

Innovation in power conversion

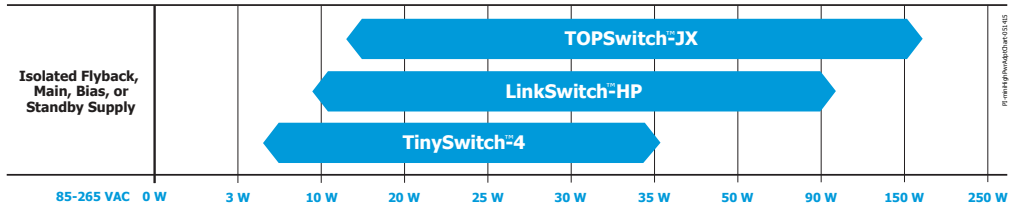
A background circuit diagram featuring a resistor, a capacitor, a diode, and a transformer symbol connected to a horizontal line with several nodes. The diagram is rendered in a light gray color.

Product Selector Guide Adapter Products

January 2016



Product Selector Guide



IC Product Tables and Design Examples

LinkSwitch-HP – High Power AC-DC Power Conversion

Product ⁴	Heat Sink	230 VAC ±15%		85-265 VAC	
		Adapter (W)	Open Frame (W)	Adapter (W)	Open Frame (W)
LNK6xx3K/V	PCB-W ¹	15	25	9	15
LNK6xx3K	PCB-R ²	21	35	12	21
LNK6xx3E	Metal	21	35	13	27
LNK6xx4K/V	PCB-W ¹	16	28	11	20
LNK6xx4K	PCB-R ²	22	39	15	28
LNK6xx4E	Metal	30	47	20	36
LNK6xx5K/V	PCB-W ¹	19	30	13	22
LNK6xx5K	PCB-R ²	26	42	18	31
LNK6xx5E	Metal	40	59 ³	26	45
LNK6xx6K/V	PCB-W ¹	21	34	15	26
LNK6xx6K	PCB-R ²	30	48	22	37
LNK6xx6E	Metal	60	88 ³	40	68 ³
LNK6xx7K/V	PCB-W ¹	25	41	19	30
LNK6xx7K	PCB-R ²	36	59	27	43
LNK6xx7E	Metal	85 ³	117 ³	55	90 ³
LNK6xx8K/V	PCB-W ¹	29	47	21	34
LNK6xx8K	PCB-R ²	41	68	30	48
LNK6xx8E	Metal	98 ³	135 ³	63 ³	104 ³
LNK6xx9K/V	PCB-W ¹	33	54	25	39
LNK6xx9K	PCB-R ²	47	77	36	56
LNK6xx9E	Metal	111 ³ W	153 ³ W	72 ³	118 ³

Additional Features:

- Dramatically simplifies power supply designs
 - Eliminates optocoupler and all secondary control circuitry
 - ±5% or better output voltage tolerance
- 132 kHz operation reduces transformer and power supply size
- Accurate programmable current limit
 - Compensation over line limits overload power
- Frequency jittering reduces EMI filter cost
- Fully integrated soft-start for minimum start-up stress
- 725 V MOSFET simplifies meeting derating requirements (LNK677x)
- 650 V MOSFET for lowest system cost (LNK676x/LNK666x)
- Fast transient response family option (LNK666x)
- Auto-restart limits power delivery to 3% during overload faults
 - Output short-circuit protection (SCP)
 - Output overload/over-current protection (OPP, OCP)
 - Optional extended shutdown delay time
- Output overvoltage protection (OVP), hysteretic or latching
- Line brown-in/out protection (line UV)
- Line overvoltage (OV) shutdown extends line surge withstand
- Accurate thermal shutdown (OTP), hysteretic or latching

Notes:

1. PCB heat sink with wave soldering.
2. PCB heat sink with IR reflow soldering (exposed pad thermally connected to PCB).
3. Maximum power specified based on proper thermal dissipation.
4. Packages: E: eSiP-7C, K: eSOP-12B, V: eDIP-12B.

TinySwitch-4 – Low Power AC-DC Power Conversion

Product ³	Adapter ¹ (W)	Peak or Open Frame ² (W)	Adapter ¹ (W)	Peak or Open Frame ² (W)
	230 VAC ± 15%		85-265 VAC	
TNY284P/D/K	6	11	5	8.5
TNY285P/D	8.5	15	6	11.5
TNY285K	11	15	7.5	11.5
TNY286P/D	10	19	7	15
TNY286K	13.5	19	9.5	15
TNY287P	13	23.5	8	18
TNY287D	11.5	23.5	7	18
TNY287K	18	23.5	11	18
TNY288P	16	28	10	21.5
TNY288D	14.5	26	9	19.5
TNY288K	23	28	14.5	21.5
TNY289P	18	32	12	25
TNY289K	25	32	17	25
TNY290P	20	36.5	14	28.5
TNY290K	28	36.5	20	28.5

Additional Features:

- 725 V internal MOSFET rating
- Self-powered
- Hysteretic thermal shutdown protection
- Frequency jitter reduces EMI
- EcoSmart low standby/no-load power consumption
 - On-time extension
 - Latching output overvoltage protection
 - Line undervoltage lockout
 - Selectable current limit

Notes:

1. Minimum continuous power in a typical non-ventilated enclosed adapter measured at +50 °C ambient. Use of an external heat sink will increase power capability.
2. Minimum peak power capability in any design or minimum continuous power in an open frame design.
3. Packages: P: DIP-8C, D: SO-8C, K: eSOP-12B.

TOPSwitch-JX – High Efficiency AC-DC Power Conversion

Product ⁵	PCB Copper Area ¹			
	Adapter ² (W)	Open Frame ³ (W)	Adapter ² (W)	Open Frame ³ (W)
	230 VAC ± 15% ⁴		85-265 VAC	
TOP264V	21	34	12	22.5
TOP264K	30	49	16	30
TOP265V	22.5	36	15	25
TOP265K	33	53	20	34
TOP266V	24	39	17	28.5
TOP266K	36	58	23	39
TOP267V	27.5	44	19	32
TOP267K	40	65	26	45
TOP268V	30	48	21.5	36
TOP268K	46	73	30	50
TOP269V	32	51	22.5	37.5
TOP269K	50	81	33	55
TOP270V	34	55	24.5	41
TOP270K	56	91	36	60
TOP271V	36	59	26	43
TOP271K	63	102	40	66

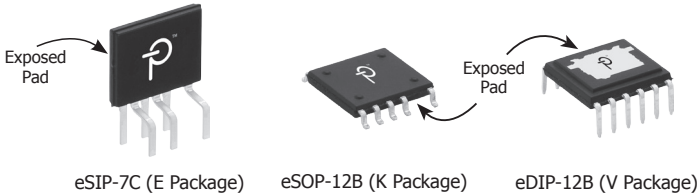
Product ⁵	Metal Heat Sink ¹			
	Adapter ² (W)	Open Frame ³ (W)	Adapter ² (W)	Open Frame ³ (W)
	230 VAC ±15% ⁴		85-265 VAC	
TOP264E/V	30	62	20	43
TOP265E/V	40	81	26	57
TOP266E/V	60	119	40	86
TOP267E/V	85	137	55	103
TOP268E/V	105	148	70	112
TOP269E/V	128	162	80	120
TOP270E/V	147	190	93	140
TOP271E/V	177	244	118	177

Additional Features:

- Multi-mode operation maximizes efficiency at all loads
- Output overvoltage protection is user programmable for latching/non-latching shutdown with fast AC reset
 - Allows both primary and secondary sensing
- Line undervoltage detection prevents turn-off glitches
- Line overvoltage shutdown extends line surge limit
- Accurate programmable current limit
- Optimized line feed-forward for line ripple rejection
- 132 kHz frequency reduces transformer and power supply size
 - Half-frequency option for video applications
- Frequency jittering reduces EMI filter cost
- Improved auto-restart delivers <3% of maximum power in short-circuit and open loop fault conditions
- Accurate hysteretic thermal shutdown function automatically recovers
- Fully integrated soft-start for minimum start-up stress

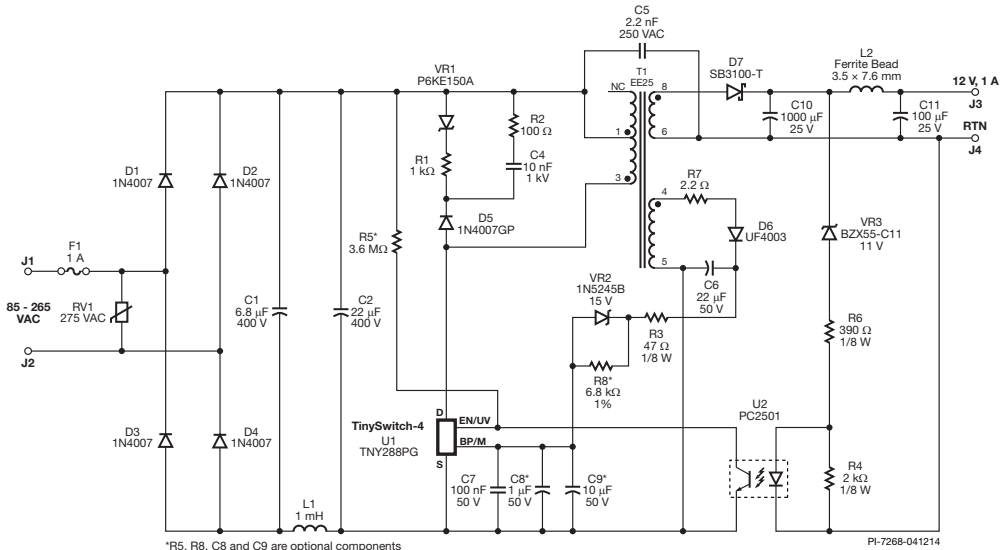
Notes:

- See Key Application Considerations section for more details.
- Minimum continuous power in a typical non-ventilated enclosed adapter measured at +50 °C ambient temperature.
- Minimum continuous power in an open frame design at +50 °C ambient temperature.
- 230 VAC or 110/115 VAC with doubler.
- Packages: E: eSIP-7C, V: eDIP-12, K: eSOP-12.



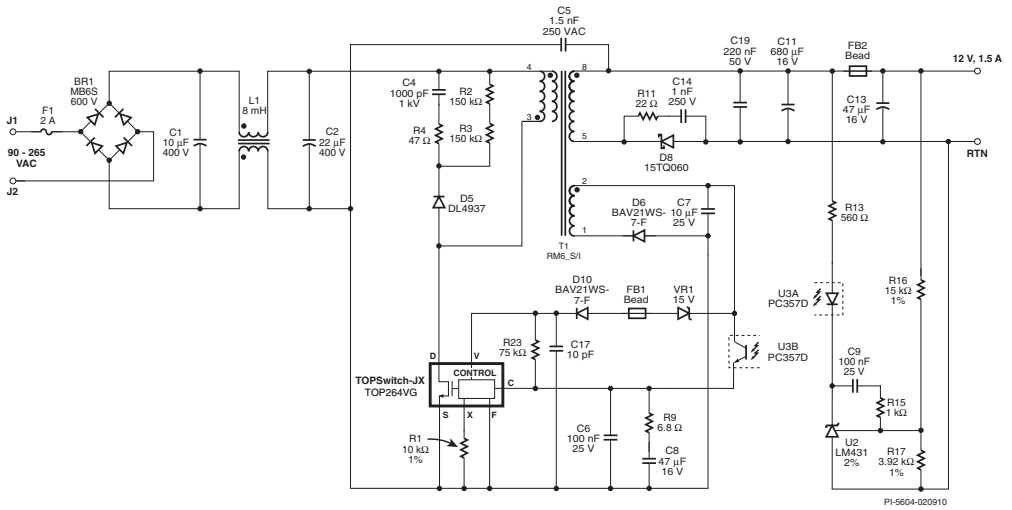
TinySwitch-4 – Reference Design Power Supply (RDK-399)

12 W, 12 V, 1 A OUTPUT, 85 – 265 VAC INPUT, ISOLATED POWER SUPPLY



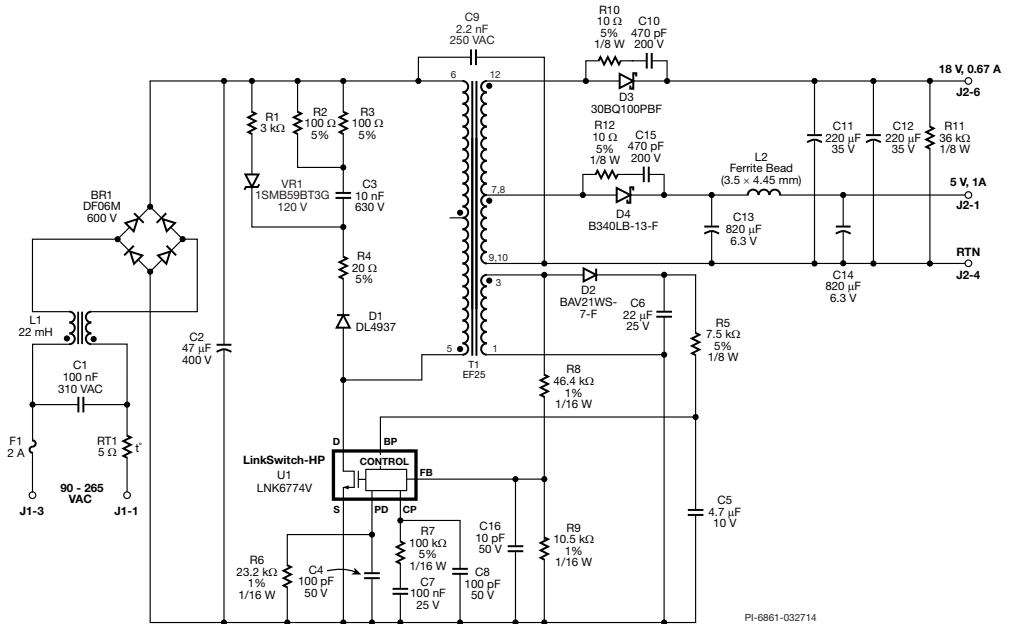
TOPSwitch-JX – Adapter Power Supply (DER-237)

18 W, 12 V, 1.5 A OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



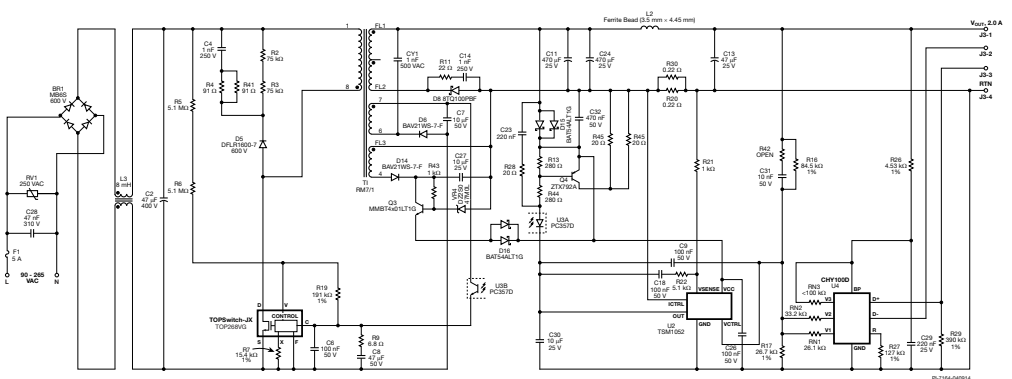
LinkSwitch-HP – LCD Monitor Power Supply (RDK-321)

17 W, 18 V, 0.67 A, and 5 V, 1 A DUAL OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



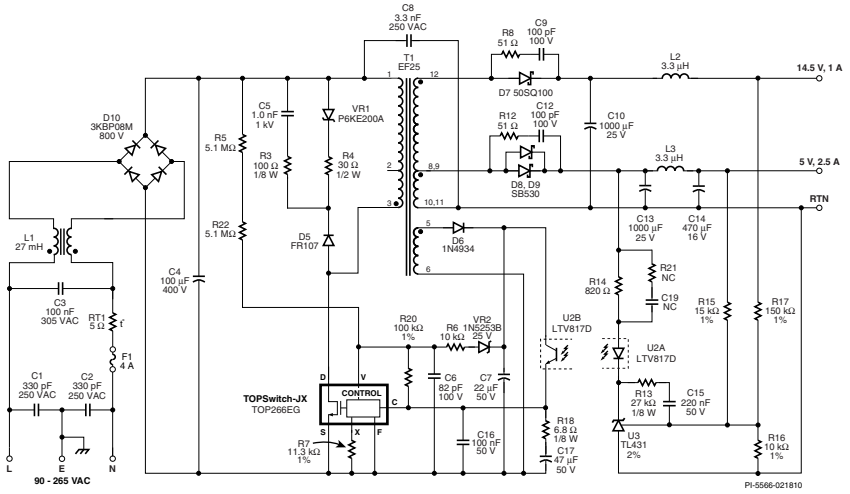
TOPSwitch-JX + ChiPhy – Quick Charge 2.0 CV/CC Adapter Power Supply (DER-381)

24 W, 12 V, 9 V, 5 V, 2.0 A OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



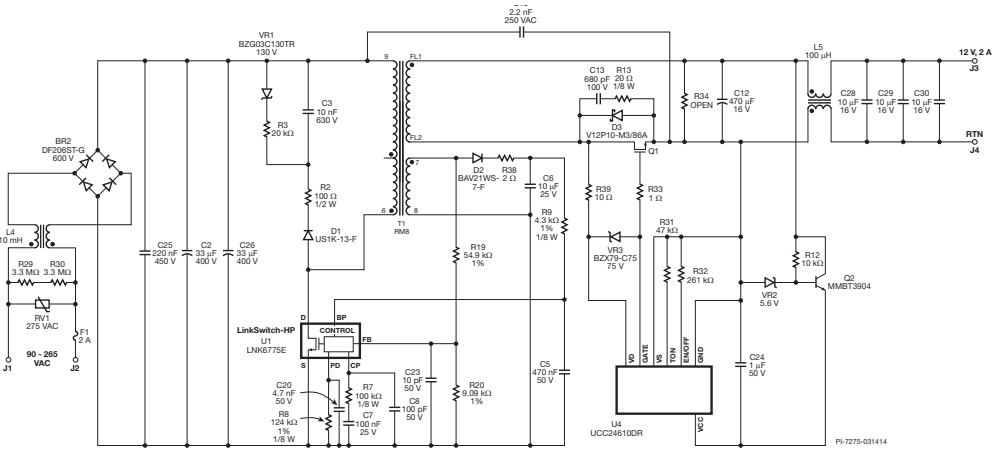
TOPSwitch-JX – LCD Monitor Power Supply (DER-235)

27 W, 14.5 V, 1 A, and 5 V, 2.5 A DUAL OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



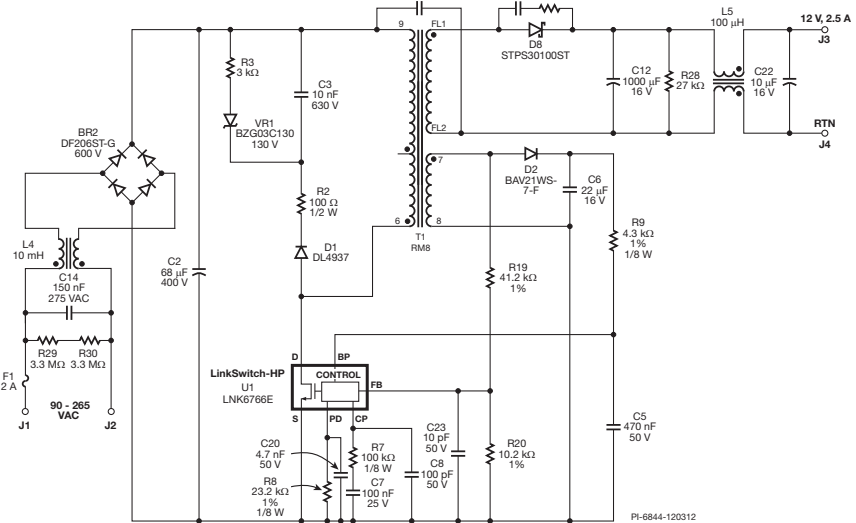
LinkSwitch-HP – Adapter Power Supply (DER-416)

27 W, 12 V, 2 A OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



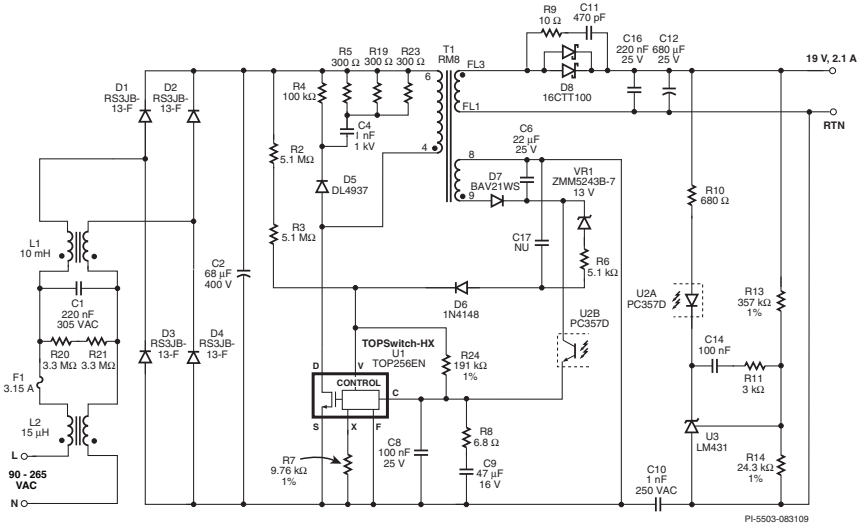
LinkSwitch-HP – Adapter Power Supply (RDK-313)

30 W, 12 V, 2.5 A OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



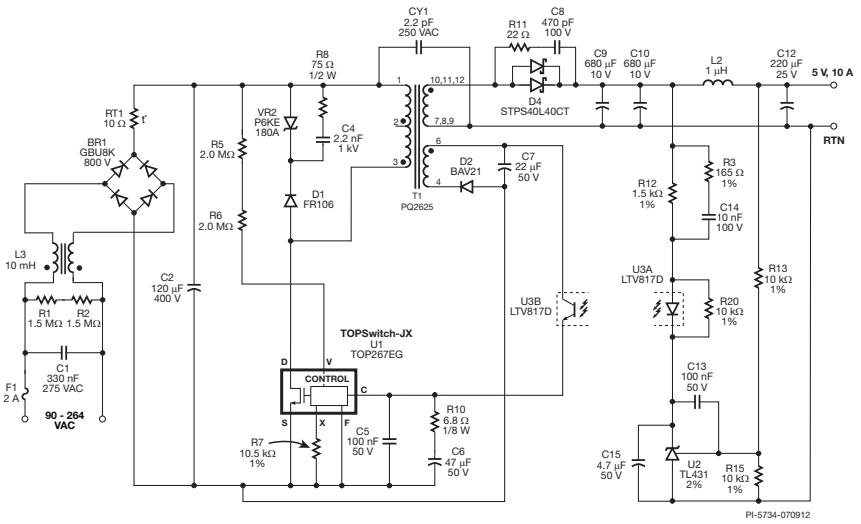
TOPSwitch-JX – Mini Notebook Adapter Power Supply (DER-230)

40 W, 19 V, 2.1 A OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



TOPSwitch-JX – Laser Printer Power Supply (DER-245)

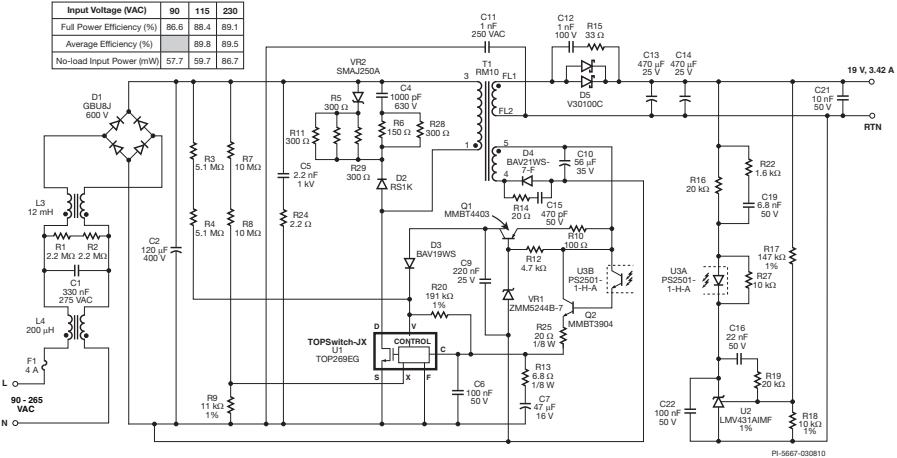
50 W, 5 V, 10 A OUTPUT, 90 – 264 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY



TOPSwitch-JX – Standard Notebook Adapter Power Supply (DER-243)

65 W, 19.7 V, 3.42 A OUTPUT, 90 – 265 VAC INPUT, ISOLATED FLYBACK POWER SUPPLY

Input Voltage (VAC)	90	115	230
Full Power Efficiency (%)	86.6	88.4	89.1
Average Efficiency (%)	89.8	89.5	
No-load Input Power (mW)	57.7	59.7	86.7



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