5.109V	0.619		115.08V
3	0.532A	2.705	79.653%	0.278
	5.088V	3.396		115.09V
4	2.501A	12.496	78.919%	0.481
	4.996V	15.834		115.08V

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)				
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.041A	0.212	57.609%	0.012
	5.111V	0.368		230.19V
2	0.087A	0.444	66.867%	0.022
	5.109V	0.664		230.19V
3	0.532A	2.704	76.906%	0.109
	5.086V	3.516		230.20V
4	2.502A	12.469	78.624%	0.322
	4.984V	15.859		230.18V

## VAMPIRE POWER -115V



### INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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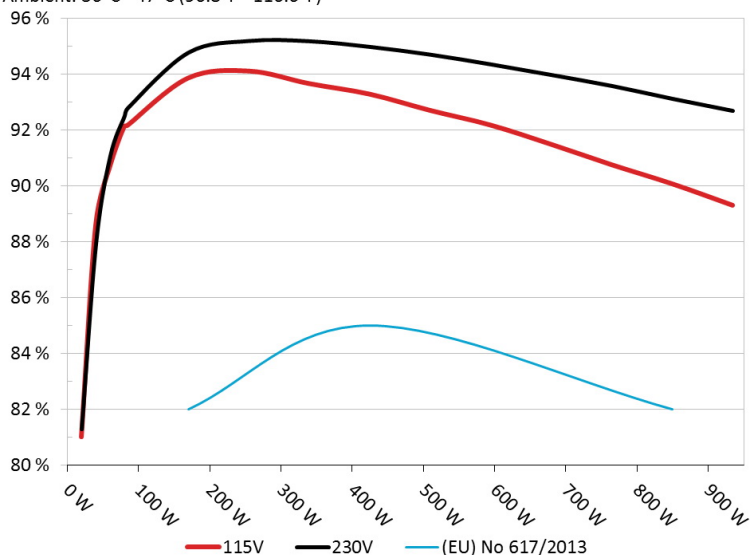
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PAGE 4/8

### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

#### Efficiency: Seasonic SSR-850GD

Ambient: 36°C - 47°C (96.8°F - 116.6°F)



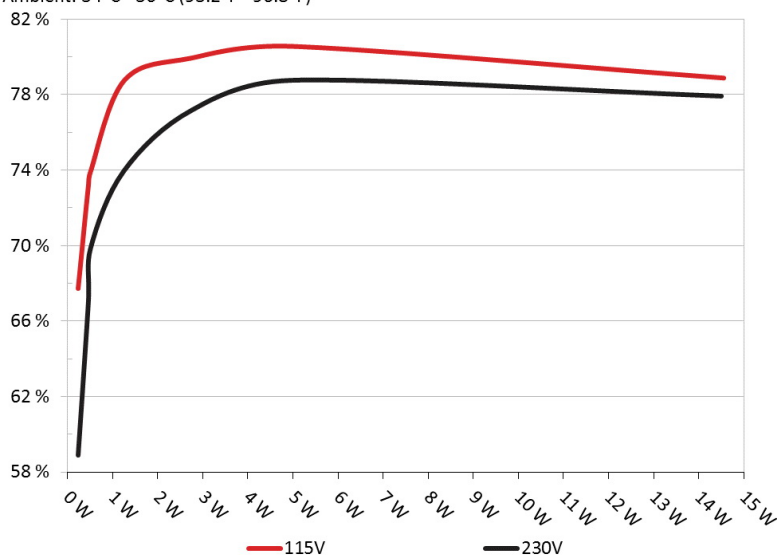
#### INFO

The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

### 5VSB EFFICIENCY

#### 5VSB Efficiency: Seasonic SSR-850GD

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



#### INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

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## Anex

## Seasonic SSR-850GD

### 10-110% LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	Fan Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	5.169A	1.985A	1.983A	0.986A	84.798	87.211%	750	25.1	38.21°C	0.968
	12.235V	5.040V	3.324V	5.054V	97.233				41.84°C	115.12V
2	11.352A	2.970A	2.976A	1.190A	169.643	90.569%	750	25.1	38.81°C	0.990
	12.227V	5.040V	3.323V	5.035V	187.309				43.44°C	115.11V
3	17.907A	3.477A	3.489A	1.395A	254.921	91.390%	785	27.4	39.72°C	0.985
	12.219V	5.039V	3.321V	5.016V	278.938				45.03°C	115.10V
4	24.452A	3.970A	3.974A	1.601A	339.720	91.269%	1111	39.0	40.05°C	0.988
	12.210V	5.038V	3.319V	4.996V	372.218				45.53°C	115.10V
5	30.667A	4.968A	4.972A	1.805A	424.656	90.702%	1584	44.3	41.01°C	0.991
	12.202V	5.037V	3.317V	4.978V	468.186				46.10°C	115.10V
6	36.897A	5.954A	5.971A	2.015A	509.621	90.008%	1842	49.8	41.41°C	0.993
	12.192V	5.037V	3.315V	4.960V	566.196				46.73°C	115.10V
7	43.133A	6.950A	6.972A	2.225A	594.584	89.209%	2061	52.4	42.11°C	0.995
	12.184V	5.036V	3.313V	4.939V	666.505				47.84°C	115.10V
8	49.375A	7.943A	7.974A	2.437A	679.539	88.503%	2061	52.4	43.06°C	0.996
	12.174V	5.036V	3.310V	4.920V	767.816				49.59°C	115.10V
9	56.052A	8.445A	8.489A	2.441A	764.528	87.641%	2061	52.4	44.27°C	0.996
	12.166V	5.036V	3.310V	4.910V	872.345				51.87°C	115.11V
10	62.683A	8.941A	8.979A	2.551A	849.283	86.672%	2061	52.4	45.99°C	0.995
	12.157V	5.036V	3.307V	4.892V	979.886				55.03°C	115.10V
11	69.725A	8.940A	8.984A	2.555A	934.095	85.576%	2061	52.4	46.53°C	0.993
	12.147V	5.035V	3.305V	4.885V	1091.540				56.84°C	115.08V
CL1	0.098A	12.012A	12.005A	0.004A	101.816	83.508%	2061	52.4	43.43°C	0.983
	12.248V	5.057V	3.317V	5.084V	121.923				48.43°C	115.14V
CL2	69.948A	1.003A	1.003A	1.002A	862.778	87.012%	2061	52.4	44.20°C	0.996
	12.142V	5.026V	3.315V	4.985V	991.563				52.59°C	115.11V

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PAGE 6/8

### 20-80W LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	Fan Noise (dB[A])	PF/AC Volts
1	1.193A	0.493A	0.480A	0.195A	19.672	69.878%	750	25.1	0.833
	12.240V	5.043V	3.331V	5.097V	28.152				115.12V
2	2.411A	0.991A	0.989A	0.391A	39.762	80.778%	750	25.1	0.924
	12.238V	5.041V	3.329V	5.086V	49.224				115.12V
3	3.628A	1.477A	1.500A	0.590A	59.803	84.782%	750	25.1	0.956
	12.236V	5.040V	3.327V	5.074V	70.537				115.12V
4	4.841A	1.985A	1.983A	0.787A	79.793	86.887%	750	25.1	0.965
	12.235V	5.041V	3.325V	5.064V	91.835				115.12V

### RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.6 mV	6.3 mV	7.0 mV	7.3 mV	Pass
20% Load	12.9 mV	5.4 mV	9.6 mV	8.2 mV	Pass
30% Load	15.7 mV	6.6 mV	12.4 mV	9.7 mV	Pass
40% Load	17.8 mV	7.9 mV	14.1 mV	10.7 mV	Pass
50% Load	15.1 mV	8.0 mV	14.6 mV	11.6 mV	Pass
60% Load	12.4 mV	7.6 mV	14.5 mV	13.5 mV	Pass
70% Load	13.8 mV	7.8 mV	14.5 mV	15.6 mV	Pass
80% Load	14.6 mV	7.8 mV	14.0 mV	16.8 mV	Pass
90% Load	18.2 mV	8.1 mV	14.1 mV	18.6 mV	Pass
100% Load	22.9 mV	8.4 mV	15.3 mV	19.4 mV	Pass
110% Load	26.7 mV	9.3 mV	19.2 mV	21.2 mV	Pass
Crossload 1	9.2 mV	5.9 mV	8.9 mV	7.3 mV	Pass
Crossload 2	22.5 mV	8.5 mV	13.5 mV	18.1 mV	Pass

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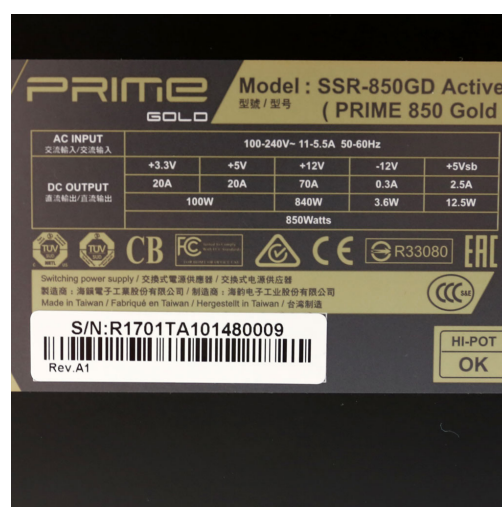
Seasonic SSR-850GD

## HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	24.44
AC Loss to PWR_OK Hold Up Time (ms)	20.0
PWR_OK Inactive to DC Loss Delay (ms)	4.44



Top side



Power specifications label

## CERTIFICATIONS



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PAGE 8/8