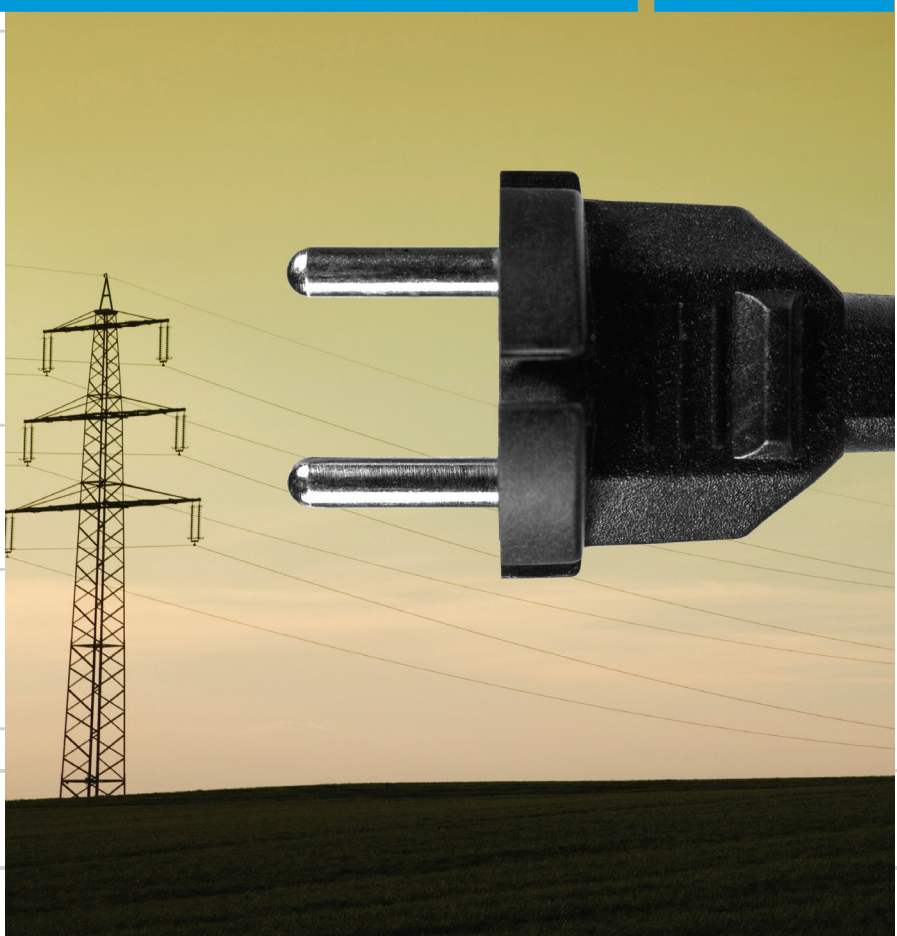
power integrations™

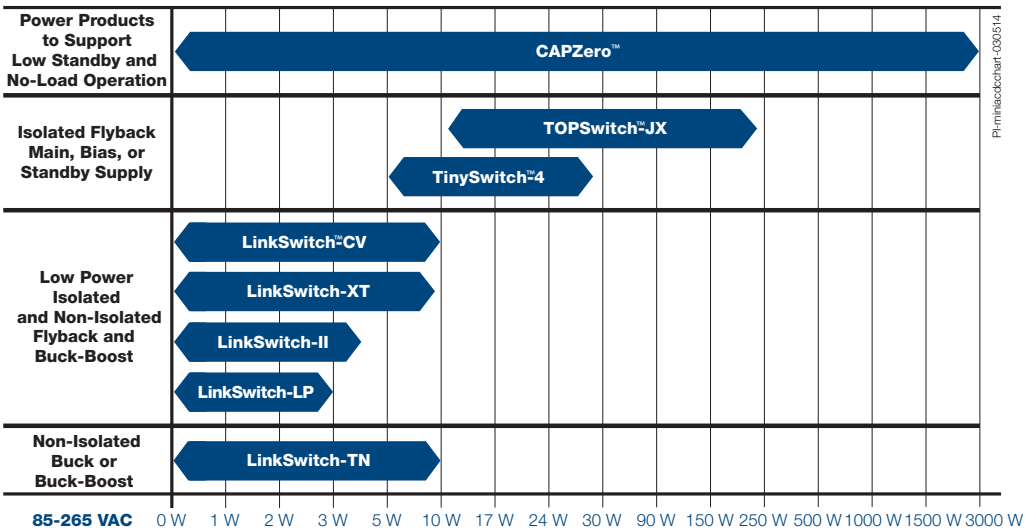
Innovation in power conversion

Product Selector Guide
AC-DC Products

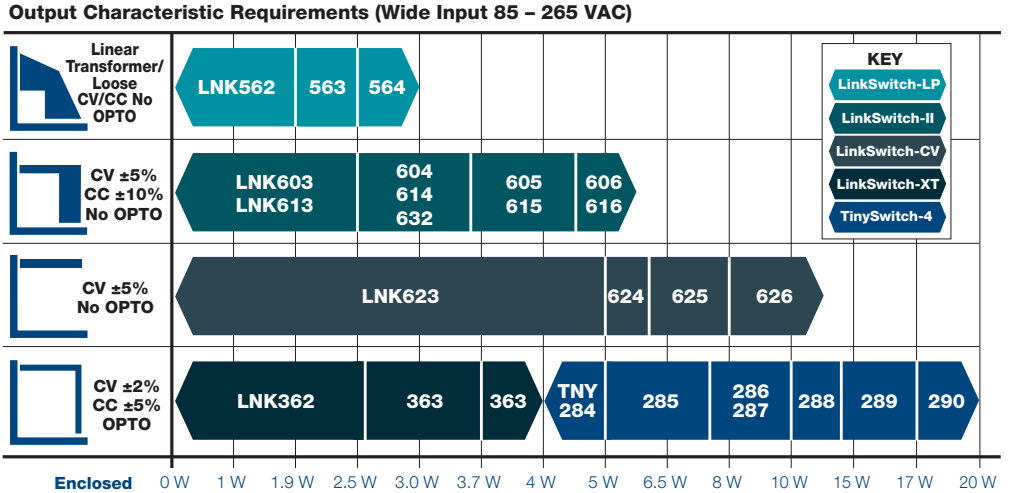
December 2015

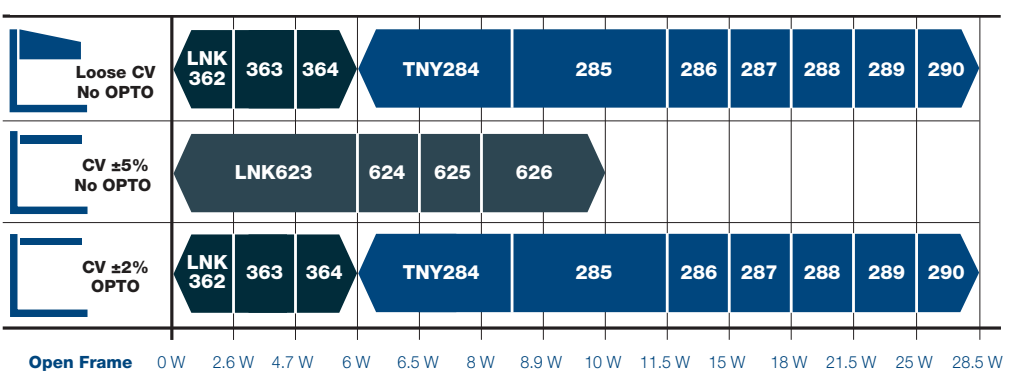


Product Selector Guide



Output Characteristic Requirements (Wide Input 85 – 265 VAC)





IC Product Tables and Design Examples

LinkSwitch -TN – Very Low Power AC-DC, Non-Isolated Linear/Passive Supply Replacement

Product[4]	Output Current[1] (mA)		Output Current[1] (mA)	
	MDCM[2]	CCM[3]	MDCM[2]	CCM[3]
	230 VAC ± 15%		85-265 VAC	
LNK302P/G/D	63	80	63	80
LNK304P/G/D	120	170	120	170
LNK305P/G/D	175	280	175	280
LNK306P/G/D	225	360	225	360

Additional Features:

- 700 V internal MOSFET rating
- Self-powered
- ON/OFF control
- Hysteretic thermal shutdown
- Power limiting
- Frequency jitter reduces EMI
- EcoSmart™ low standby/no-load power consumption

Notes:

1. *Typical output current in a non-isolated buck converter. Output power capability depends on respective output voltage.*
2. *Mostly discontinuous conduction mode.*
3. *Continuous conduction mode.*
4. *Packages: P: DIP-8B, G: SMD-8B, D: SO-8C.*

LinkSwitch -CV / II / LP / XT – Very Low Power AC-DC Power Conversion

Product[3,4]	Continuous Output Power (W)		Continuous Output Power (W)	
	Adapter[1]	Open Frame[2]	Adapter[1]	Open Frame[2]
LinkSwitch-CV	230 VAC ± 15%		85-265 VAC	
LNK623P/D	6.5	9	5.0	6
LNK624P/D	7	11	5.5	6.5
LNK625P/D	8	13.5	6.5	8
LNK626P/D	10.5	17	8.5	10
LinkSwitch-II	230 VAC ± 15%		85-265 VAC	
LNK603/613P/D	2.5	3.3	2.5	3.3
LNK604/614P/D	3.5	4.1	3.5	4.1
LNK605/615P/D	4.5	5.1	4.5	5.1
LNK606/616P/G/D	5.5	6.1	5.5	6.1
LNK632D	3.1	3.1	3.1	3.1
LinkSwitch-LP	230 VAC ± 15%		85-265 VAC	
LNK562P/G/D	1.9	1.9	1.9	1.9
LNK563P/G/D	2.5	2.5	2.5	2.5
LNK564P/G/D	3	3	3	3
LinkSwitch-XT	230 VAC ± 15%		85-265 VAC	
LNK362P/G/D	2.8	2.8	2.6	2.6
LNK363P/G/D	5	7.5	3.7	4.7
LNK364 P/G/D	5.5	9	4	6

Additional Features:

- 700 V internal MOSFET rating
- Self-powered
- ON/OFF control
- Hysteretic over-temperature protection
- Power limiting
- Frequency jitter reduces EMI
- EcoSmart low standby/no-load power consumption

Notes:

1. *Minimum continuous power in a typical non-ventilated enclosed adapter measured at 50 °C ambient.*
2. *Minimum practical continuous power in an open frame design with adequate heat sinking, measured at 50 °C ambient.*
3. *Packages: P: DIP-8B, G: SMD-8B, D: SO-8C.*
4. Packages: P: DIP-8C, G: SMD-8C, D: SO-8C.

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

Additional Features:

- Multi-mode operation maximizes efficiency at all loads
- New eDIP™-12 package
  - Low profile horizontal orientation for ultra-slim designs
  - Heat transfer to both PCB and heat sink
  - Optional external heat sink provides thermal impedance equivalent to a TO-220
- 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

TOPSwtich-JX – High Efficiency AC-DC Power Conversion

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

Notes:
1. *See Key Application Considerations section in data sheet for more details.*
2. *Minimum continuous power in a typical non-ventilated enclosed adapter measured at +50 °C ambient temperature.*
3. *Minimum continuous power in an open frame design at +50 °C ambient temperature.*
4. *230 VAC or 110/115 VAC with doubler.*
5. *Packages: E: eSIP-7C, V: eDIP-12, K: eSOP-12.*

CAPZero – Zero[1] Loss Automatic X Capacitor Discharge IC

Product[3]	BV_{DSS}	Max Total X Capacitance	Total Series Resistance[2] (R1 + R2)
CAP002D	825 V	≤ 500 nF	1.5 MΩ
CAP012D	1000 V		
CAP003D	825 V	750 nF	1.02 MΩ
CAP013D	1000 V		
CAP004D	825 V	1 µF	780 kΩ
CAP014D	1000 V		
CAP005D	825 V	1.5 µF	480 kΩ
CAP015D	1000 V		
CAP006D	825 V	2 µF	360 kΩ
CAP016D	1000 V		
CAP007D	825 V	2.5 µF	300 kΩ
CAP017D	1000 V		
CAP008D	825 V	3.5 µF	200 kΩ
CAP018D	1000 V		
CAP009D	825 V	5 µF	150 kΩ
CAP019D	1000 V		

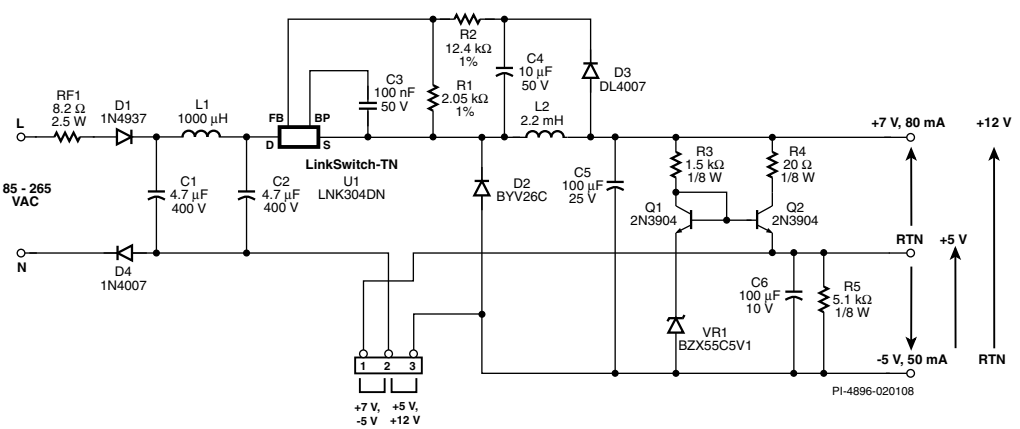
Additional Features:

- Blocks current through X capacitor discharge resistors when AC voltage is connected
- Automatically discharges X capacitors through discharge resistors when AC is disconnected
- Simplifies EMI filter design – larger X capacitor allows smaller inductive components with no change in consumption
- Only two terminals – meets safety standards for use before or after system input fuse
- >4 mm creepage on package and PCB
- Self supplied – no external bias required
- High common mode surge immunity – no external ground connection
- High differential surge withstand – 1000 V internal MOSFETs

Notes:
1. *IEC 62301 clause 4.5 rounds standby power use below 5 mW to zero.*
2. *Values are nominal. RC time constant is <1 second with ±20% X capacitor and ±5% resistance from these nominal values.*
3. *Package: D: SO-8.*

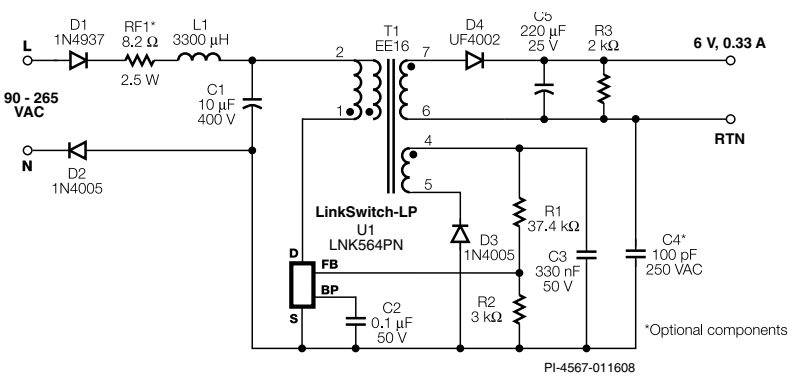
LinkSwitch-TN – Non-Isolated Dual Output Buck (RDK-138)

1.2 W, 7 V, 80 mA, and -5 V, 50 mA DUAL OUTPUT, 85 – 265 VAC INPUT BUCK DERIVED POWER SUPPLY



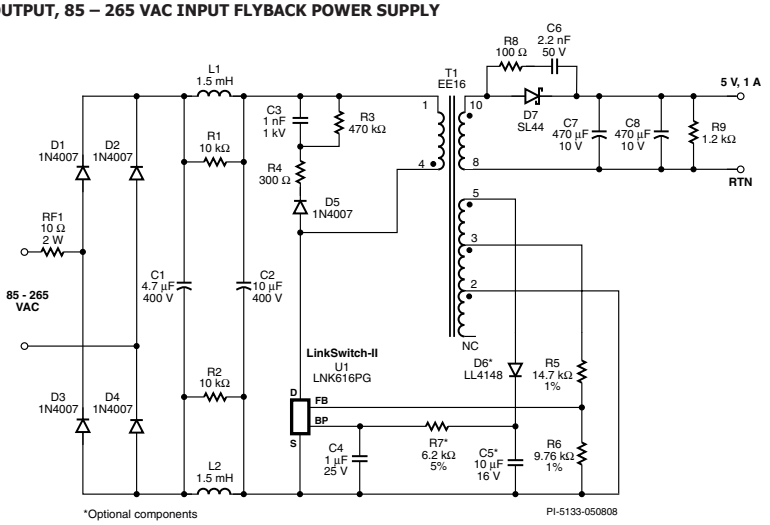
LinkSwitch-LP – Replacement for Unregulated Linear Transformer (DAK-85)

2 W, 6 V, 0.33 A OUTPUT, 90 – 265 VAC INPUT FLYBACK POWER SUPPLY



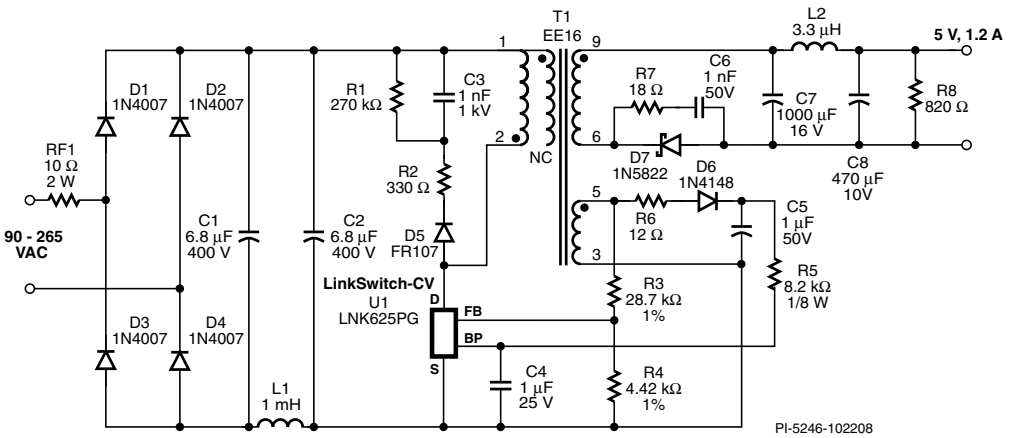
LinkSwitch-II – Low Power Constant Voltage, Constant Current Charger/Adapter (RDR-158)

5 W, 5 V, 1 A OUTPUT, 85 – 265 VAC INPUT FLYBACK POWER SUPPLY



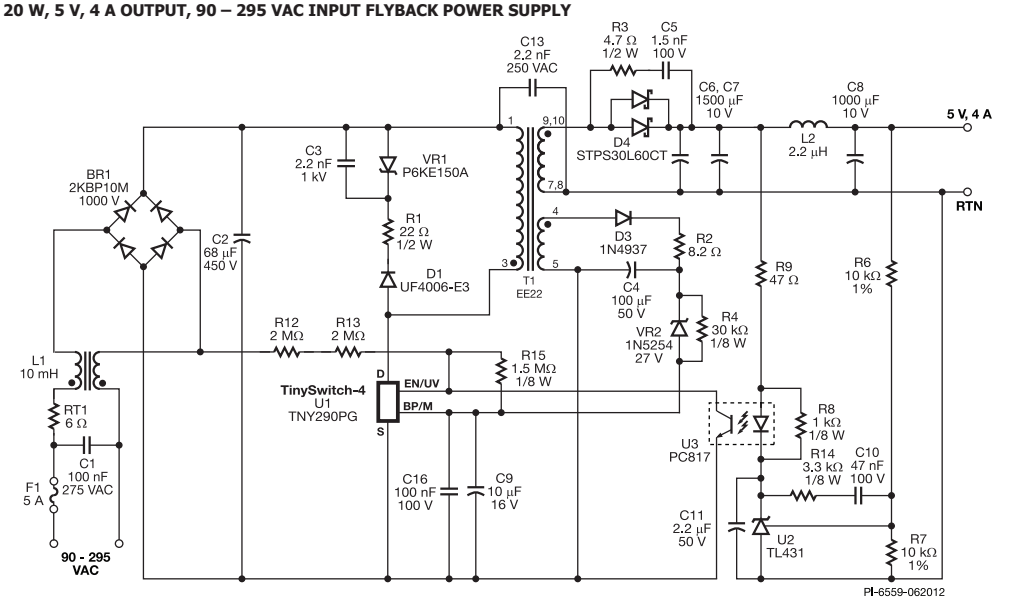
LinkSwitch-CV – Low Power Constant Voltage Adapter/Charger (RDR-201)

6 W, 5 V, 1.2 A OUTPUT, 90 – 265 VAC INPUT FLYBACK POWER SUPPLY



TinySwitch-4 – Low Cost, High-Efficiency, Flyback Power Supply (RDK-295)

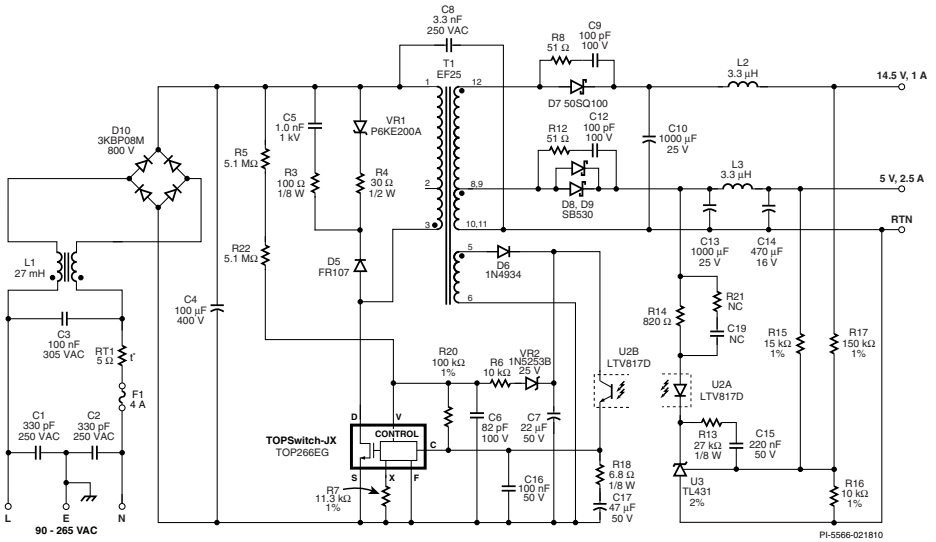
20 W, 5 V, 4 A OUTPUT, 90 – 295 VAC INPUT FLYBACK POWER SUPPLY



In a PC standby application input stage will be part of main power supply input

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

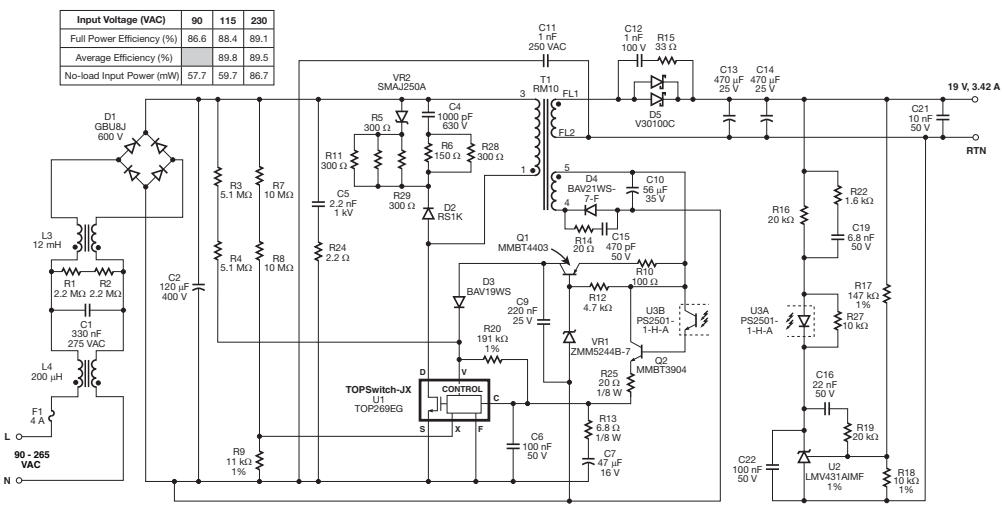
27 W, 14.5 V, 1 A, and 5 V, 2.5 A DUAL OUTPUT, 90 – 265 VAC INPUT FLYBACK POWER SUPPLY



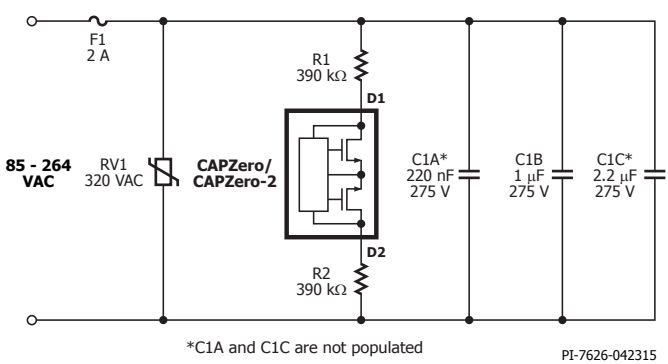
TOPSwitch-JX – Standard Notebook Adapter (DER-243)

65 W, 19.7 V, 3.42 A OUTPUT, 90 – 265 VAC INPUT 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



CAPZero/CAPZero-2 – Active Discharging of the X Capacitor for Reduced Standby or No-load Power Consumption (RDK-252)



World Headquarters 5245 Hellyer Avenue, San Jose, CA 95138, USA, Main: +1-408-414-9200
Customer Service Phone: +1-408-414-9665, Fax: +1-408-414-9765, Email: info@power.com

On the Web www.power.com