

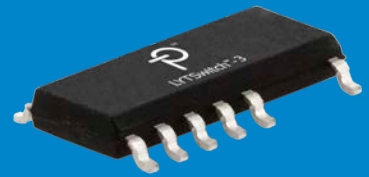


Innovation in power conversion

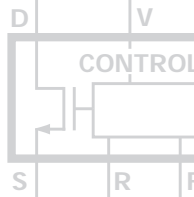
Solid-State Lighting Solutions

AC-DC LED Driver ICs

December 2016



LYTSwitch-4



Welcome

With over 8 billion of our monolithic integrated circuits designed into switching power supplies worldwide, Power Integrations is the clear leader in high-voltage ICs for power conversion. For more than two decades, we have focused on meeting power supply designers' needs with innovative products and comprehensive design support. If a product requires an AC-DC power supply up to 1000 W, Power Integrations' ICs can provide a cost-effective, energy-efficient solution with a fast time to market.

Power Integrations has been at the forefront of LED driver design for the past 7 years and is one of the world's largest suppliers of AC-DC LED driver ICs. With a broad range of products suitable for LED lighting, including our new LYTSwitch™ LED driver-IC families, PI's offering of LED lighting solutions is broader than anyone else's. Our high-PF devices deliver the isolated topologies and low THD required by the India market today while safely meeting any challenging line-voltage conditions.

Great IC solutions on their own are not enough, so PI also works hard to ensure that our customers have the best possible support during the design phase. We offer more than 80 LED-driver reference designs with the number growing every day, as well as industry leading PI Expert™ design software. PI Expert allows customers to design a working circuit quickly and provides detailed build information including transformer construction and guidance on component selection to help translate a reference design into a production-ready device. On top of this we have an excellent network of highly trained field applications engineers at our India offices to offer direct local support for your designs.

Whenever you use Power Integrations ICs, you will benefit from our unsurpassed level of device integration to reduce cost and space in LED designs. In addition, PI brings the quality and reliability for which our products are justly famous.

Thank you for your interest in our power conversion ICs for LED. To make sure that you are always using our latest design-support materials, and up-to-date information of reference designs, please visit our website at <https://led-driver.power.com>. Here you will find extensive information on LED solutions for commercial, residential and industrial LED applications as well as videos describing our lighting products in more detail.

Comprehensive information on global energy-efficiency standards can be found in the Power Integrations Green Room at <https://led-driver.power.com/green-room>.

As always, we welcome your suggestions to further improve our technical support materials and to better serve your needs.

Balu Balakrishnan
President and CEO
April 2016
San Jose, California



About Power Integrations' Solid-State Lighting Solutions

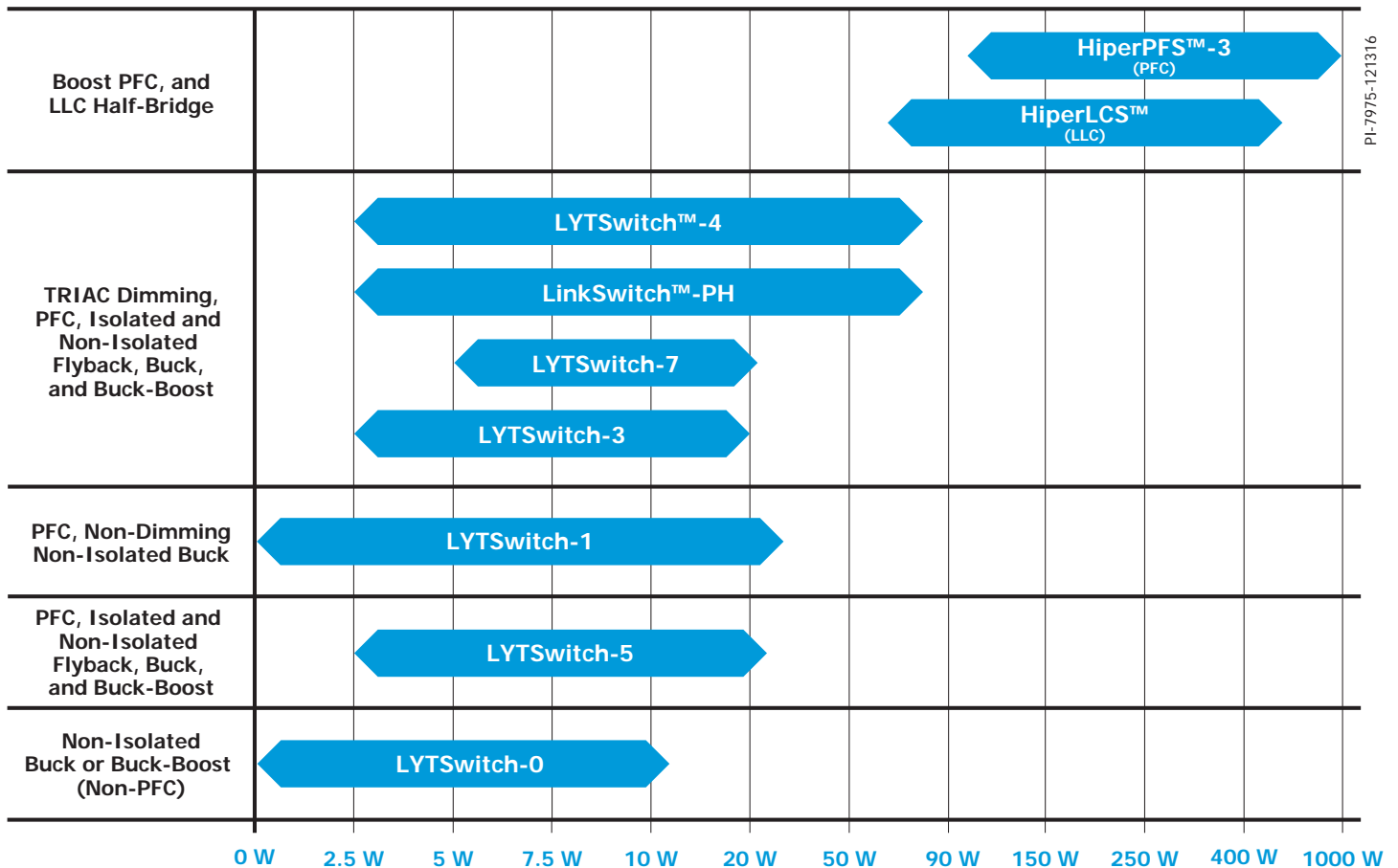
Power Integrations is the leading supplier of high-voltage analog integrated circuits used in energy-efficient power supplies. The company's innovative technology enables compact, energy-efficient power converters for a wide range of electronic products, LED lighting, AC-DC and DC-DC applications. With industry-leading product quality and delivery, the company has shipped billions of devices to customers around the world.

Power Integrations offers a broad range of highly integrated, high-power, constant current LED driver ICs for use in solid-state lighting LED applications where offline power supplies are required. Topologies include buck, buck-boost, resonant, and flyback.

- High efficiency single-stage conversion
- Long life time – no electrolytic bulk capacitors in the power train
- Phase-controlled TRIAC dimmability
- Single-stage power factor correction (PFC) plus accurate constant current (CC) output
- Small size
- Resistance to shock and vibration
- Highly integrated
- Design-in made easy with PI Expert design tools

For more detailed information about Power Integrations' LED driver ICs, please visit our Solid-State Lighting microsite at <https://led-driver.power.com>.

AC-DC Product Overview



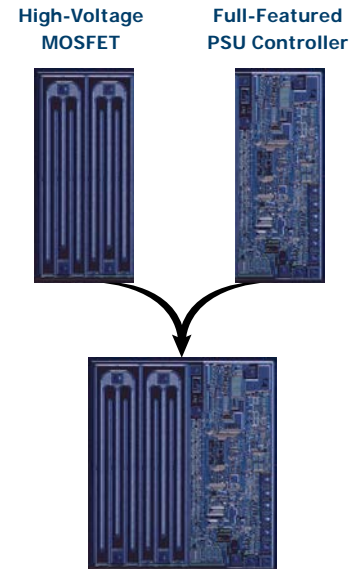
Design Simplification

Enabling Predictable Success

Power Integrations' highly integrated ICs enable the design and production of switch-mode power supplies that use up to 70% fewer components compared to discrete solutions. Switchers that incorporate our ICs are smaller, lighter, and more portable than comparable power supplies.

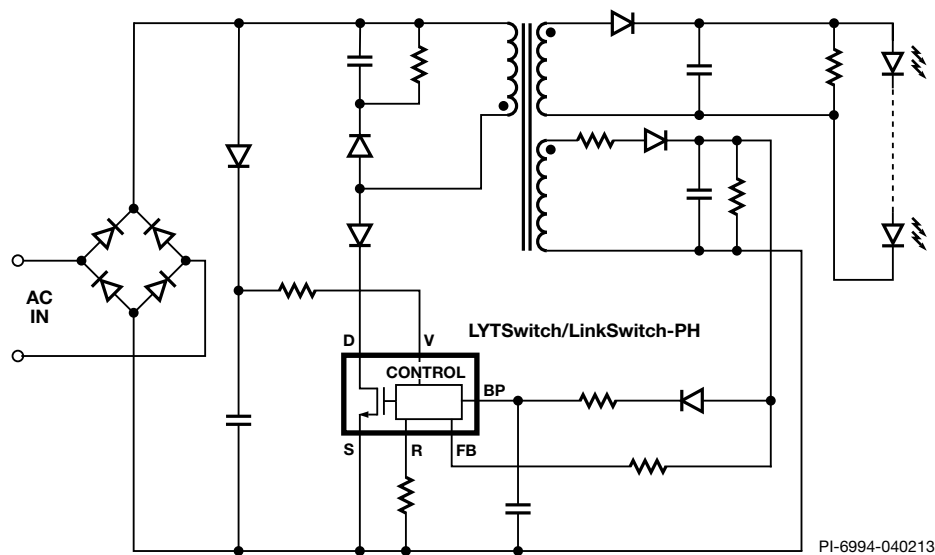
We combine a high-voltage power MOSFET switch with a controller on a single chip to provide key power supply functions, such as:

- High-voltage start-up
- Short-circuit and open-loop protection
- Programmable current limit
- Line undervoltage and overvoltage protection
- Output overvoltage protection
- Accurate over-temperature and over-power protection
- Soft-start
- Feedback compensation
- Remote ON/OFF



Reducing Component Count

LinkSwitch-PH and LYTSwitch dramatically simplify isolated flyback LED driver designs by eliminating an optocoupler and secondary control circuitry. The devices introduce a revolutionary control technique to provide very tight output regulation, compensating for transformer and internal parameter tolerances, along with input voltage variations. In addition the switching stage combines PFC + CC control functions, greatly reducing component count and increasing efficiency.

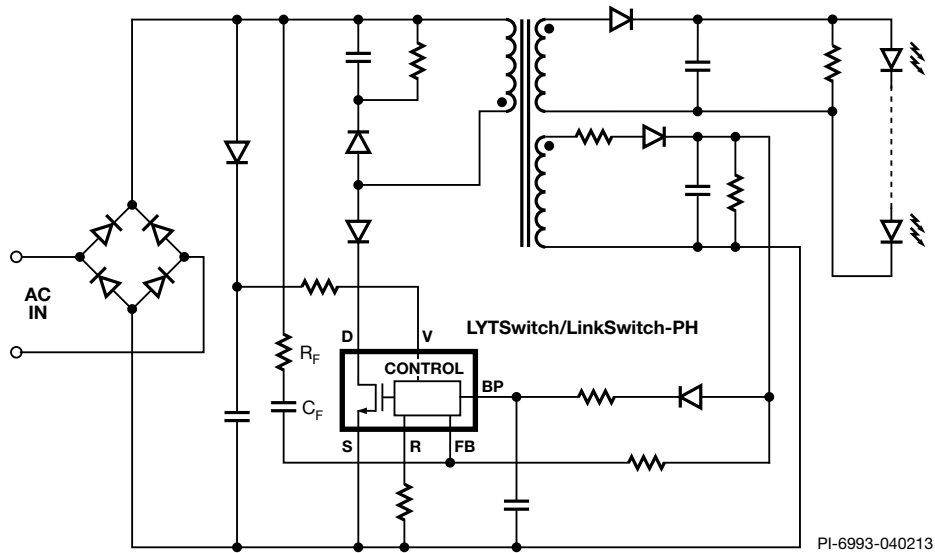


Design Simplification

Achieves Less Than 10% THD with LYTSwitch-4 and LinkSwitch-PH Designs

Low THD design (<10% THD) can easily be achieved with the LinkSwitch-PH and LYTSwitch-4 product families.

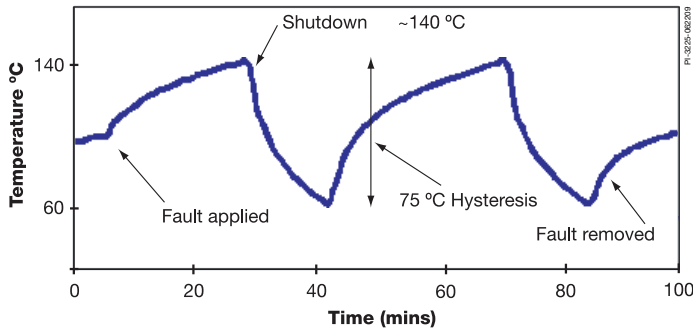
In order to achieve very low THD a simple line feed-forward circuit (shown below as R_F and C_F) can be added to bias the feed-forward circuit on the control stage. Contact your local PI representative for more information.



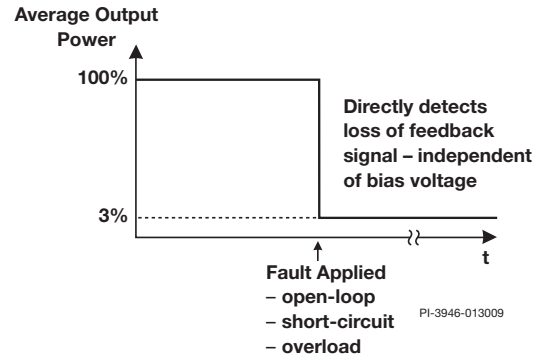
Product Features & Benefits

Comprehensive Fault Protection – Simplifies Design and Improves Reliability

- On-chip hysteretic thermal shutdown with auto-recovery
- Control loop fault protection is independent of bias voltage
- Protects entire system: device, PC board, magnetics and output rectifiers



Hysteretic Thermal Shutdown



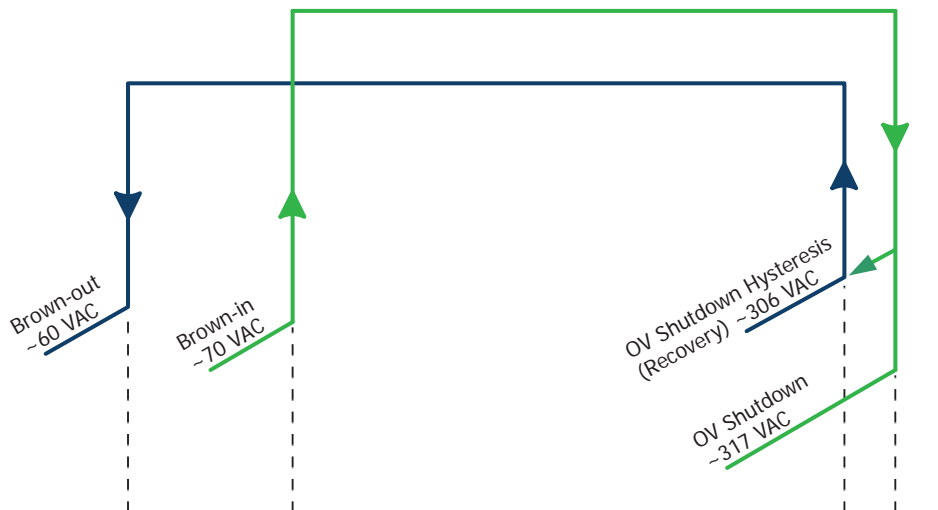
Output Power During Loss of Feedback

Line Overvoltage Protection

Power Integration's protection features include line overvoltage protection. Input voltage is monitored continuously by the IC. In the event that line voltage exceeds a safe operating point, switching is disabled. When line voltage returns to a safe level, switching restarts.

By interrupting switching, output reflected voltage (V_{OR}) is removed as a cause of stress on the switching stage. This together with the 700 V power MOSFET in the PI IC ensures a high level of protection against input surges and line swells.

A small amount of hysteresis is built into the OVP function to present misfiring. This is important in environments where high-line impedance is encountered.

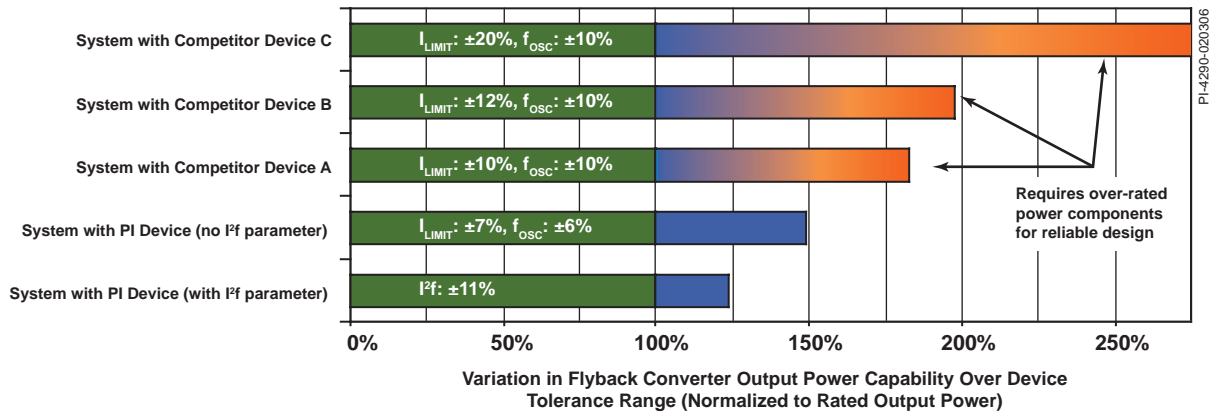


Line Overvoltage Hysteresis and Undervoltage Protection – LinkSwitch-PH

Product Features & Benefits

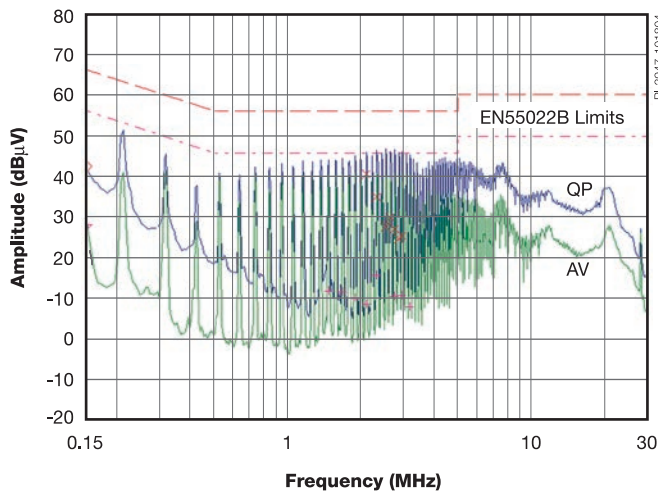
Tight Device Tolerances – Reduce System Cost

- Power Integrations' ICs have tight tolerances for current limit and switching frequency. This reduces the output overload power and therefore the power rating, size and cost for the output rectifiers, transformer and clamp components.

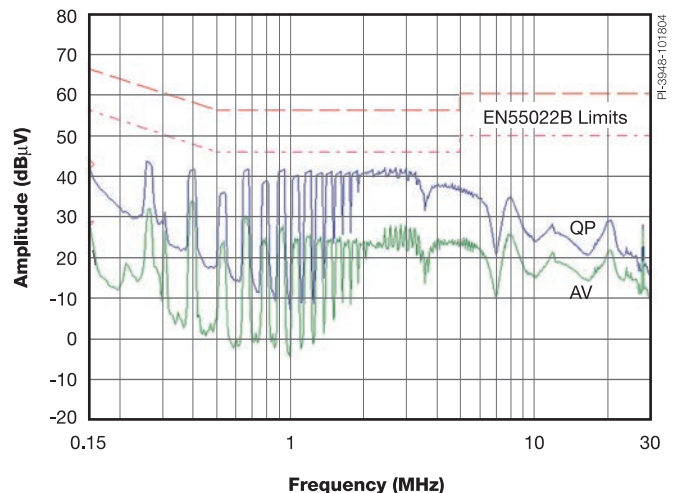


Frequency Jittering – Reduces EMI and EMI Filtering Costs

- Enables smaller, lower cost filter components



Conducted EMI without Jitter

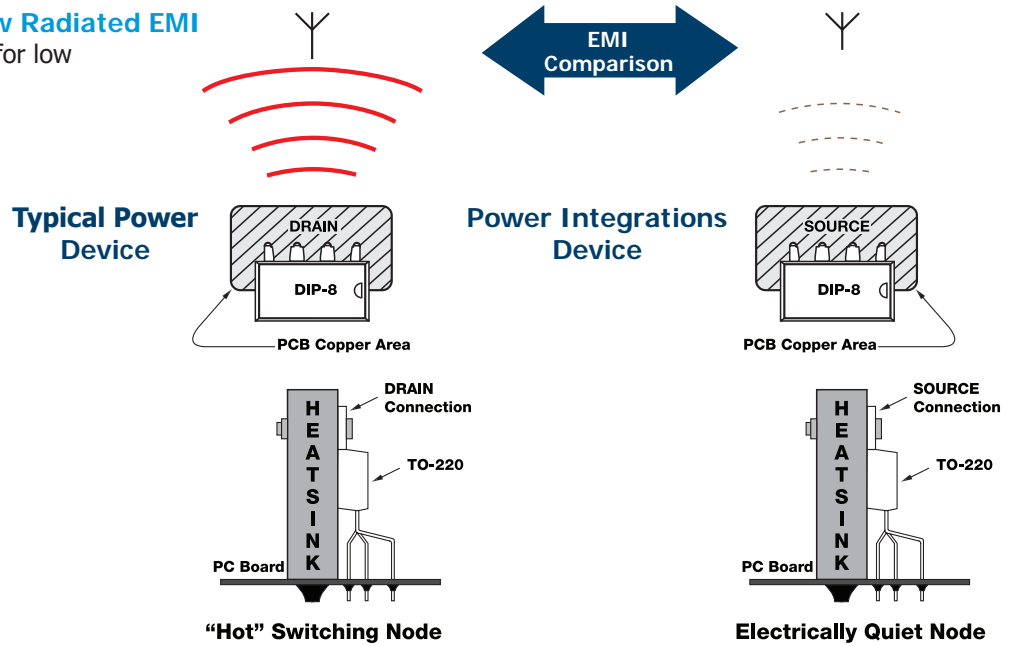


Conducted EMI with Jitter

Product Features & Benefits

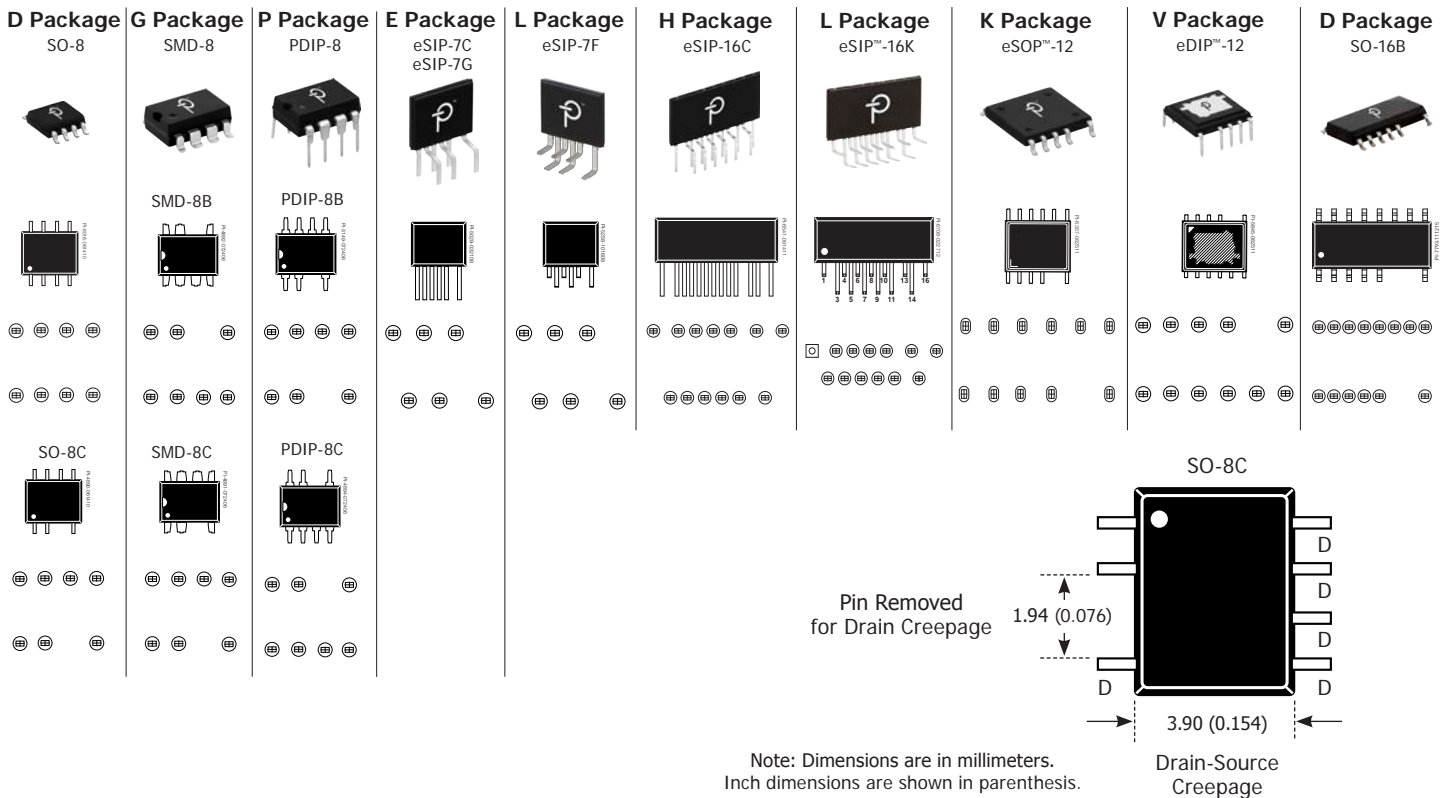
Source Heat Sinking – For Low Radiated EMI

- Heat sink connected to SOURCE for low radiated EMI



Package Design/Pin Layout – Improves Reliability

- Wide package DRAIN – SOURCE creepage reduces probability of arcing
- Important for high pollution degree environments and forced air cooling
- Optimal pin arrangement allows compliance with safety agency adjacent pin short-circuit test
- Packages below are RoHS compliant



Total Product Support

- Application notes
- Data sheets
- Design example reports
- Engineering prototype reports
- PI Expert design software
- Reference design kits

Learn more at led-driver.power.com/design-support

Reference Designs

Reference Design Kits (RDKs) provide all of the essential materials needed to demonstrate the advanced features of Power Integrations' ICs. Kits include a fully assembled and tested reference design power supply board, product samples, and an unpopulated PCB.

Design Example Report (DER)

Design Example Reports contain a power supply design specification, schematic, bill of materials, transformer documentation, and PCB layout. This design has been built and bench-tested to provide performance data and typical operation characteristics.

The Green Room

Power Integrations' Green Room web site (led-driver.power.com/green-room) offers the latest information in energy-efficient design, including:

- Energy-efficiency regulations: Search by application, regulatory agency or geographic location
- Mr. Green's blog: An informative blog about energy-efficiency standards and other green matters
- Energy FAQs: Answers to frequently asked questions about energy efficiency
- Energy-efficiency resources: Links to other helpful web sites addressing energy issues
- Introduction to green power: Tips for minimizing standby waste

PI Expert™ Design Software

This powerful, interactive software takes a designer's power supply specifications and automatically determines the critical components (including transformer specifications) needed to generate a working switch-mode power supply. Designs can be optimized for efficiency or cost using auto-design or manual control options. PI Expert simplifies the design of LED drivers, offline power supplies, and DC-DC converters, reducing design time from days to minutes.

Learn more at led-driver.power.com/design-support/pi-expert-suite

PI Forums

Power Integrations provides several forums where designers can discuss technical questions with PI engineers and the extensive Power Integrations' design community:

- Power Supply Design Forum: For general technical questions
- PI Expert Support Forum: For discussing PI Expert Design Software
- Green Energy Forum: For discussing energy efficiency regulations, EcoSmart technology and improving the energy efficiency of electronic products

To participate in PI Forums, go to led-driver.power.com/forum

Isolated IC Product Tables

LYTSwitch-3 – Single-Stage LED Driver IC with Combined PFC and Constant Current Output for Outstanding TRIAC Dimming in Isolated and Non-Isolated Topologies

Product ³	Output Power ¹ (W)
	85-132 VAC or 185-265 VAC
LYT33x4D ²	5.7
LYT33x5D	8.8
LYT33x6D	12.6
LYT33x8D	20.4

Additional Features:

- Less than ±3% CC regulation over line and load
- Power Factor >0.9
- Ensures monotonic VA reduction with TRIAC phase angle
- Low THD, 15% typical for dimmable bulbs, as low as 7% in optimized designs

Notes:

1. Maximum practical continuous power in an open frame design with adequate heat sinking, measured at 50°C ambient (see Key Applications Considerations section in data sheet for more information).
2. "x" digit describes $V_{DS(on)(MAX)}$ of the integrated switching MOSFET, 650 V = 1, 725 V = 2.
3. Package: D: SO-16B.

LYTSwitch-4 – Single-Stage Accurate Primary-Side Constant Current (CC) Controller with PFC for Applications with TRIAC Dimming and Non-Dimming Options^{1,2}

Product ⁷	Minimum Output Power ³ (W)	Maximum Output Power ⁴ (W)
LYT4x11E ⁵	2.5	12
LYT4x12E	2.5	15
LYT4x13E	3.8	18
LYT4x14E	4.5	22
LYT4x15E	5.5	25
LYT4x16E	6.8	35
LYT4x17E	8.0	50
LYT4x18E	18	78

Additional Features:

- Better than ±5% CC regulation
- TRIAC dimmable to less than 5% output
- Fast start-up
 - <250 ms at full brightness
 - <1s at 10% brightness
- High power factor >0.9
- Easily meets EN61000-3-2
 - Less than 10% THD in optimized designs
- Up to 92% efficient
- 132 kHz switching frequency for small magnetics

Notes:

1. Performance for typical design. See Applications Note.
2. Continuous power in open-frame design with adequate heat sinking; device local ambient of 70 °C. Power level calculated assuming a typical LED string voltage and efficiency >80%.
3. Minimum output power requires $C_{BP} = 47 \mu F$.
4. Maximum output power requires $C_{BP} = 4.7 \mu F$.
5. LYT4311 $C_{BP} = 47 \mu F$, LYT4211 $C_{BP} = 4.7 \mu F$.
6. LYT4321 $C_{BP} = 47 \mu F$, LYT4221 $C_{BP} = 4.7 \mu F$.
7. Package: eSIP-7C.

Product ⁷	Minimum Output Power ³ (W)	Maximum Output Power ⁴ (W)
LYT4x21E ⁶	6	12
LYT4x22E	6	15
LYT4x23E	8	18
LYT4x24E	9	22
LYT4x25E	11	25
LYT4x26E	14	35
LYT4x27E	19	50
LYT4x28E	33	78

Isolated IC Product Tables

LYTSwitch-5 – Single-Stage LED Driver IC with Combined PFC and Constant Current Output in Isolated and Non-Isolated Topologies

Product ²	Output Power ¹ (W)
	90-308 VAC
LYT5225D	9
LYT5216D, LYT5226D	16
LYT5218D, LYT5228D	25

- Notes:
- Maximum practical continuous power in an open frame design with adequate heat sinking, measured at 50°C ambient (see Key Applications Considerations section in data sheet for more information).
 - Package: D: SO-16B.
- Additional Features:**
- Accurate CC, better than ±3%
 - Power Factor >0.9
 - Low THD, <10% with typical input and output conditions
 - >90% efficient in optimized designs
 - High switching frequency and DCM allow compact magnetics
 - Supports buck, buck-boost, tapped-buck, boost, isolated and non-isolated flyback topologies
 - 2 MOSFET voltage options and 3 power levels for optimum device selection
 - No electrolytic bulk capacitors or optoisolators for increased lifetime
 - Comprehensive protection features
 - Input and output overvoltage
 - Open-loop protection
 - Advanced thermal control
 - Thermal foldback allows output light delivery at abnormally high ambient temperatures
 - Hysteretic shutdown provides protection during fault conditions

LinkSwitch-PH – Single-Stage PFC, Primary-Side Constant Current Control and TRIAC Dimming/ Non-Dimming Options^{1,2}

Product ⁵	Minimum Output Power ³ (W)	Maximum Output Power ⁴ (W)	Minimum Output Power ³ (W)	Maximum Output Power ⁴ (W)
	$R_v = 2 \text{ M}\Omega$		$R_v = 4 \text{ M}\Omega$	
	85-132 VAC		85-308 VAC	
LNK403/413E/L	2.5	4.5	6.5	12
LNK404/414E/L	2.5	5.5	6.5	15
LNK405/415E/L	3.8	7.0	8.5	18
LNK406/416E/L	4.5	8.0	10	22
LNK407/417E/L	5.5	10	12	25
LNK408/418E/L	6.8	13.5	16	35
LNK409/419E/L	8.0	20	18	50
LNK410/420E/L	18	31	40	78

- Additional Features:**
- Single-stage power factor correction and accurate constant current (CC) output
 - Flicker-free phase-controlled TRIAC dimming
 - Primary side control eliminates optocoupler and all secondary current control circuitry
 - Eliminates electrolytic bulk capacitor
 - Eliminates all control loop compensation circuitry
 - Simple PWM dimming interface
- Notes:
- Continuous power in an open frame with adequate heat sinking at device local ambient of 70 °C.
 - Power level calculated on typical LED string voltage with efficiency >80%.
 - Minimum output power with $C_{BP} = 10 \mu\text{F}$.
 - Maximum output power with $C_{BP} = 100 \mu\text{F}$. LNK4x3EG $C_{BP} = 10 \mu\text{F}$.
 - Package: eSIP-7C, eSIP-7F.

Isolated IC Product Tables

HiperPFS-3 – PFC Controller with Integrated High-Voltage MOSFET and Qspeed Diode Optimized for High PF and Efficiency Across Load Range

Universal Input Devices		
Product ³	Maximum Continuous Output Power Rating at 90 VAC ¹ (W) (Full Power Mode)	Peak Output Power ² (W) (Full Power Mode)
PFS7523L/H	110	120
PFS7524L/H	130	150
PFS7525L/H	185	205
PFS7526H	230	260
PFS7527H	290	320
PFS7528H	350	385
PFS7529H	405	450

High-Line Only Input Devices		
Product ³	Maximum Continuous Output Power Rating at 180 VAC ¹ (W) (Full Power Mode)	Peak Output Power ² (W) (Full Power Mode)
PFS7533H	255	280
PFS7534H	315	350
PFS7535H	435	480
PFS7536H	550	610
PFS7537H	675	750
PFS7538H	810	900
PFS7539H	900	1000

- Notes:
1. Maximum practical continuous power at 90 VAC in an open-frame design with adequate heat sinking, measured at 50 °C ambient.
 2. Internal output power limit.
 3. Package: H: eSIP-16D, L: eSIP-16G.
- Additional Features:**
- Incorporates high-voltage power MOSFET, ultra-low reverse recovery loss Qspeed diode, controller and gate driver.
 - EN61000-3-2 Class C and Class D compliance.
 - Integrated protection features reduce external component count.
 - Accurate built-in brown-in/out protection.
 - Accurate built-in undervoltage (UV) protection.
 - Accurate built-in overvoltage (OV) protection.
 - Hysteretic thermal shutdown (OTP).
 - Internal power limiting function for overload protection.
 - Cycle-by-cycle power switch current limit.
 - Internal non-linear error amplifier for enhanced load transient response.
 - No external current sense resistor required.
 - Provides 'lossless' internal sensing via sense-FET.
 - Reduces component count and system losses.
 - Minimizes high current gate drive loop area.
 - Minimizes output overshoot and stresses during start-up
 - Integrated power limit.
 - Improved dynamic response.
 - Digitally controlled input line feed-forward gain adjustment for flattened loop gain across entire input voltage range.
 - Eliminates up to 40 discrete components for higher reliability and lower cost.
 - Continuous conduction mode PFC uses novel constant amp-second [on-time] volt-second [off-time] control engine.
 - High efficiency across load.
 - High power factor across load.
 - Low cost EMI filter.
 - Frequency sliding technique for light load efficiency improvements.
 - >95% efficiency from 10% load to full load achievable at nominal input voltages.
 - Variable switching frequency to simplify EMI filter design.
 - Varies over line input voltage to maximize efficiency and minimize EMI filter requirements.
 - Varies with input line cycle voltage by >60 kHz to maximize spread spectrum effect.
 - Up to 450 W [universal], 1 kW [high-line only] peak output power capability in a highly compact package.
 - Simple adhesive or clip mounting to heat sink.
 - No insulation pad required and can be directly connected to heat sink.
 - Staggered pin arrangement for simple routing of board traces and high-voltage creepage requirements.
 - Single package solution for PFC converter reduces assembly costs and layout size.

HiperLCS – Integrated LLC Controller, High-Voltage Power MOSFETs and Drivers

Product	Power ¹ (W)
LCS700H/L	110
LCS701H/L	170
LCS702H/L	220
LCS703H/L	275
LCS705H	350
LCS708H	440

- Notes:
1. Maximum practical power is the power the part can deliver when properly mounted to a heat sink and a maximum heat sink temperature of 90 °C.
- Additional Features:**
- Accurate programmable minimum and maximum frequency limits
 - Precise duty symmetry balances output rectifier current, improving efficiency
 - Comprehensive fault handling and current limiting
 - Programmable brown-in/out thresholds and hysteresis
 - Undervoltage (UV) and overvoltage (OV) protection
 - Programmable over-current protection (OCP)
 - Short-circuit protection (SCP)
 - Over-temperature protection (OTP)
 - Programmable dead-time
 - Programmable burst mode maintains regulation at no-load and improves light load efficiency
 - Programmable soft-start time and delay before soft-start
 - Proprietary eSIP-16J package
 - Exposed thermal pad connected to ground potential – no insulators required between package and heat sink
 - Staggered pin arrangement for simple PC board routing and high-voltage creepage requirements

Isolated Reference Designs

Product Family	AC Input Voltage (V)	Output Power (W)	Output Current (A)	TRIAC Dimming	Power Factor	Efficiency (%)	Topology	Document	RDK	Page Number
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TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH	185-264	6	0.26	✓	>0.90	78	Flyback	DER-269		14
LinkSwitch-PH	90-265	7	0.38	✓	>0.90	85	Flyback	DER-277		14
LinkSwitch-PH	90-265	7	0.33	✓	>0.97	82	Flyback	RDR-193	RDK-193	15
LinkSwitch-PH	198-265	8	0.38	✓	>0.86	74	Flyback	DER-264		16
LYTSwitch-4	90-132	9.5	0.53	✓	>0.96	81	Flyback	DER-353		17
LYTSwitch-4	90-132	12.6	0.37	✓	>0.96	83	Flyback	RDR-347	RDK-347	**
LinkSwitch-PH	90-265	14	0.5	✓	>0.98	87	Flyback	RDR-195	RDK-195	18
LinkSwitch-PH	180-265	14	0.5	*	>0.97	85.5	Flyback	DER-263		19
LinkSwitch-PH	185-265	15.3	0.425	✓	>0.90	87	Flyback	DER-314		20
LYTSwitch-4	90-132	20	0.55	✓	>0.98	85	Flyback	DER-350		21
LYTSwitch-4	185-265	20	0.55	✓	>0.90	86	Flyback	DER-396		22
LYTSwitch-4	170-300	33	0.35	*	>0.90	85	Flyback	DER-427		23

Non-Dimmable Bulb Replacement Designs

LYTSwitch-5	90-265	14	0.35		>0.90	86	Flyback	DER-528		24
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Tube Replacement Designs

LinkSwitch-PH	90-265	15	0.3		>0.96	87	Flyback	DER-256		25
LinkSwitch-PH	90-265	15	0.5		>0.90	90.7	Flyback	DER-278		25
LinkSwitch-PH	90-265	15	0.5		>0.90	91.7	Flyback	DER-284		26
LinkSwitch-PH	90-265	15	0.5		>0.90	85	Flyback	DER-288		26
LYTSwitch-4	90-135	23	0.43		>0.90	86	Flyback	DER-338		27
LinkSwitch-PH	185-265	23	0.430		>0.90	87	Flyback	DER-318		28
LYTSwitch-4	195-265	25	1.04		>0.90	85	Flyback	DER-429		29
LinkSwitch-PH	90-308	30	1		>0.90	91	Flyback	DER-286		30
LYTSwitch-4	90-132	30	0.50	*	>0.95	85	Flyback	DER-442		31

Down Light Designs

LYTSwitch-3	90-132	9.5	0.35	✓	>0.90	85	Flyback	DER-502		32
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High Power LED Designs

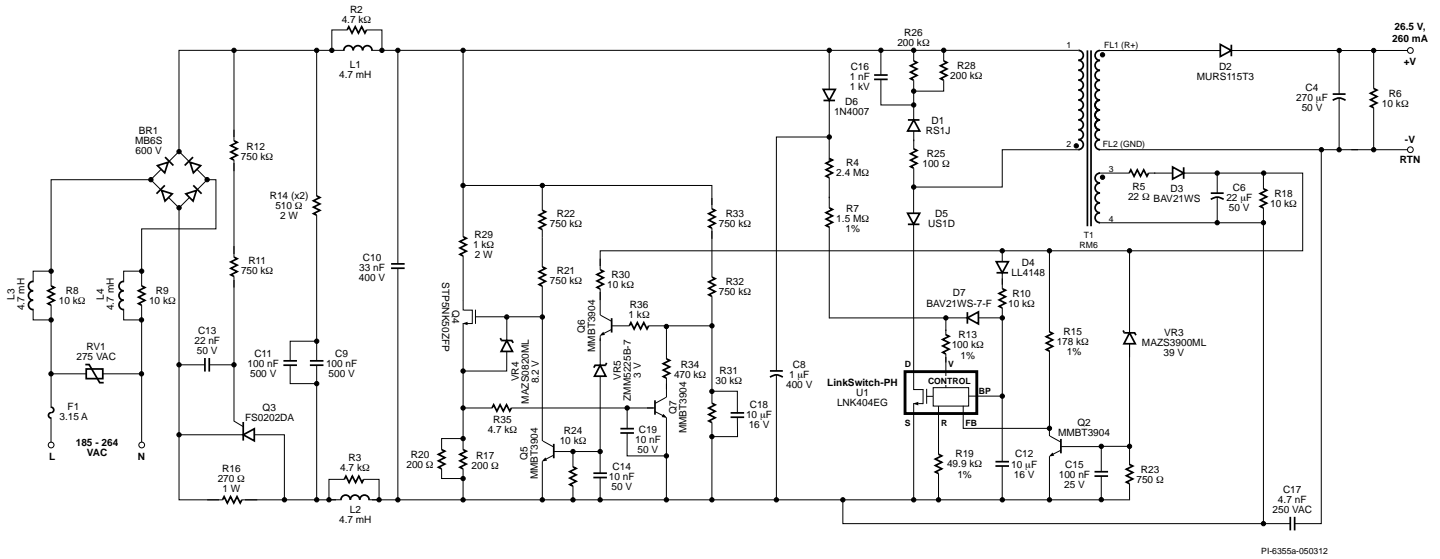
LinkSwitch-PH	180-300	75	2.1		>0.95	92	Flyback	RDR-290	RDK-290	33
HiperLCS	90-265	150	3.5		>0.97	93	PFC + LLC	RDR-382	RDK-382	34-35
HiperPFS-3	90-264	275	0.71		>0.90	95	PFC	DER-394		36

*Analog dimming, **See www.power.com

TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH – Isolated TRIAC Dimmable, Power Factor Corrected, LED Driver with Smart Active Load for Wide Dimming Range with High Power Dimmers (DER-269)

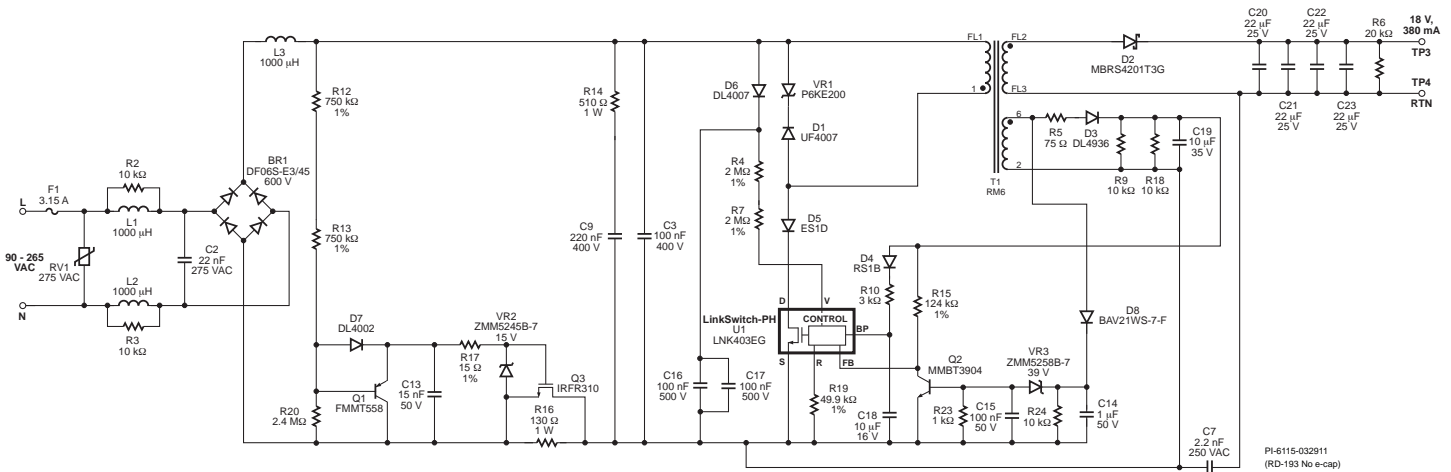
6 W, 26.5 V, 260 mA OUTPUT, 185 – 264 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, A19 POWER SUPPLY



PI-6355a-050312

LinkSwitch-PH – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-277)

7 W, 18 V, 380 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, PAR20 POWER SUPPLY

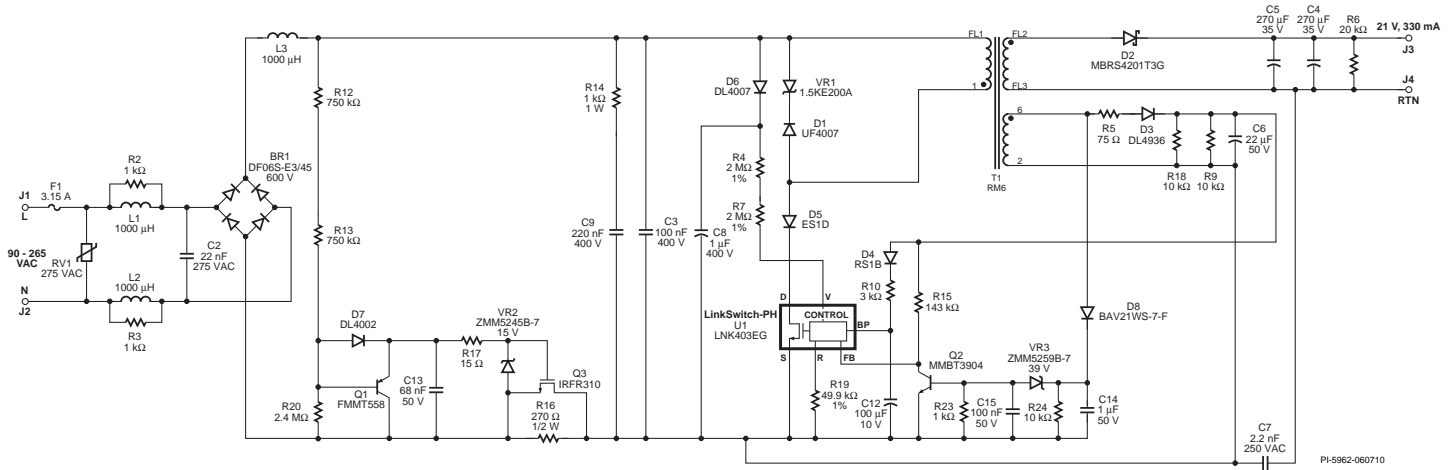


PI-6115-032911 (RD-193 No e-cap)

TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (RDK-193)

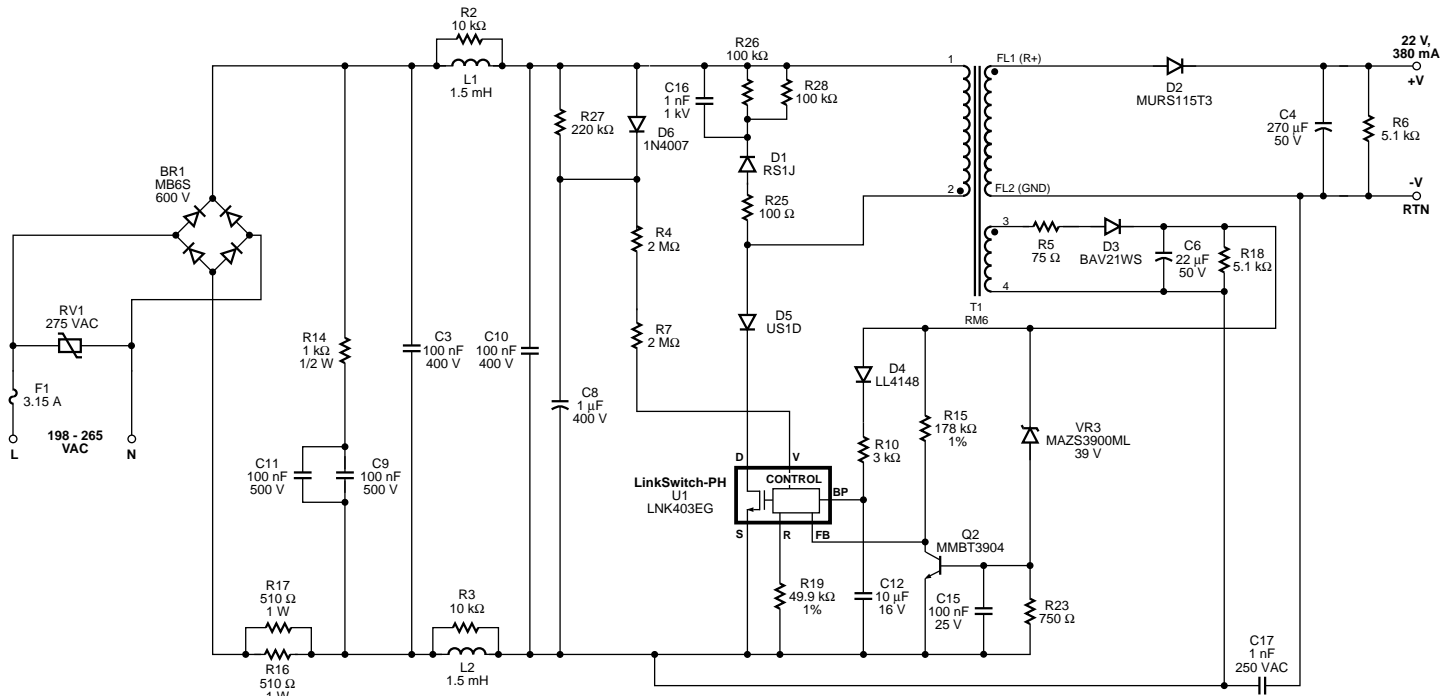
7 W, 21 V, 330 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, PAR20 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, High Power TRIAC Dimmable LED Driver (DER-264)

8 W, 22 V, 380 mA OUTPUT, 198 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, A19 POWER SUPPLY



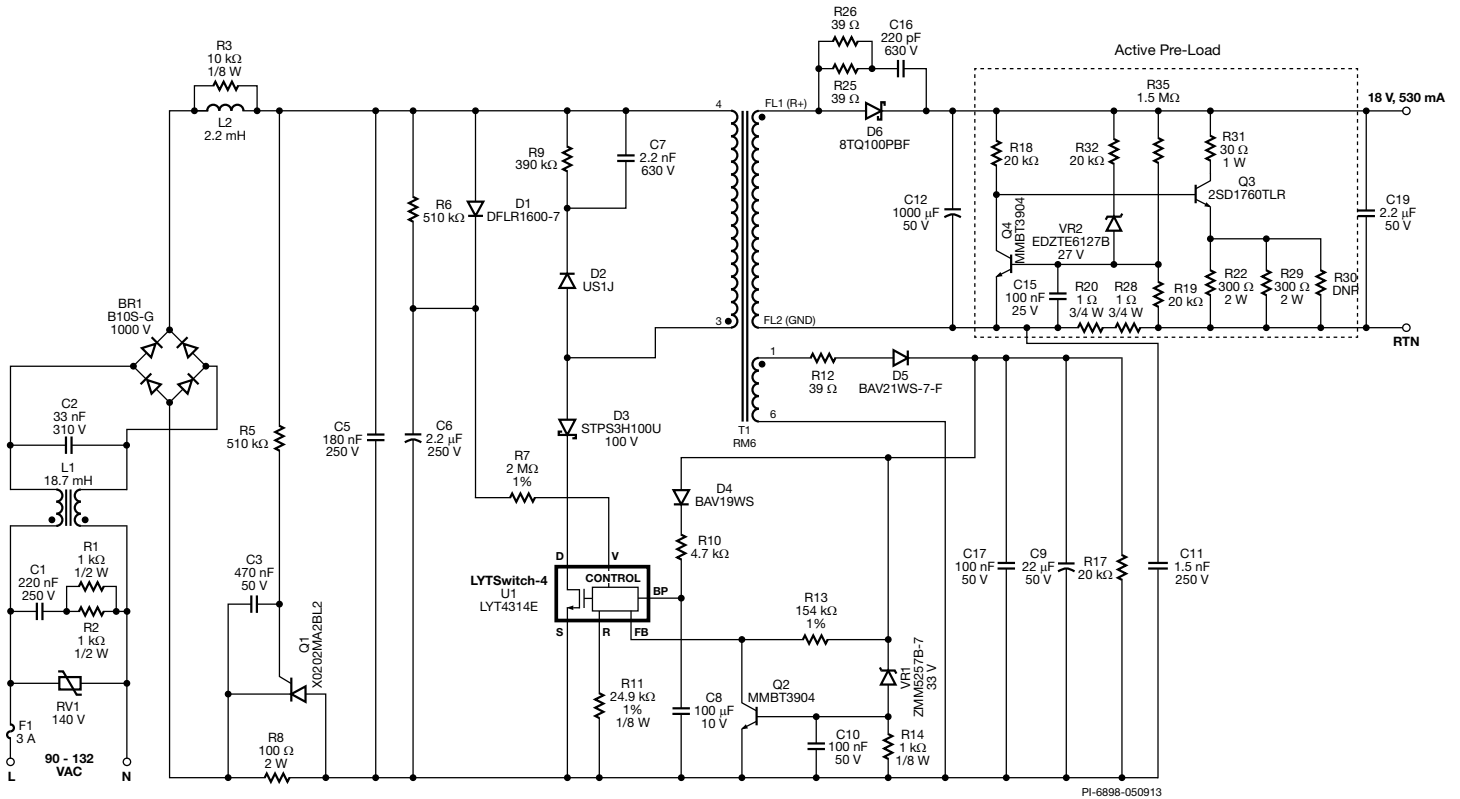
PI-6302-121710



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-353)

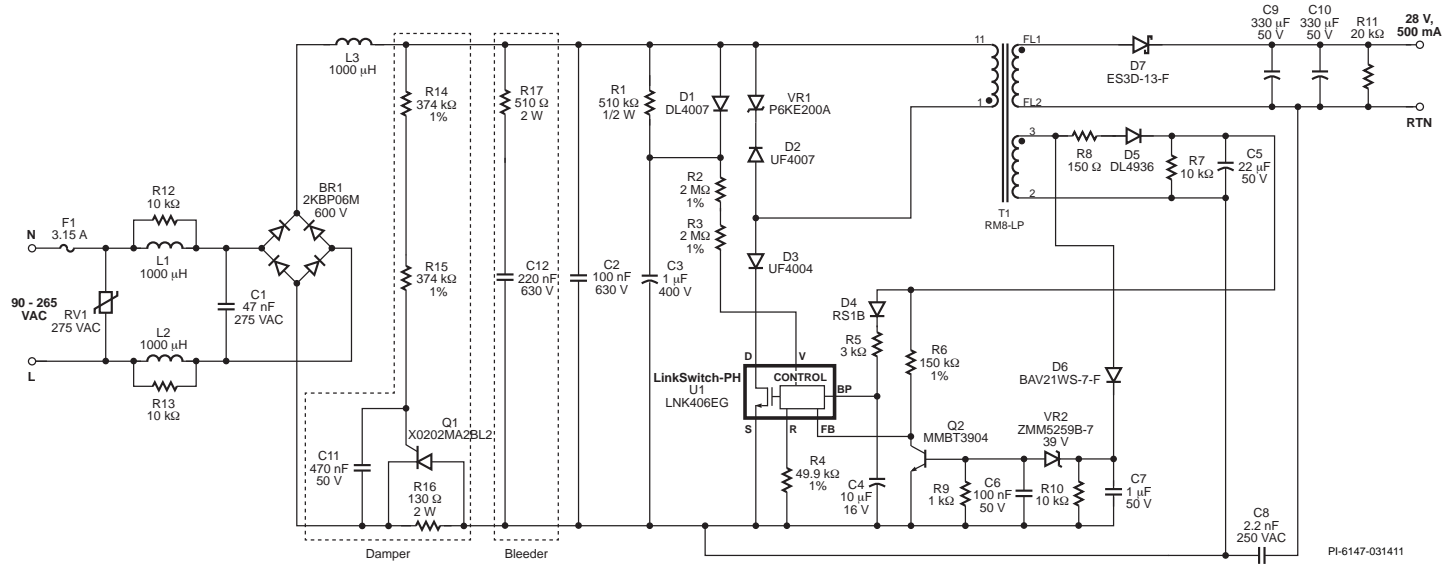
9.5 W, 18 V, 530 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, ISOLATED FLYBACK, TRACK LIGHT POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (RDK-195)

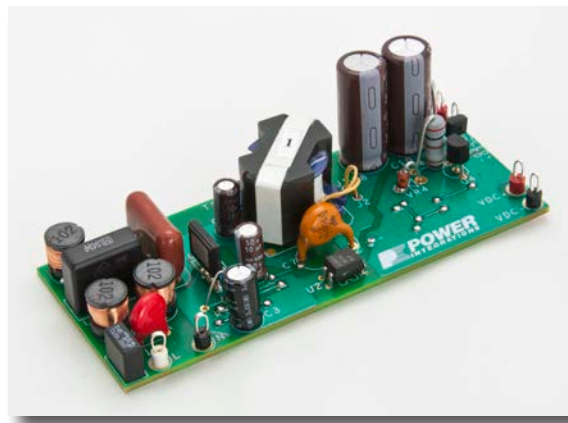
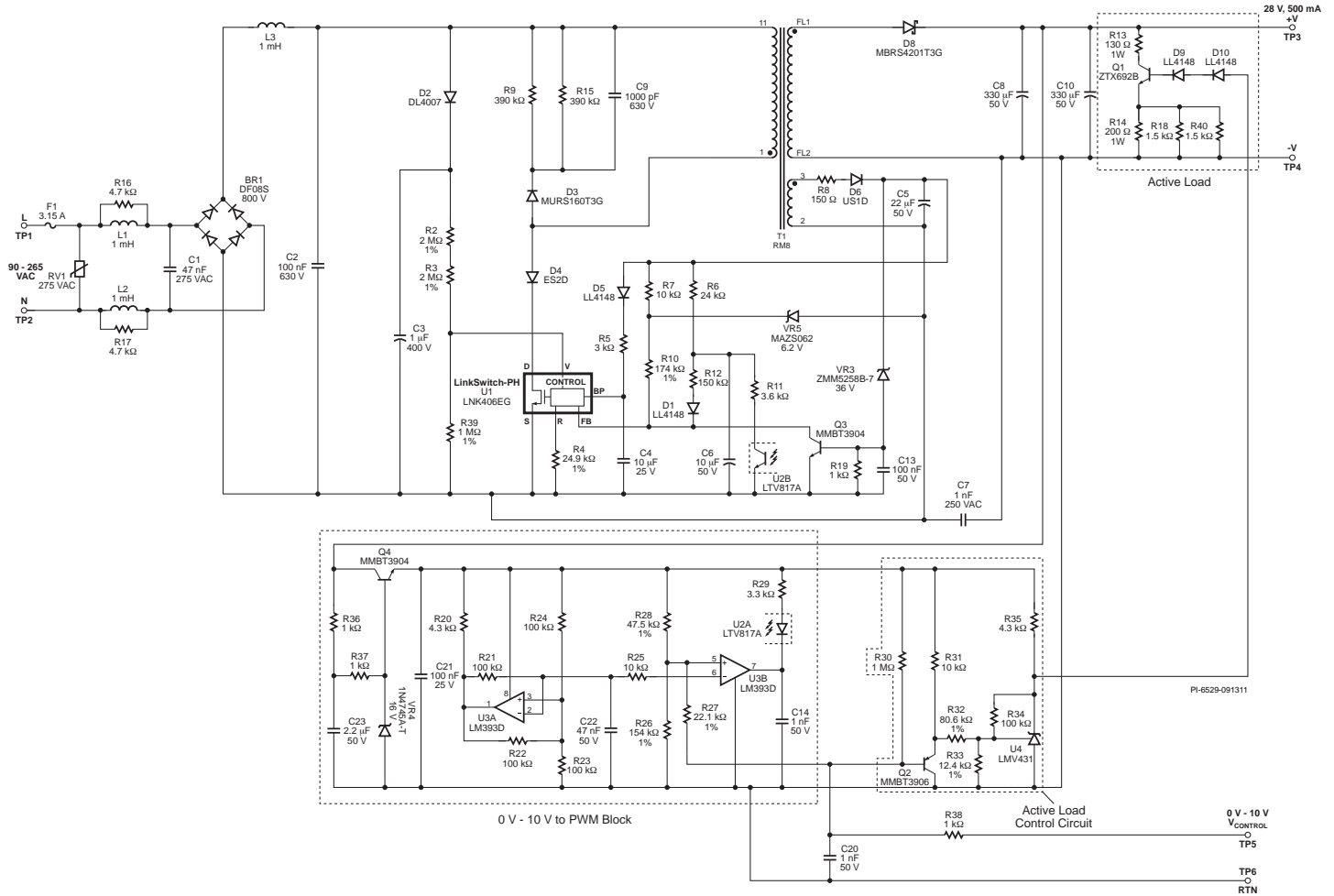
14 W, 28 V, 500 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, PAR38 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, PWM Dimming LED Driver (DER-263)

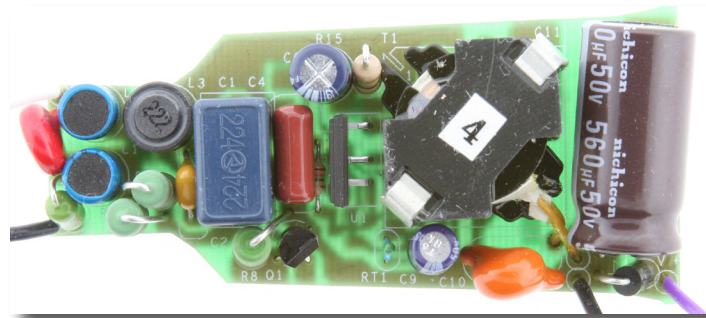
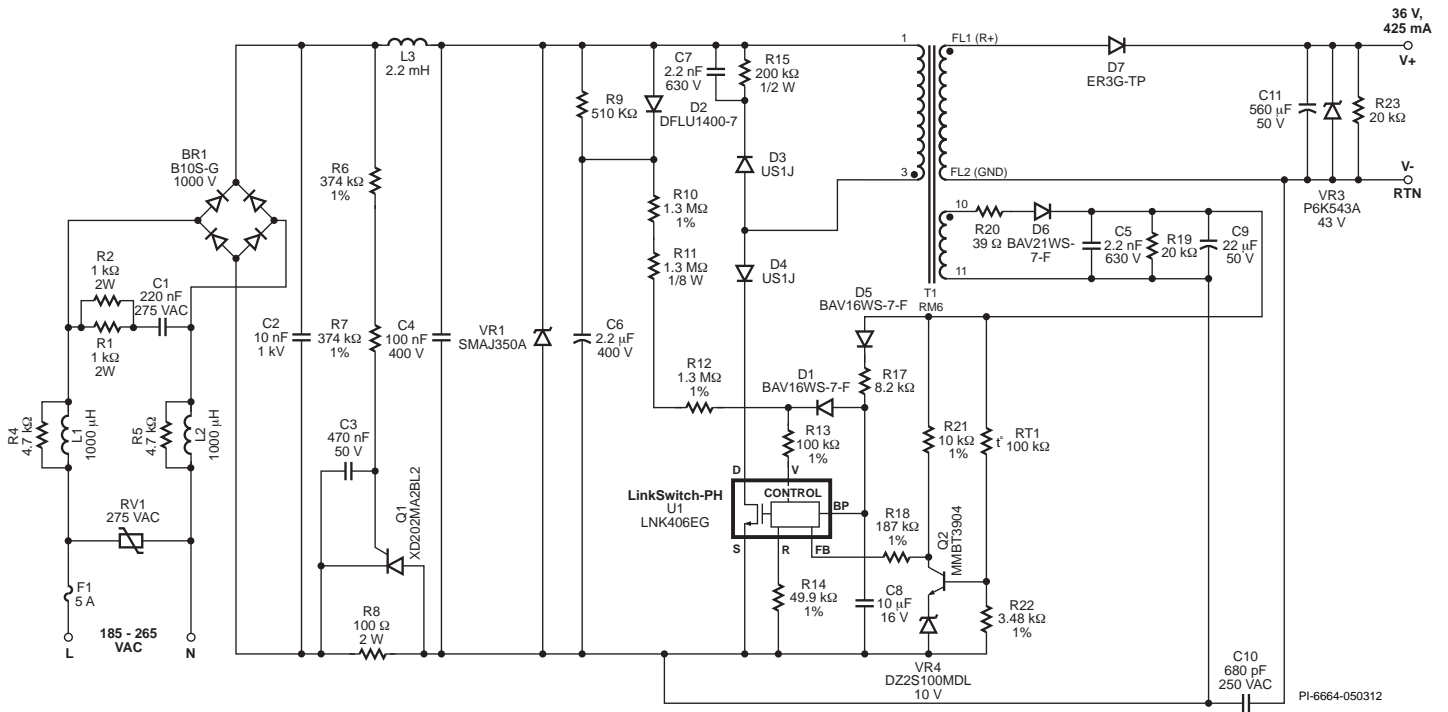
14 W, 28 V, 500 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, PAR38 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-314)

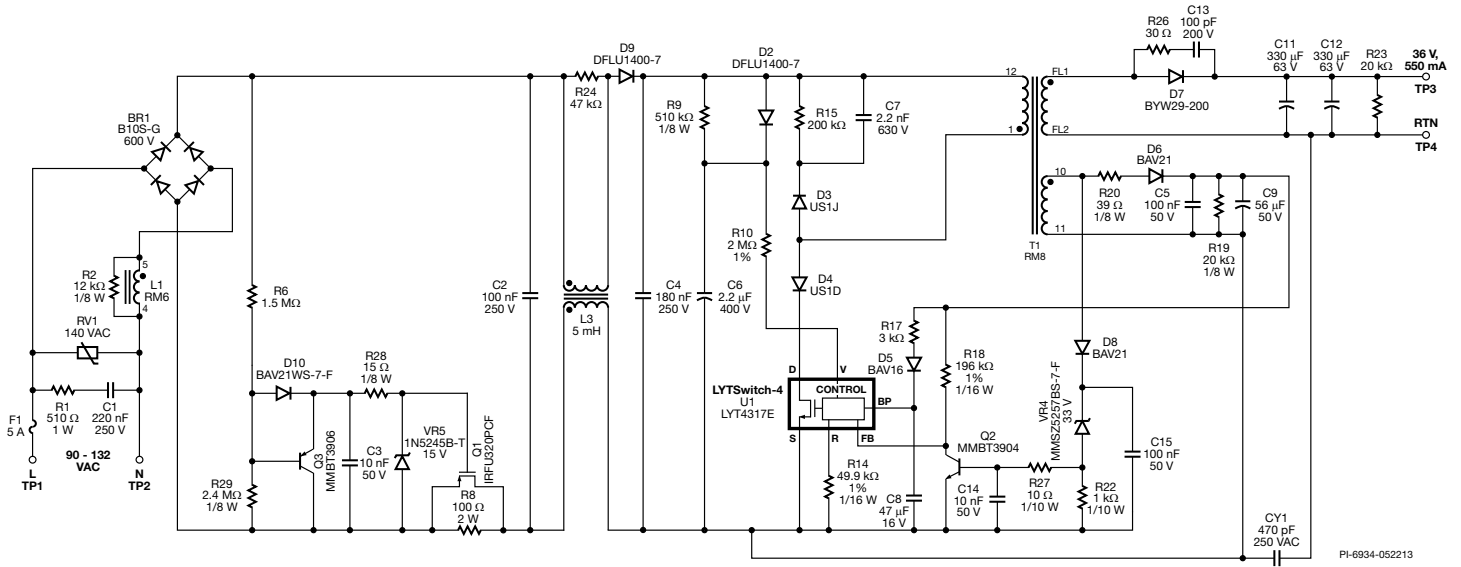
15.3 W, 36 V, 425 mA OUTPUT, 185 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, PAR30/38 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-350)

20 W, 36 V, 550 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, ISOLATED FLYBACK CONVERTER, PAR38 POWER SUPPLY

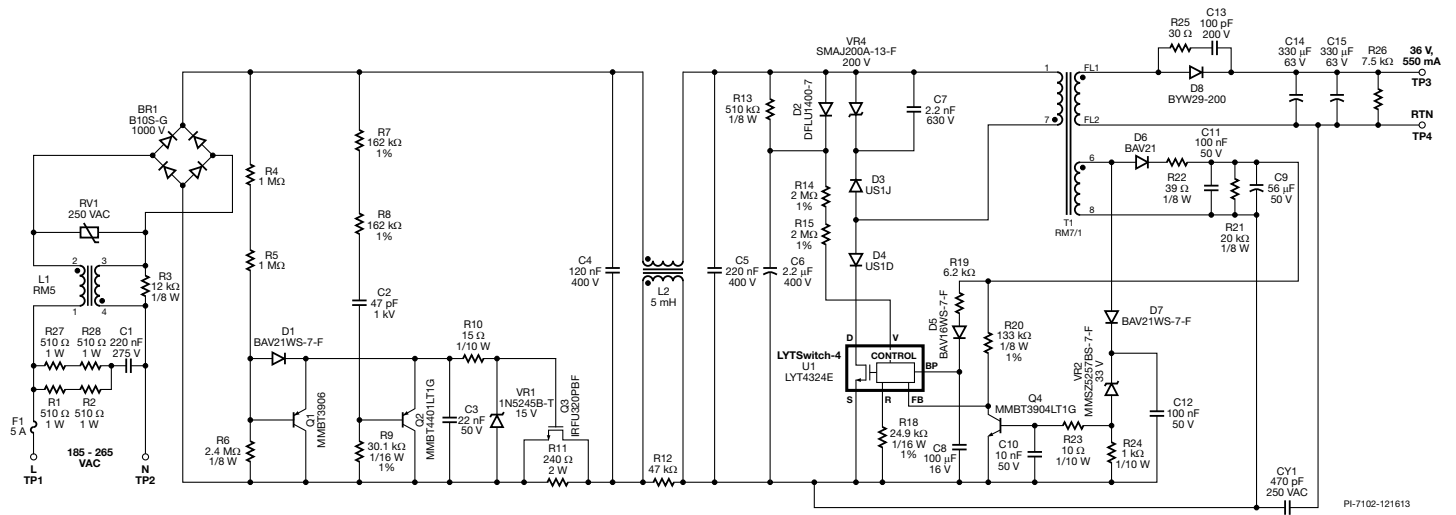


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TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-396)

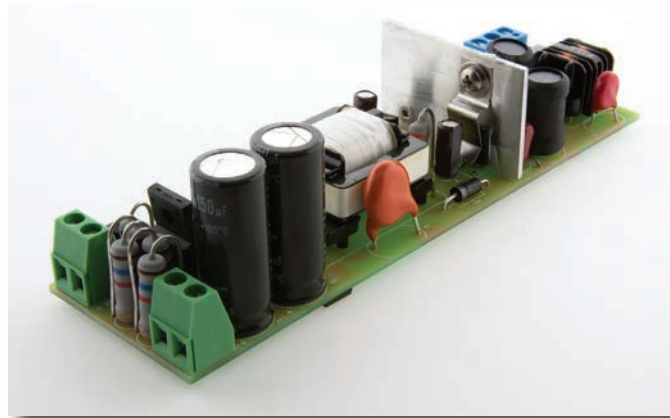
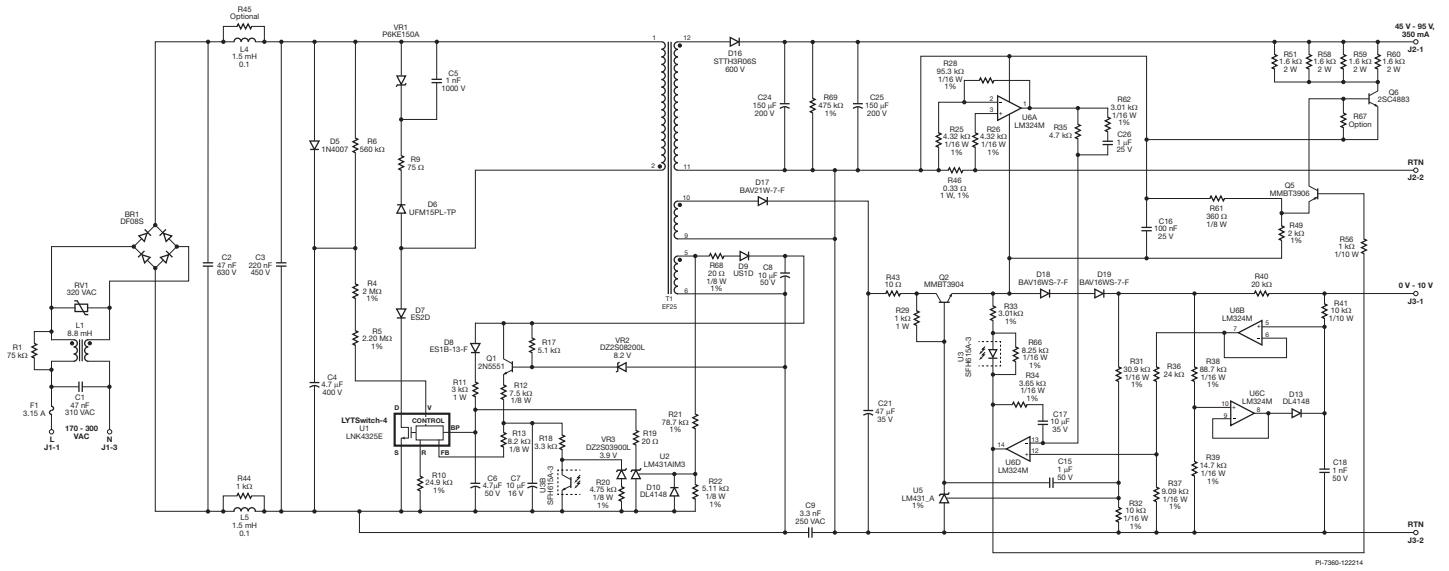
20 W, 36 V, 550 mA OUTPUT, 185 – 265 VAC INPUT, SINGLE-STAGE PFC, ISOLATED FLYBACK, PAR38 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, Analog Dimmable LED Driver (DER-427)

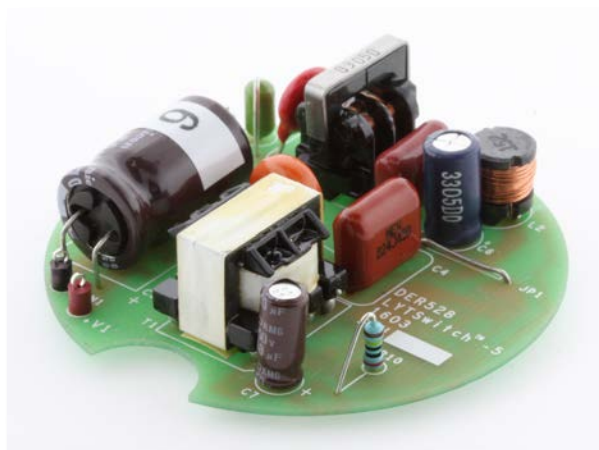
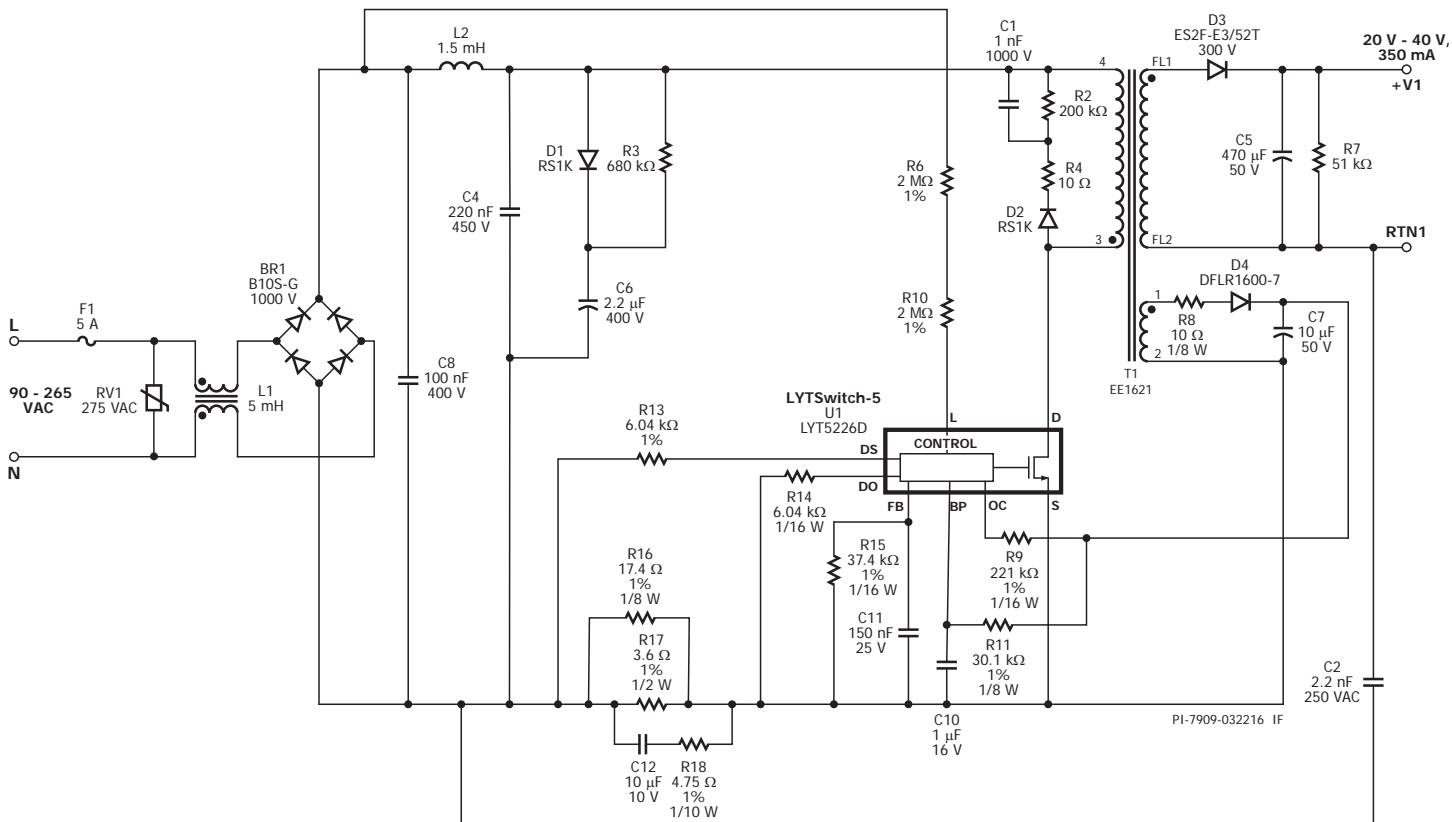
33 W, 45 V – 95 V, 350 mA OUTPUT, 170 – 300 VAC INPUT, SINGLE-STAGE PFC, ISOLATED FLYBACK, DC T8 TUBE POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

LYTSwitch-0 – Isolated, High-Efficiency, High Power Factor, LED Driver (DER-528)

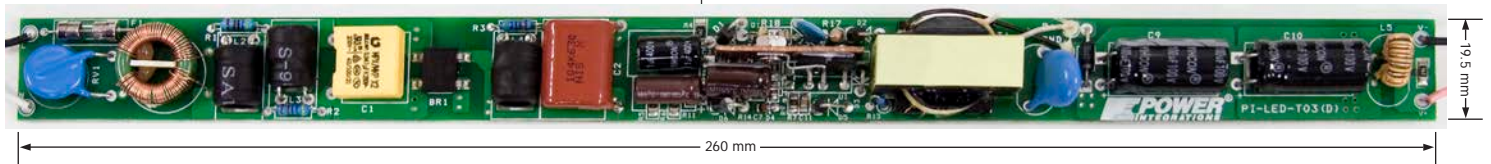
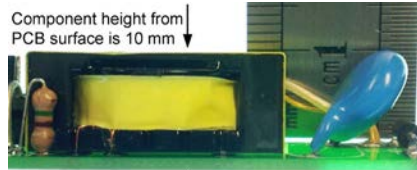
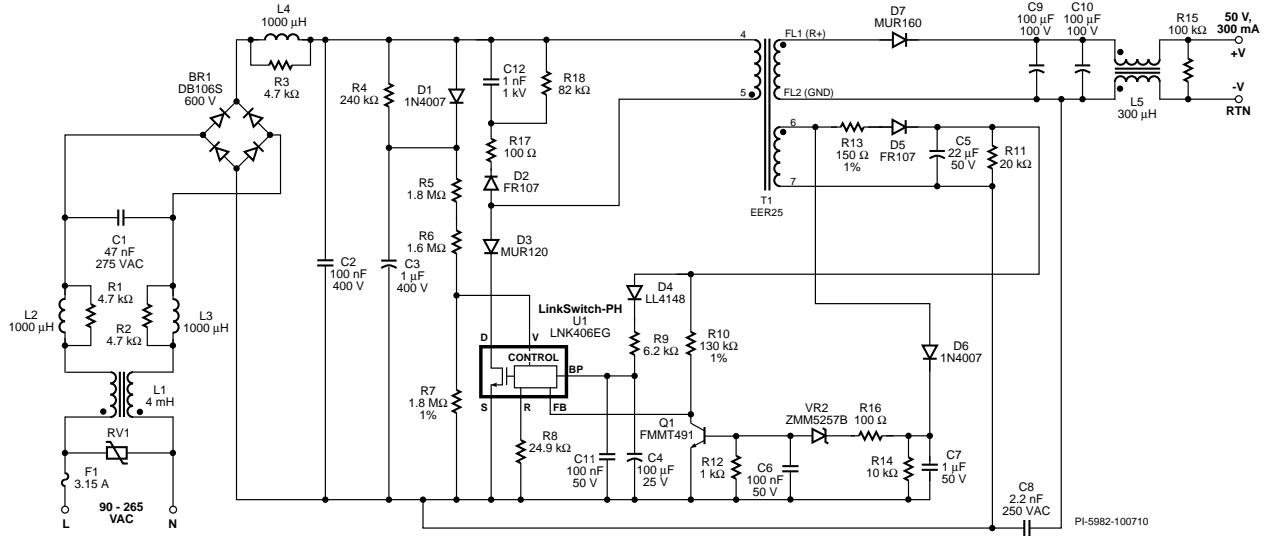
14 W, 20 V – 40 V, 350 mA, 90 – 265 VAC INPUT, ISOLATED FLYBACK, DOWN LIGHT POWER SUPPLY



Tube Replacement Designs

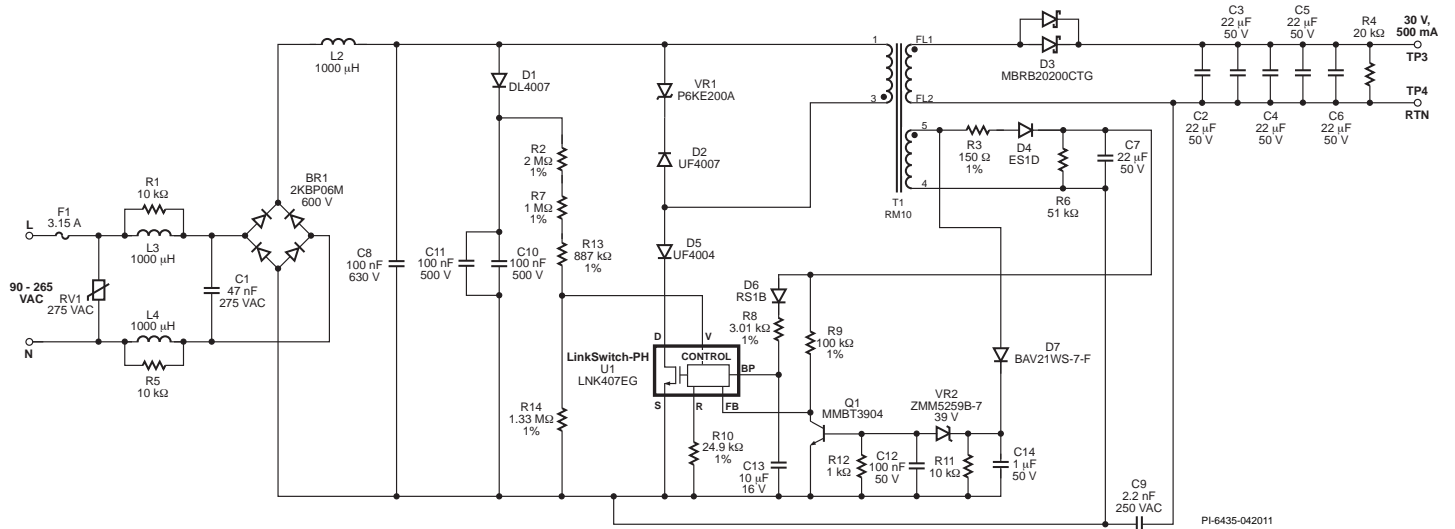
LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (DER-256)

15 W, 50 V, 300 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, T8 POWER SUPPLY



LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (DER-278)

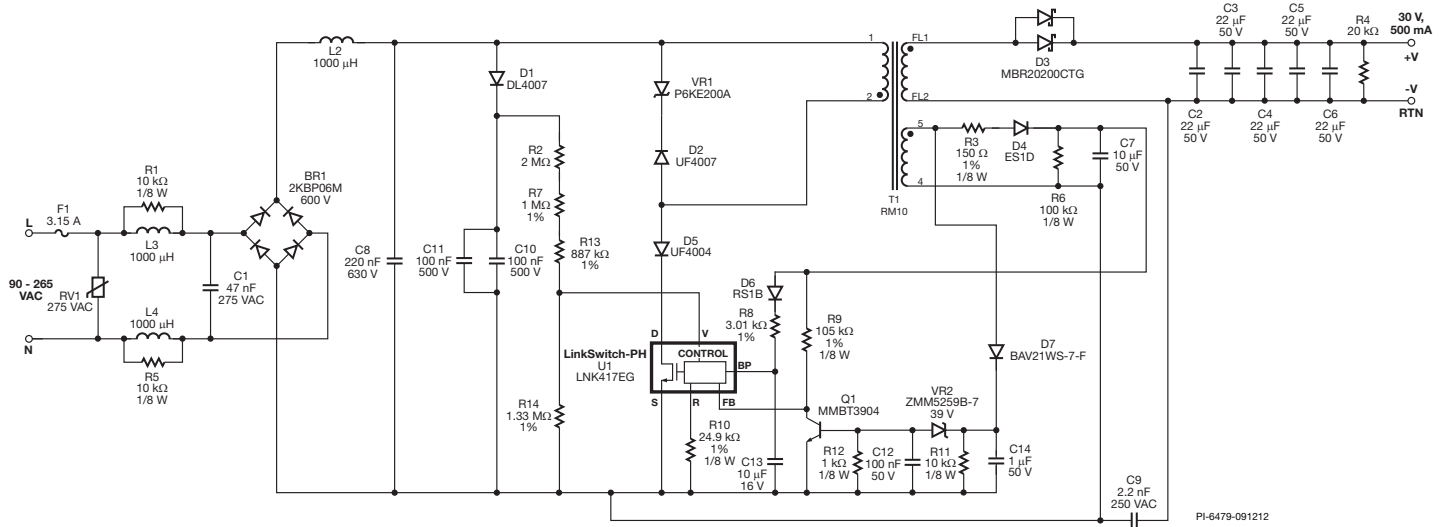
15 W, 30 V, 500 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, LAMP POWER SUPPLY



Tube Replacement Designs

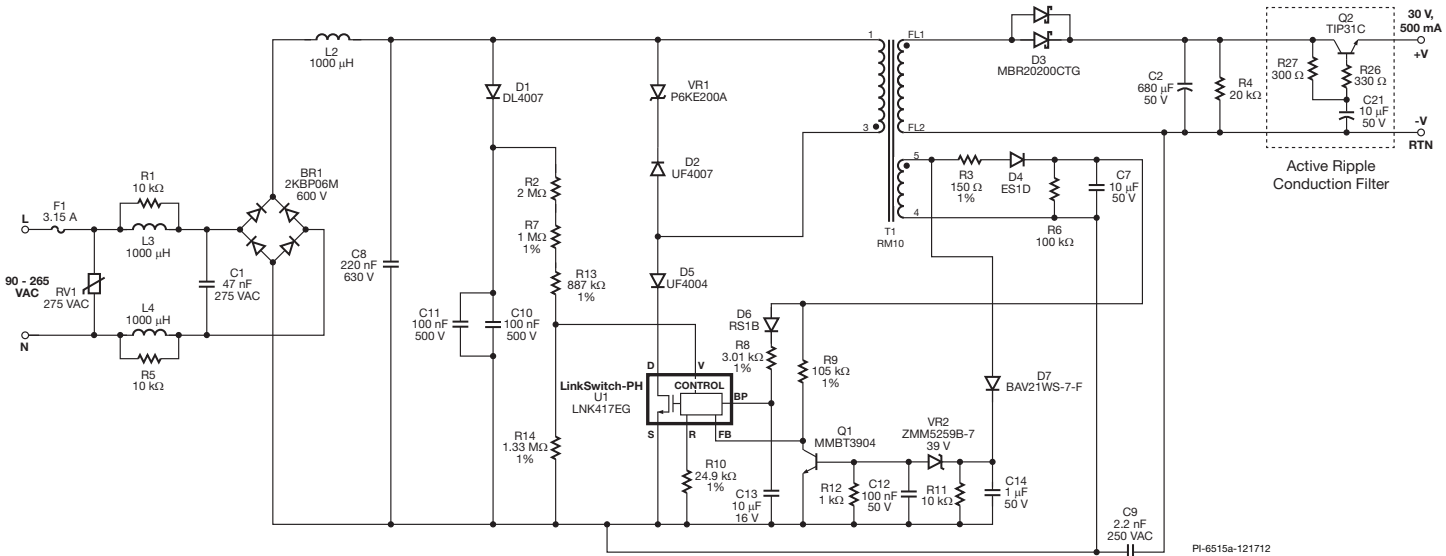
LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (DER-284)

15 W, 30 V, 500 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, BALLAST POWER SUPPLY



LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (DER-288)

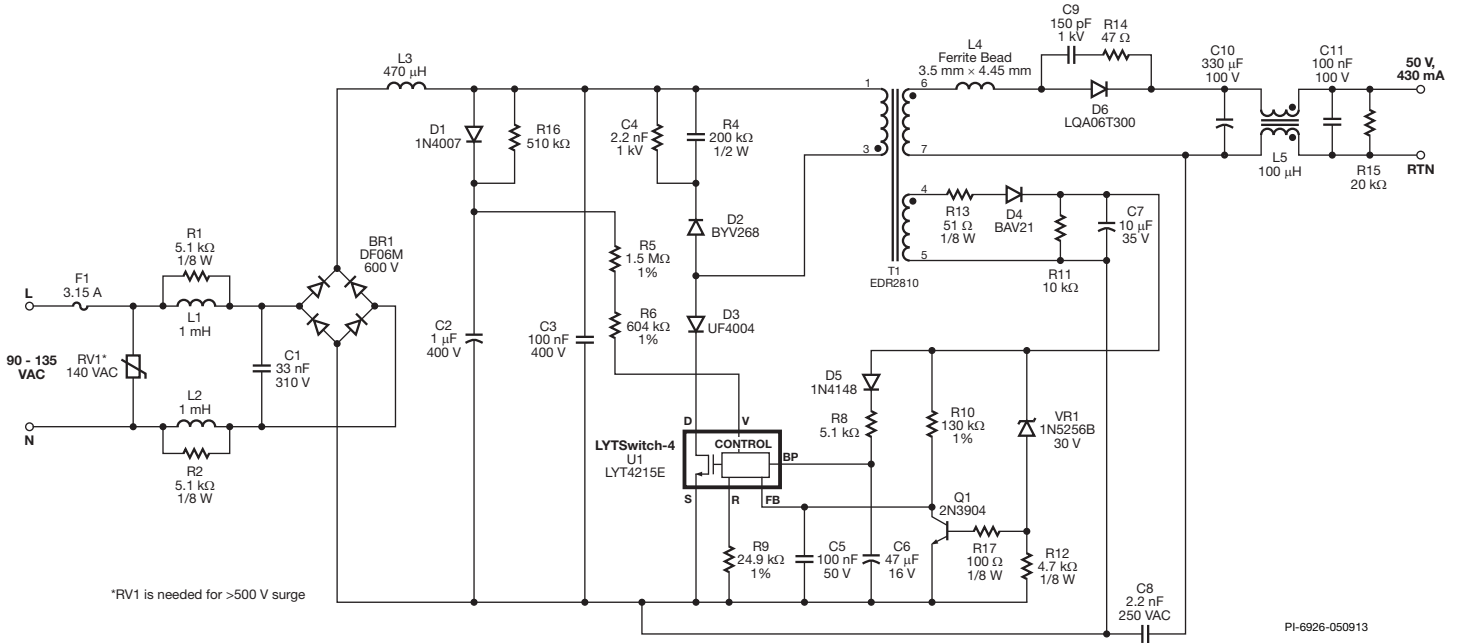
15 W, 30 V, 500 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, BALLAST POWER SUPPLY



Tube Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, Isolated LED Driver (DER-338)

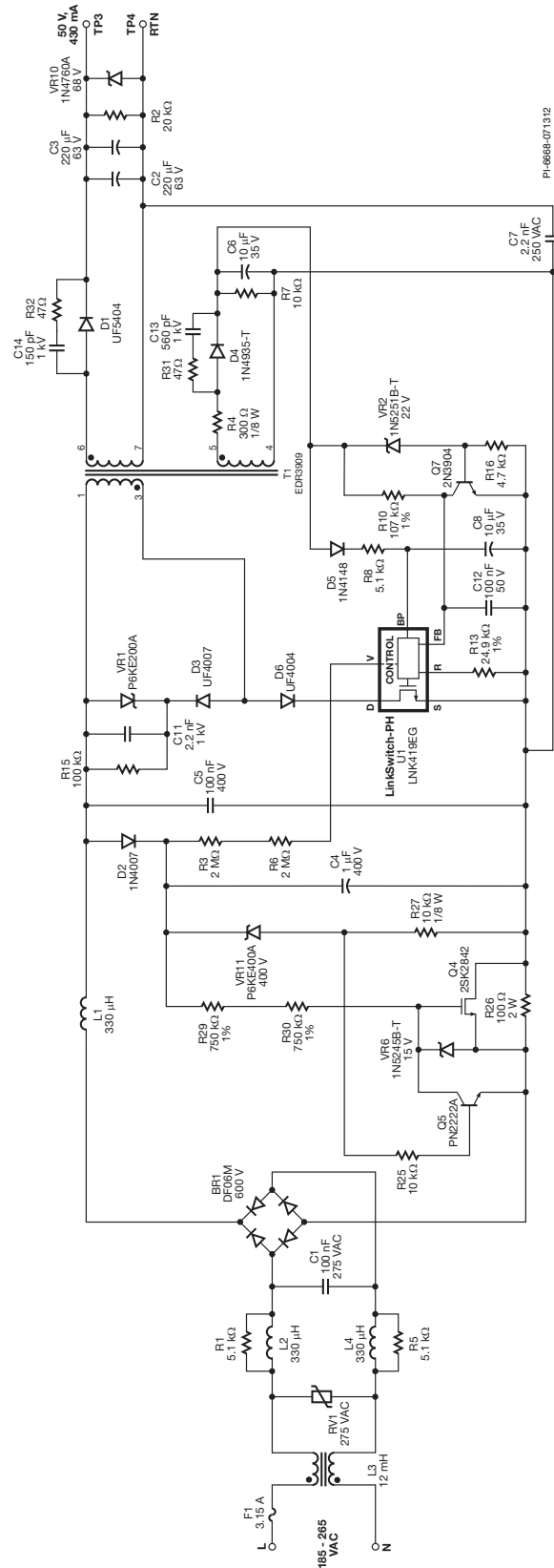
23 W, 50 V, 430 mA OUTPUT, 90 – 135 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, T8 POWER SUPPLY



Tube Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (DER-318)

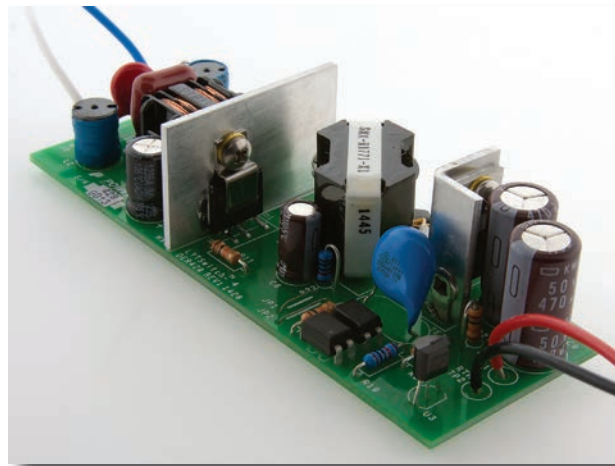
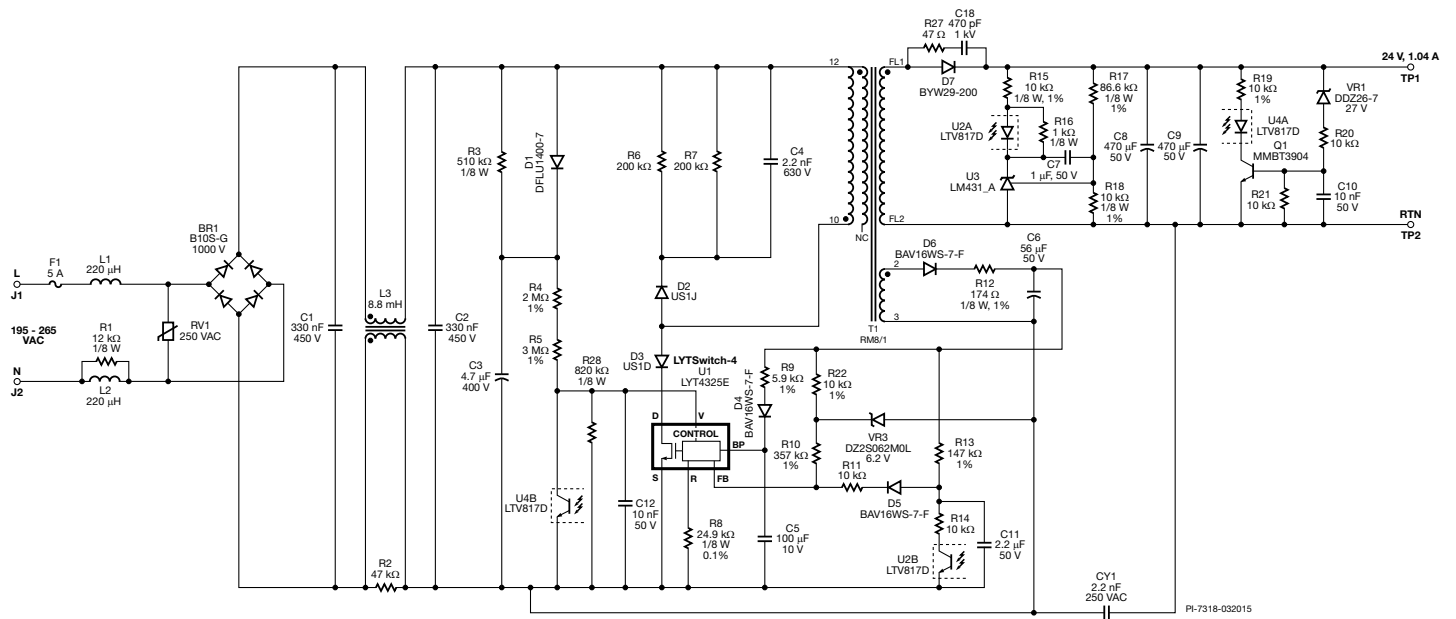
23 W, 50 V, 430 mA OUTPUT, 185 – 265 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, T8 POWER SUPPLY



Tube Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, CV/CC LED Driver (DER-429)

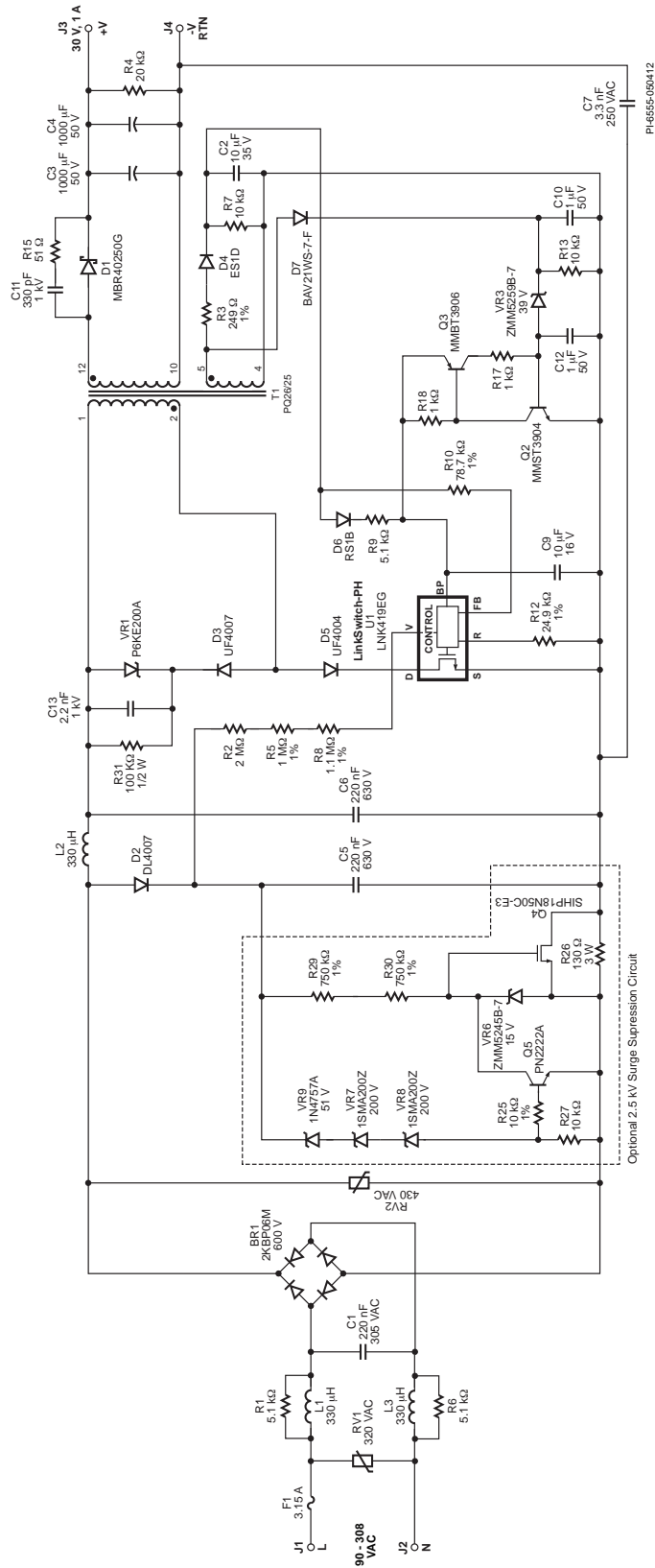
25 W, 24 V, 1.04 A OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, ISOLATED FLYBACK, BALLAST POWER SUPPLY



Tube Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (DER-286)

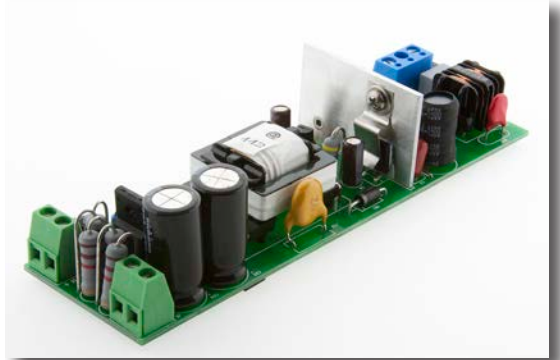
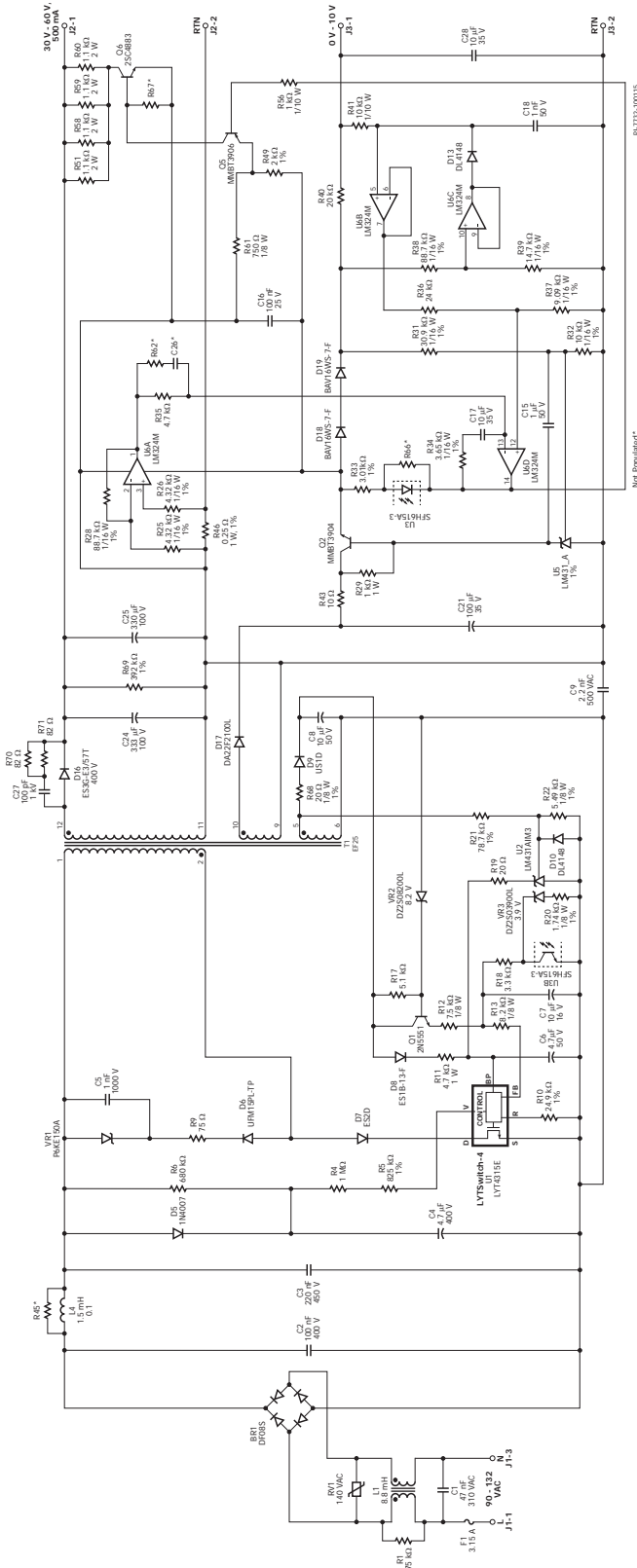
30 W, 30 V, 1 A OUTPUT, 90 – 308 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, BALLAST POWER SUPPLY



Tube Replacement Designs

LYTSwitch-4 – Wide Output Voltage Range, Single-Stage Power Factor, LED Driver (DER-442)

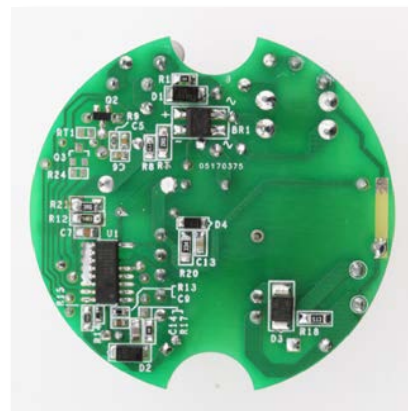
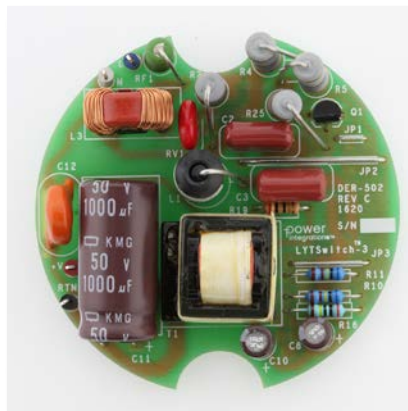
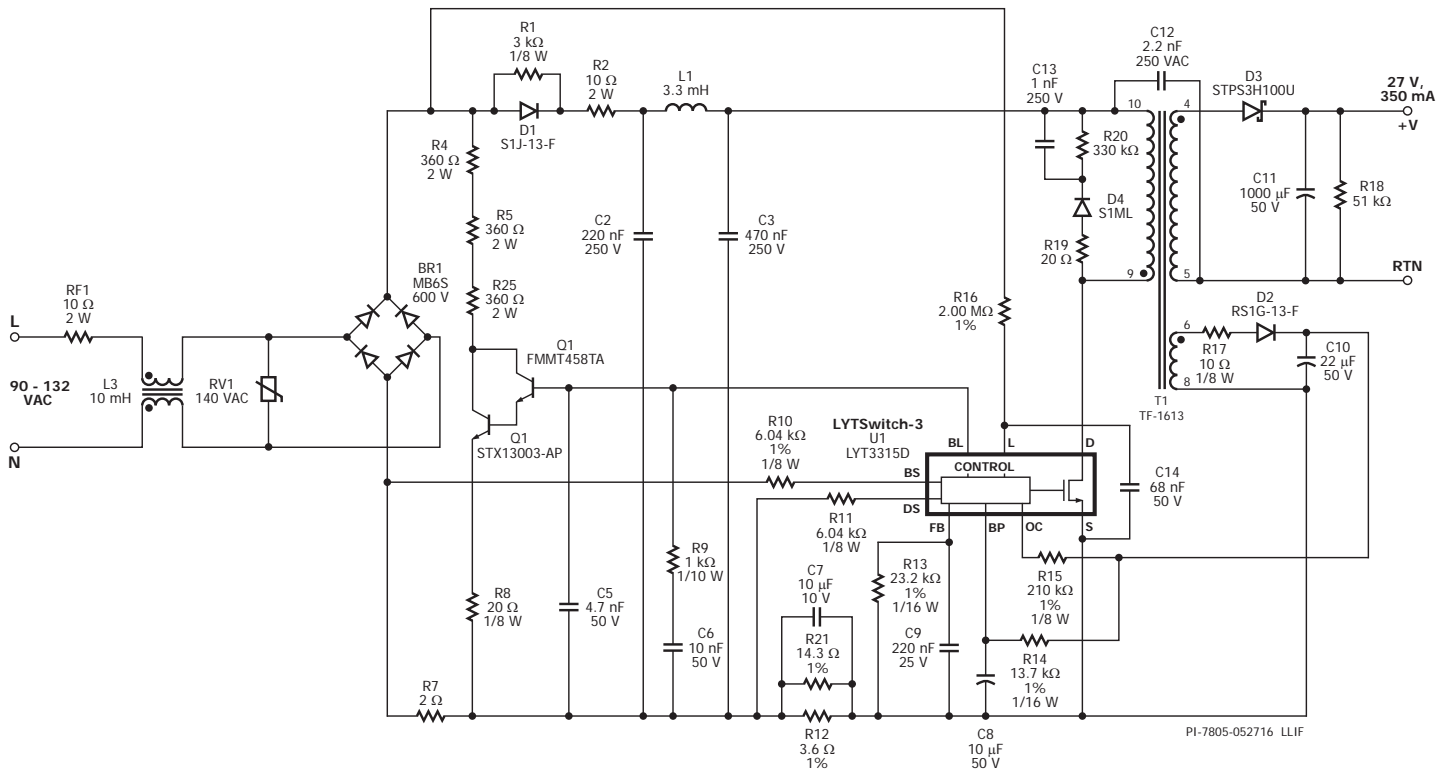
30 W, 30 V – 60 V, 0.50 A OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, ISOLATED FLYBACK, BALLAST POWER SUPPLY



Down Light Designs

LYTSwitch-3 – High-Efficiency, Accurate, Constant Current, LED Driver (DER-502)

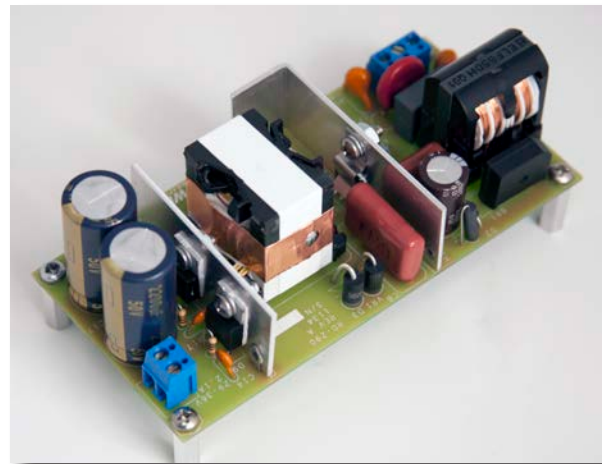
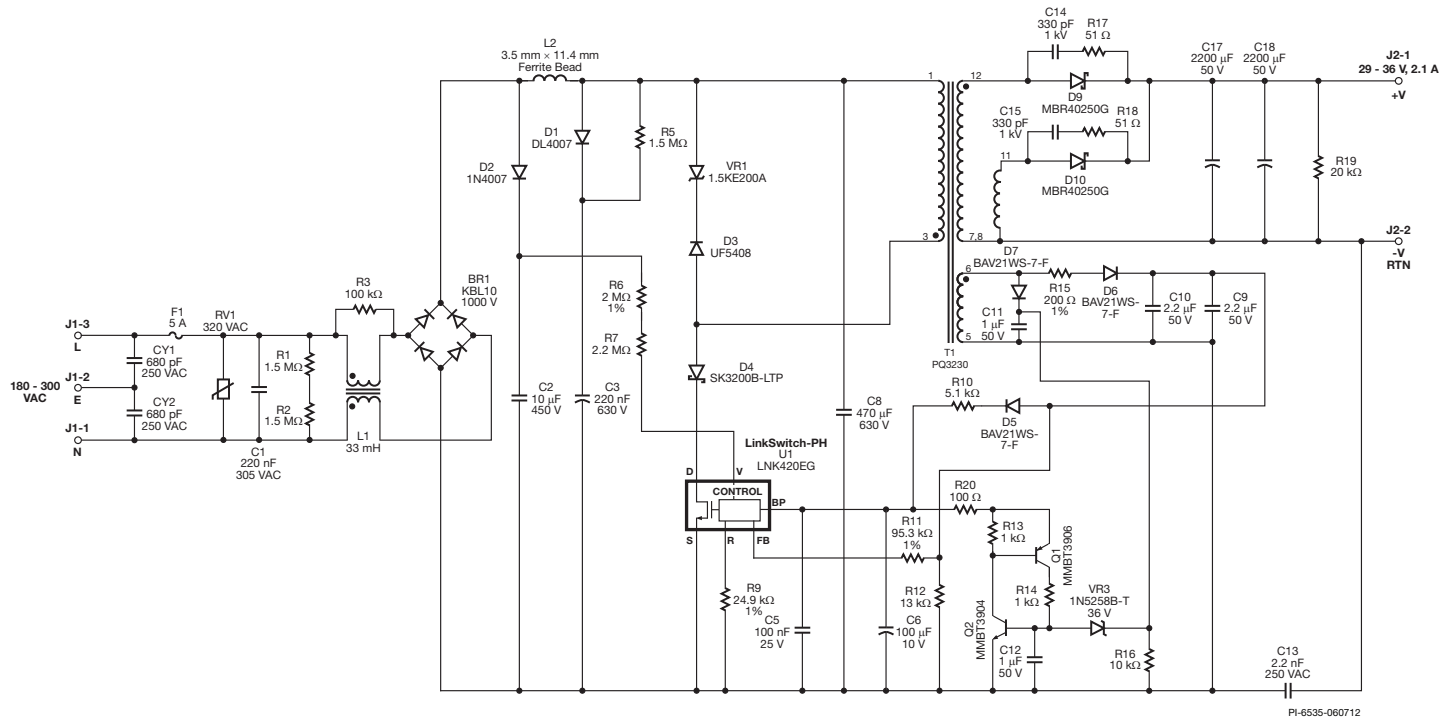
9.5 W, 27 V, 350 mA OUTPUT, 90 – 132 VAC INPUT, ISOLATED FLYBACK, DOWN LIGHT POWER SUPPLY



High Power LED Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (RDK-290)

75 W, 29 – 36 V, 2.1 A, 180 – 300 VAC INPUT, SINGLE-STAGE PFC, FLYBACK, STREET LIGHT POWER SUPPLY

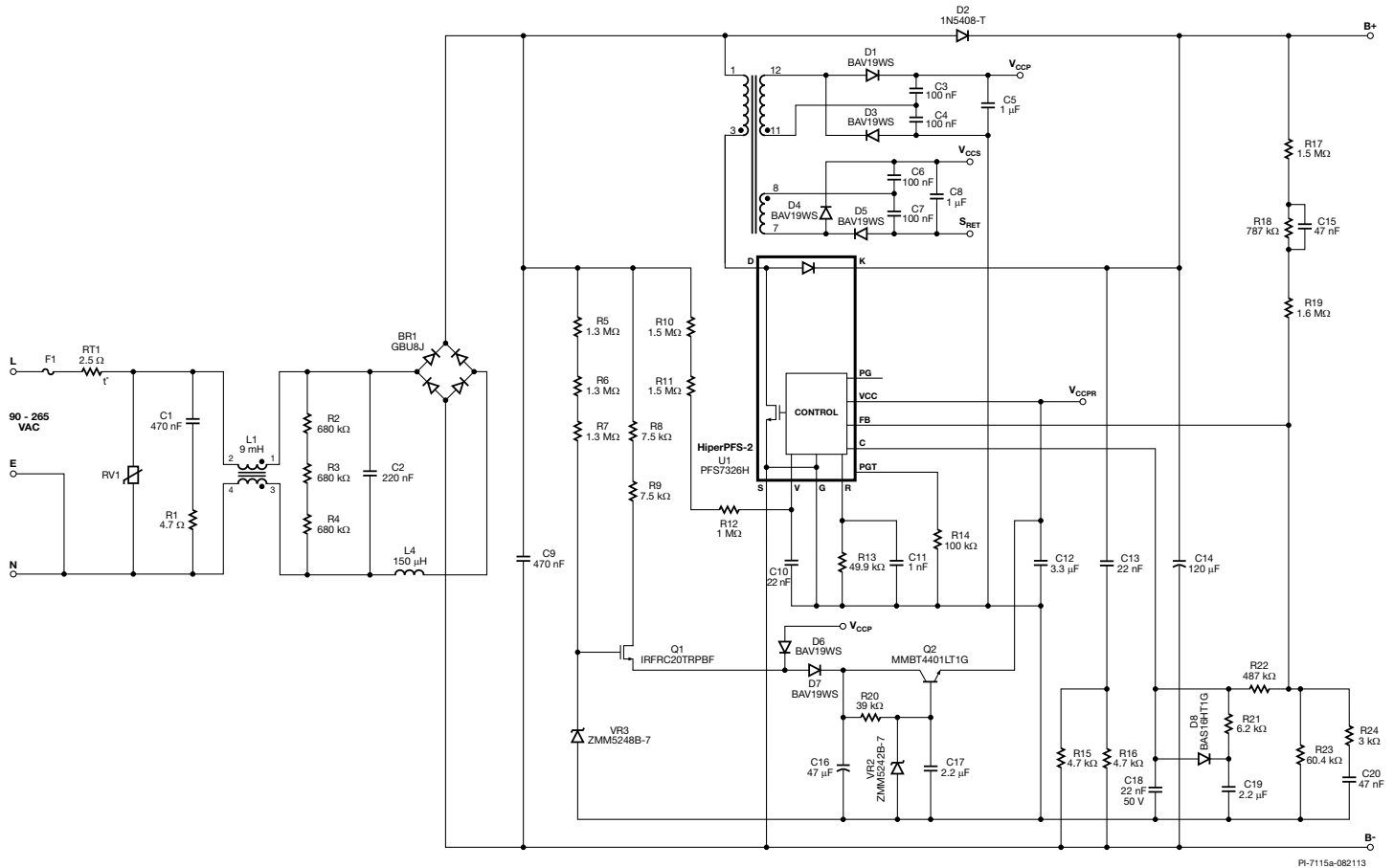


High Power LED Designs

HiperLCS – High-Efficiency, High Power Factor, LED Driver (RDK-382)

150 W, 43 V, 3.5 A OUTPUT, 90 – 265 VAC INPUT, INTEGRATED PFC AND LLC LED STREET LIGHT POWER SUPPLY

PFC STAGE

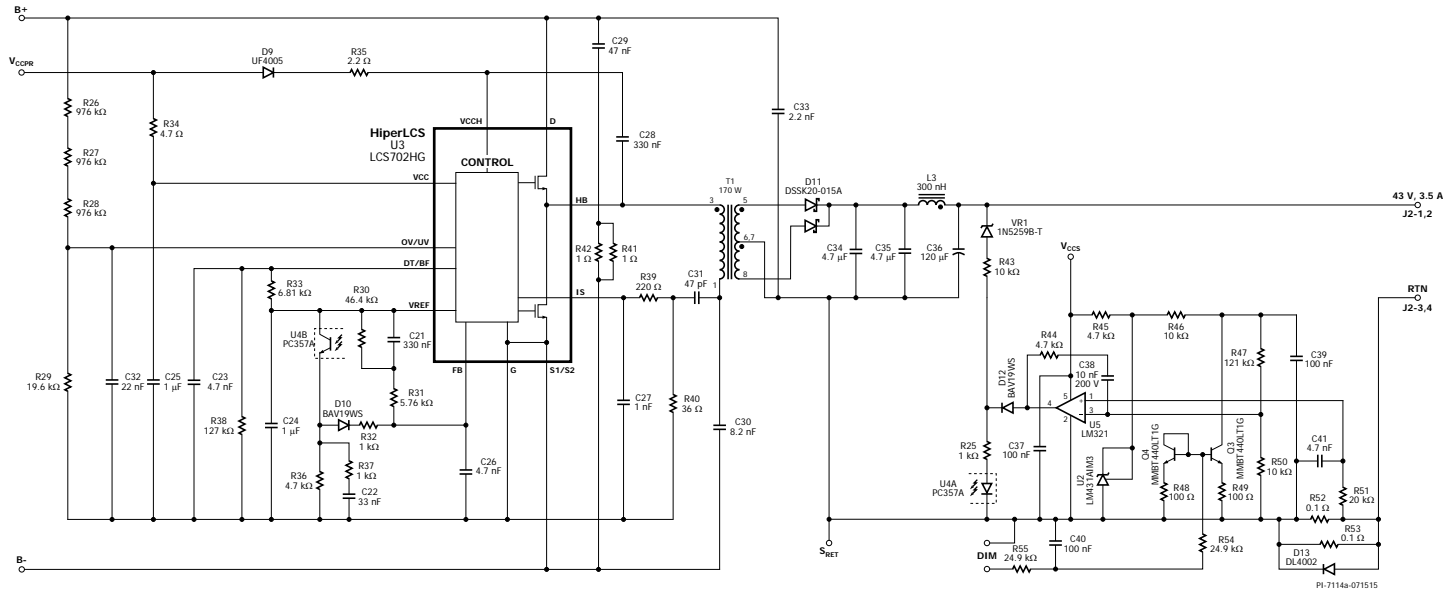


PH-7115a-082113

HiperLCS – High-Efficiency, High Power Factor, LED Driver (RDK-382)

150 W, 43 V, 3.5 A OUTPUT, 90 – 265 VAC INPUT, INTEGRATED PFC AND LLC LED STREET LIGHT POWER SUPPLY

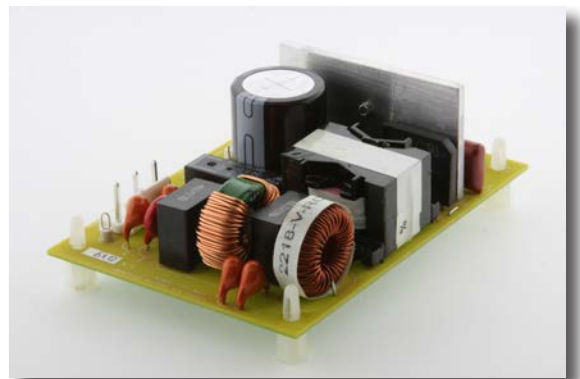
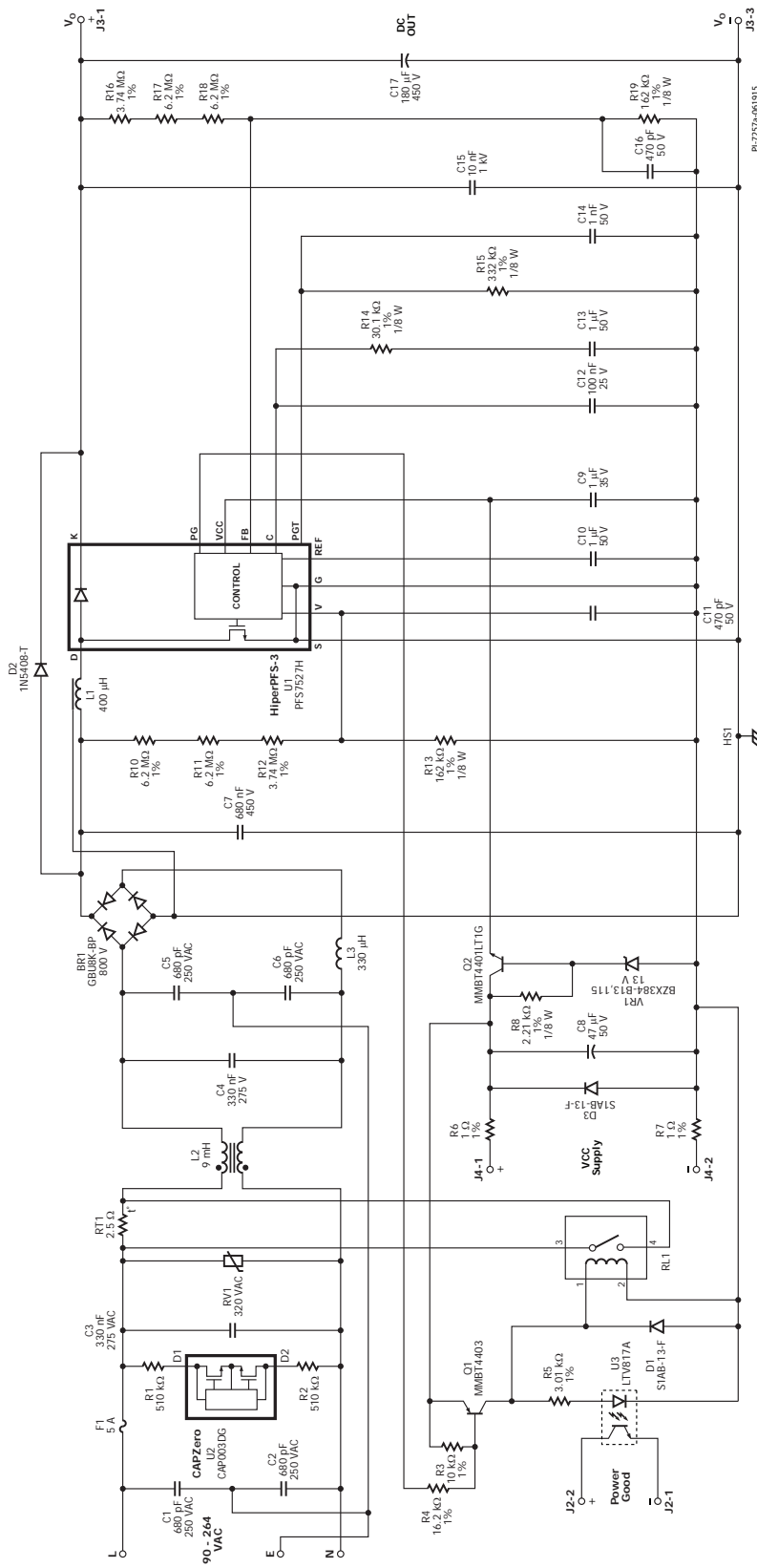
LLC STAGE



High Power LED Designs

HiperPFS-3 – PFC Front-End for LED Street Light Designs (RDK-394)

275 W, 385 VDC, 710 mA OUTPUT, 90 – 264 VAC INPUT, INTEGRATED PFC FRONT-END POWER SUPPLY



Non-Isolated IC Product Tables

LYTSwitch-0 – Lowest Component Count, Off-Line Switcher IC for Non-Isolated LED Lighting Applications¹

Product ⁶	PF ^{4,5}	230 VAC ±15%		85-308 VAC	
		MDCM ² (mA)	CCM ³ (mA)	MDCM ² (mA)	CCM ³ (mA)
LYT0002D/P	High	45	65	30	40
	Low	63	80	63	80
LYT0004D/P	High	85	110	50	70
	Low	98	139	98	139
LYT0005D/P	High	100	140	60	90
	Low	120	170	120	170
LYT0006D/P	High	165	220	100	140
	Low	200	280	200	280

Additional Features:

- High power factor meeting EU and USA requirements
- Very low component count
- Frequency jitter reduces EMI
- No bias winding or transformer required

Notes:

1. Typical output current in a non-isolated buck converter. See Key Applications Considerations section in data sheet for more information.
2. MDCM – mostly discontinuous mode.
3. CCM – continuous conduction mode.
4. PF high: >0.7 @ 120 VAC and >0.5 @ 230 VAC.
5. PF low: for non-PF application where $C_{IN} > 5 \mu\text{F}$ minimum.
6. Packages: P: PDIP-8B, D: SO-8C.

LYTSwitch-1 – Single-Stage LED Driver IC with Combined PFC and Constant Current Output for Buck Topology¹

Product ³	Optimized for Smallest Components	
	$V_{OUT} \leq 30 \text{ V}^2$	$45 \text{ V} \leq V_{OUT} \leq 55 \text{ V}^2$
LYT1402D	4.0 W	8.0 W
LYT1403D	7.5 W	15 W
LYT1404D	11 W	22 W
Product ³	Optimized for Lowest THD	
	$V_{OUT} \leq 30 \text{ V}^2$	$V_{OUT} \geq 55 \text{ V}^2$
LYT1602D	4.0 W	8.0 W
LYT1603D	7.5 W	15 W
LYT1604D	11 W	22 W

Additional Features:

- CC regulation better than ±5%
- Power factor >0.9
- High efficiency >93%
- Critical Conduction Mode (CrM) buck, low EMI
- Excellent line noise and transient rejection

Notes:

1. Maximum practical continuous power in an open frame design with adequate heat sinking, measured at 50°C ambient.
2. Output power scales linearly if VOUT falls in between the specified voltages.
3. Package: SO-8 (D Package).

LYTSwitch-3 – Single-Stage LED Driver IC with Combined PFC and Constant Current Output for Outstanding TRIAC Dimming in Isolated and Non-Isolated Topologies

Product ³	Output Power ¹ (W)
	85-132 VAC or 185-265 VAC
LYT33x4D ²	5.7
LYT33x5D	8.8
LYT33x6D	12.6
LYT33x8D	20.4

Additional Features:

- Less than ±3% CC regulation over line and load
- Power Factor >0.9
- Ensures monotonic VA reduction with TRIAC phase angle
- Low THD, 15% typical for dimmable bulbs, as low as 7% in optimized designs

Notes:

1. Maximum practical continuous power in an open frame design with adequate heat sinking, measured at 50°C ambient (see Key Applications Considerations for more information).
2. "x" digit describes $V_{DS(on)(MAX)}$ of the integrated switching MOSFET, 650 V = 1, 725 V = 2.
3. Package: D: SO-16B.

Non-Isolated IC Product Tables

LYTSwitch-4 – Single-Stage Accurate Primary-Side Constant Current (CC) Controller with PFC for Applications with TRIAC Dimming and Non-Dimming Options^{1,2}

Product ⁷	Minimum Output Power ³ (W)	Maximum Output Power ⁴ (W)
LYT4x11E ⁵	2.5	12
LYT4x12E	2.5	15
LYT4x13E	3.8	18
LYT4x14E	4.5	22
LYT4x15E	5.5	25
LYT4x16E	6.8	35
LYT4x17E	8.0	50
LYT4x18E	18	78

Product ⁷	Minimum Output Power ³ (W)	Maximum Output Power ⁴ (W)
LYT4x21E ⁶	6	12
LYT4x22E	6	15
LYT4x23E	8	18
LYT4x24E	9	22
LYT4x25E	11	25
LYT4x26E	14	35
LYT4x27E	19	50
LYT4x28E	33	78

Additional Features:

- Better than $\pm 5\%$ CC regulation
- TRIAC dimmable to less than 5% output
- Fast start-up
 - <250 ms at full brightness
 - <1s at 10% brightness
- High power factor >0.9
- Easily meets EN61000-3-2
 - Less than 10% THD in optimized designs
- Up to 92% efficient
- 132 kHz switching frequency for small magnetics

Notes:

1. Performance for typical design. See Applications Note.
2. Continuous power in open-frame design with adequate heat sinking; device local ambient of 70 °C. Power level calculated assuming a typical LED string voltage and efficiency >80%.
3. Minimum output power requires $C_{BP} = 47 \mu\text{F}$.
4. Maximum output power requires $C_{BP} = 4.7 \mu\text{F}$.
5. LYT4311 $C_{BP} = 47 \mu\text{F}$, LYT4211 $C_{BP} = 4.7 \mu\text{F}$.
6. LYT4321 $C_{BP} = 47 \mu\text{F}$, LYT4221 $C_{BP} = 4.7 \mu\text{F}$.
7. Package: eSIP-7C.

LYTSwitch-5 – Single-Stage LED Driver IC with Combined PFC and Constant Current Output in Isolated and Non-Isolated Topologies

Product ²	Output Power ¹ (W)
	90-308 VAC
LYT5225D	9
LYT5216D, LYT5226D	16
LYT5218D, LYT5228D	25

Notes:

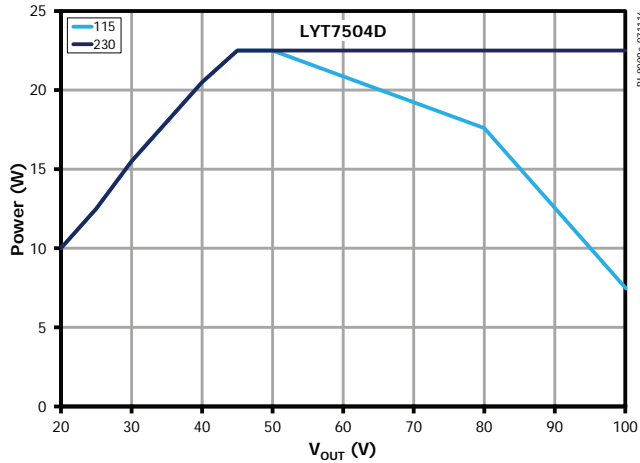
1. Maximum practical continuous power in an open frame design with adequate heat sinking, measured at 50 °C ambient (see Key Applications Considerations section in data sheet for more information).
2. Package: D: SO-16B.

Additional Features:

- Accurate CC, better than $\pm 3\%$
- Power Factor >0.9
- Low THD, <10% with typical input and output conditions
- >90% efficient in optimized designs
- High switching frequency and DCM allow compact magnetics
- Supports buck, buck-boost, tapped-buck, boost, isolated and non-isolated flyback topologies
- 2 MOSFET voltage options and 3 power levels for optimum device selection
- No electrolytic bulk capacitors or optoisolators for increased lifetime
- Comprehensive protection features
 - Input and output overvoltage
 - Open-loop protection
- Advanced thermal control
 - Thermal foldback allows output light delivery at abnormally high ambient temperatures
 - Hysteretic shutdown provides protection during fault conditions

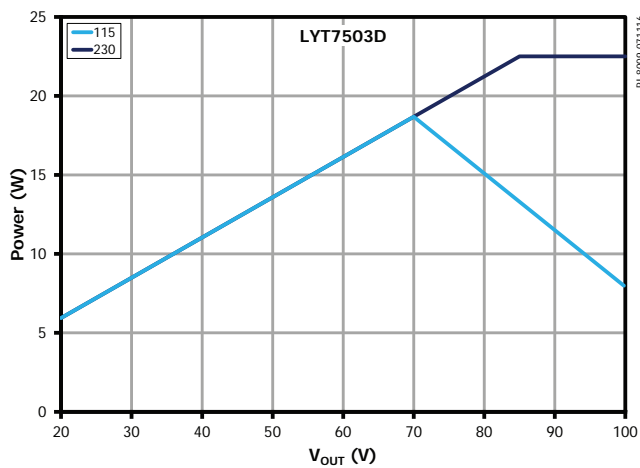
Non-Isolated IC Product Tables

LYTSwitch-7 – Single-Stage LED Driver IC with Combined PFC and Constant Current Output for Non-Isolated Buck Topologies



Additional Features:

- $\pm 3\%$ CC regulation in single line input voltage applications
- Power factor >0.9
- High efficiency >85%
- Robust 725 V MOSFET for increased line voltage surge resistance
- Critical Conduction Mode (CrM) buck
- Low EMI
- Excellent line noise and transient rejection
- Comprehensive protection features with auto-restart
 - Input and output overvoltage protection (OVP)
 - Output short-circuit protection
 - Open-loop protection
- Advanced thermal control
 - Thermal foldback ensures that light continues to be delivered at elevated temperatures
 - Over-temperature shutdown provides protection during fault conditions



Notes:

1. Maximum practical continuous power in an open frame design with adequate heat sinking, measured at 50°C ambient.
2. Output power graph based on typical values for inductance, $I_{LIMIT(AR)}$, $T_{ON(MAX)}$ and package thermal limits.

Non-Isolated Reference Designs

Product Family	AC Input Voltage (V)	Output Power (W)	Output Current (A)	TRIAC Dimming	Power Factor	Efficiency (%)	Topology	Document	RDK	Page Number
TRIAC Dimmable, Bulb Replacement Designs										
LYTSwitch-3	185-256	4.5	0.15	✓	>0.70	84	Buck	DER-498		42
LYTSwitch-7	90-132	4.68	0.090	✓	>0.93	85	Buck	DER-540		43
LYTSwitch-4	185-265	4.9	0.175	✓	>0.70	75	Tapped-Buck	DER-369		**
LYTSwitch-4	186-265	5.76	0.12	✓	>0.90	83	Buck-Boost	DER-406		44
LYTSwitch-4	90-132	5.76	0.12	✓	>0.96	83	Buck-Boost	DER-407		45
LinkSwitch-PH	185-264	6	0.26	✓	>0.90	78	Flyback	DER-269		**
LYTSwitch-7	90-132	6.5	0.125	✓	>0.90	86	Buck	DER-539		46
LinkSwitch-PH	90-265	7	0.38	✓	>0.90	85	Flyback	DER-277		**
LYTSwitch-3	90-132	7	0.165	✓	>0.90	87	Buck	DER-511		47
LinkSwitch-PH	176-265	7.4	0.112	✓	>0.90	87	Flyback	DER-296		**
LYTSwitch-4	90-132	7.5	0.50	✓	>0.95	85	Tapped-Buck	DER-360		48
LYTSwitch-7	180-265	7.5	0.150	✓	>0.87	85	Buck	DER-558		49
LYTSwitch-7	90-300	7.5	0.125	✓	>0.90	85	Buck	DER-561		50
LYTSwitch-3	195-265	7.75	0.055	✓	>0.90	85	Buck-Boost	DER-486		51
LYTSwitch-3	195-265	8	0.115	✓	>0.90	85	Buck-Boost	DER-524		52
LinkSwitch-PH	198-265	8	0.38	✓	>0.86	74	Flyback	DER-264		**
LYTSwitch-4	90-132	8	0.23	✓	>0.90	85	Buck	DER-359		53
LYTSwitch-4	195-265	8.3	0.115	✓	>0.90	84	Buck-Boost	DER-404		54
LYTSwitch-4	195-265	8.5	0.12	✓	>0.90	84	Buck-Boost	DER-409		55
LYTSwitch-4	190-265	8.8	0.155	✓	>0.91	86	Buck	DER-370		**
LYTSwitch-7	195-265	10	0.12	✓	>0.90	87	Buck	DER-568		56
LYTSwitch-3	90-132	10	0.260	✓	>0.9	85	Buck-Boost	DER-500		57
LYTSwitch-3	90-132	11	0.155	✓	>0.9	87	Buck-Boost	DER-510		58
LYTSwitch-4	190-265	12	0.10	✓	>0.90	84	Buck-Boost	DER-412		59
LYTSwitch-4	90-132	12	0.17	✓	>0.95	88	Buck-Boost	DER-357		60
LYTSwitch-4	90-132	14	0.35	✓	>0.95	85	Buck	DER-364		61
LYTSwitch-4	195-265	14.35	0.35	✓	>0.95	86	Tapped-Buck	DER-395		62
LinkSwitch-PH	180-265	15	0.5	✓	>0.90	84	Flyback	DER-281		**
LinkSwitch-PH	185-265	15.3	0.425	✓	>0.90	87	Flyback	DER-314		**
LYTSwitch-3	90-132	18	0.26	✓	>0.90	85	Buck-Boost	DER-512		63
LYTSwitch-7	180-265	18.5	0.265	✓	>0.90	85	Buck	DER-563		64
LYTSwitch-4	90-265	20	0.210	✓	>0.90	85	Buck-Boost	DER-445		65
Non-Dimmable Bulb Replacement Designs										
LYTSwitch-1	180-265	4.5	0.052		>0.92	89	Buck	DER-542		66
LYTSwitch-1	90-300	4.5	0.096		>0.85	86	Buck	RDR-465	RDK-465	66
LYTSwitch-0	90-132	5.1	0.135		>0.70	85	Buck	DER-387		67
LYTSwitch-0	90-265	6	0.35		>0.75	91	Buck	RDR-355	RDK-355	68
LYTSwitch-0	190-265	7	0.082		>0.50	91	Buck	RDR-378	RDK-378	69
LinkSwitch-PH	90-265	12	0.33		>0.97	85	Buck-Boost	DER-273		**
LinkSwitch-PH	140-280	12.8	0.80		>0.95	85	Tapped-Buck	DER-344		70
LinkSwitch-PH	90-132	14.5	0.48		>0.98	89	Buck	DER-341		**
LYTSwitch-5	195-265	18	0.048		>0.90	90	Boost	DER-543		71

*Analog dimming, **See www.power.com

Non-Isolated Reference Designs

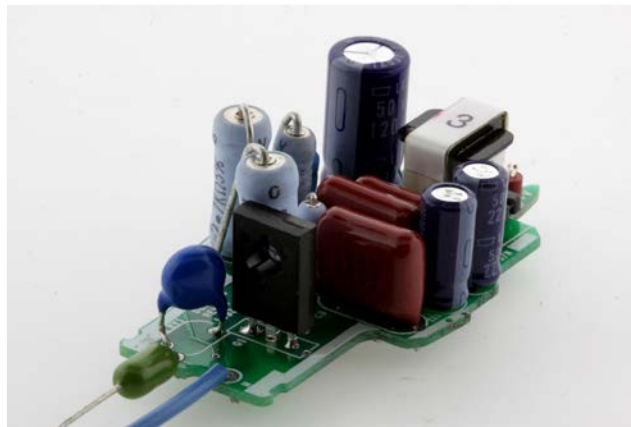
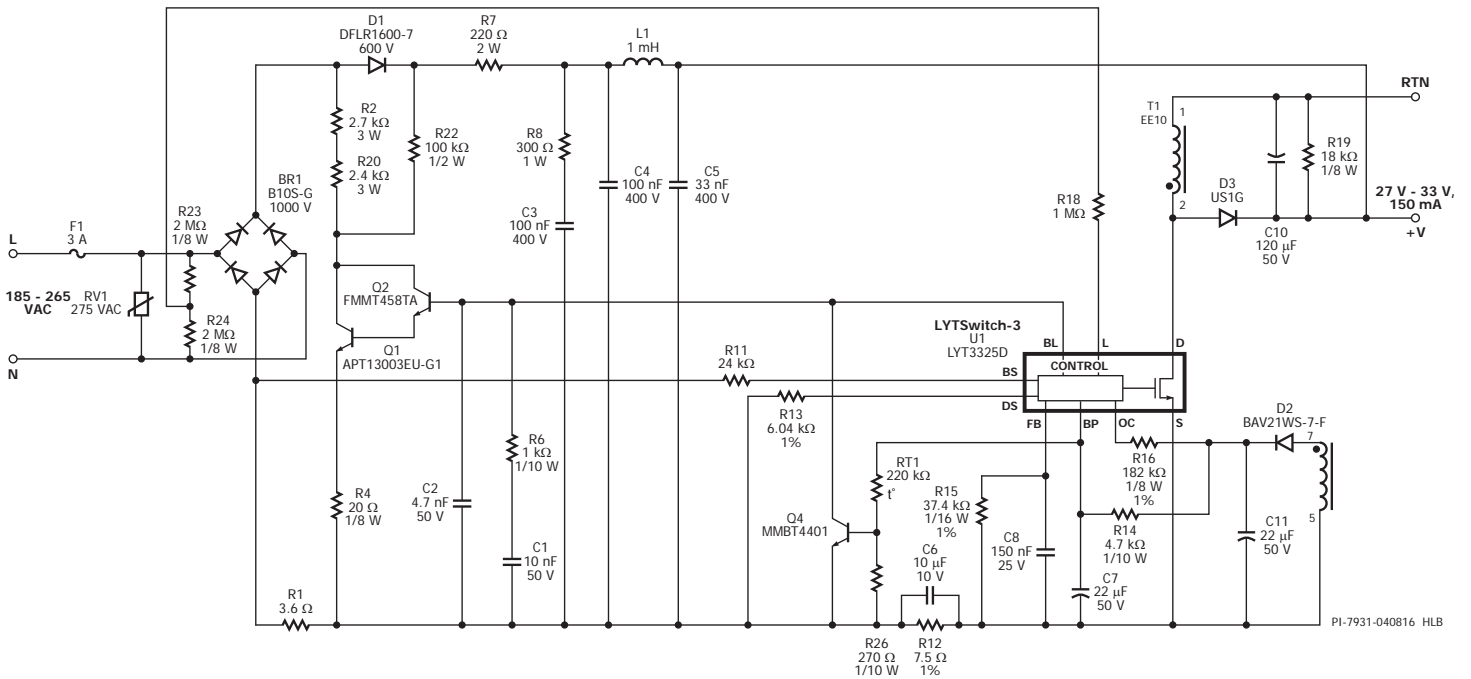
Product Family	AC Input Voltage (V)	Output Power (W)	Output Current (A)	TRIAC Dimming	Power Factor	Efficiency (%)	Topology	Document	RDK	Page Number
Tube Replacement Designs										
LinkSwitch-PH	90-265	12	0.33		>0.99	88	Buck	RDR-257	RDK-257	72
LYTSwitch-0	190-265	12	0.135		>0.70	90	Buck	DER-384		72
LYTSwitch-5	90-308	12	0.16		>0.90	89	Buck-Boost	DER-515		73
LYTSwitch-4	95-265	15	0.75		>0.90	89	Buck-Boost	DER-425		74
LYTSwitch-4	95-265	16	0.45		>0.90	87	Tapped-Buck	DER-431		75
LYTSwitch-1	90-132	16.75	0.250		>0.90	90	Buck	DER-541		76
LinkSwitch-PH	90-265	18	0.09		>0.90	90	Buck-Boost	DER-298		**
LYTSwitch-5	90-308	18	0.240		>0.95	90	Buck-Boost	DER-526		77
LYTSwitch-1	190-300	20	0.170		>0.90	90	Buck	DER-548		78
LinkSwitch-PH	90-265	24	0.18		>0.95	92	Buck-Boost	DER-356		79
LinkSwitch-PH	180-265	25	0.25		>0.90	91.35	Buck-Boost	DER-287		79
LYTSwitch-4	195-300	25	0.175		>0.97	90	Buck-Boost	DER-405		80
LinkSwitch-PH	180-265	25	0.35		>0.90	90.55	Buck-Boost	DER-285		**
High Power LED Designs										
LinkSwitch-PH	90-300	40.5	0.75		>0.95	88	Buck	DER-340		81

*Analog dimming, **See www.power.com

TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – Accurate Constant Current, TRIAC Dimmable LED Driver (DER-498)

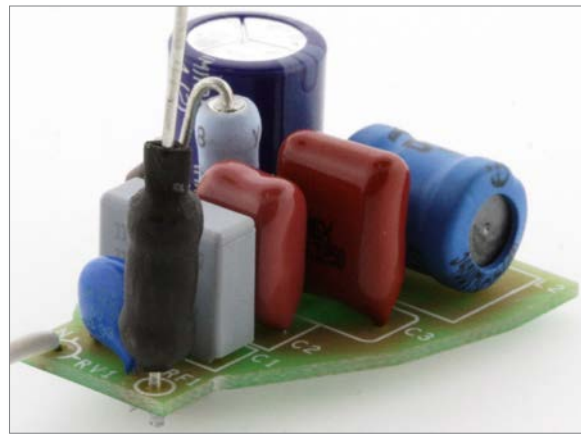
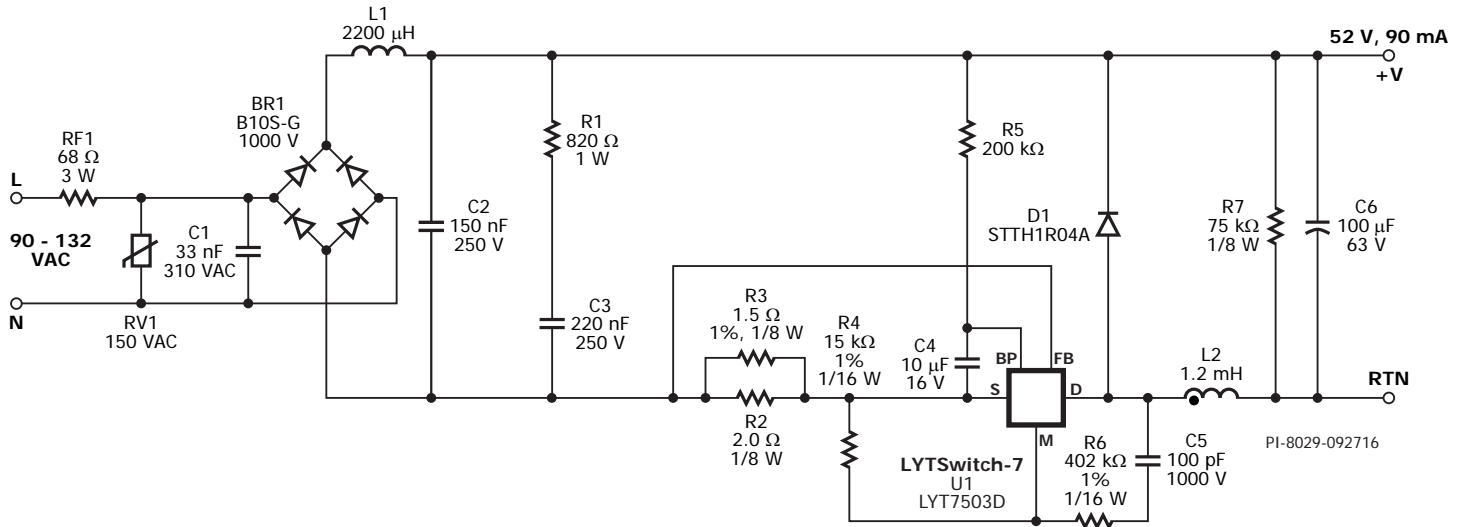
4.5 W, 27 V – 33 V, 0.15 A OUTPUT, 185 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, GU10 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-7 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-540)

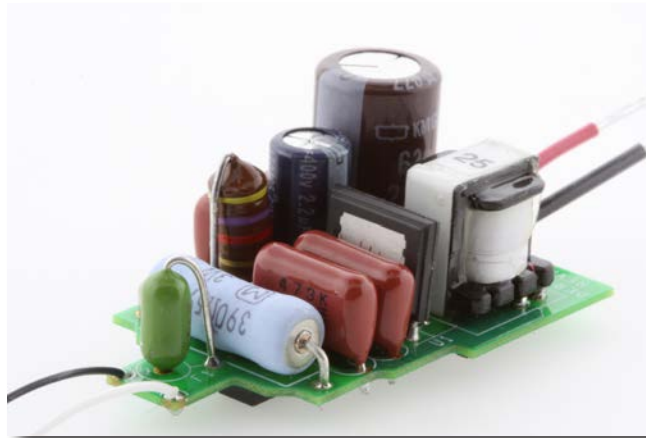
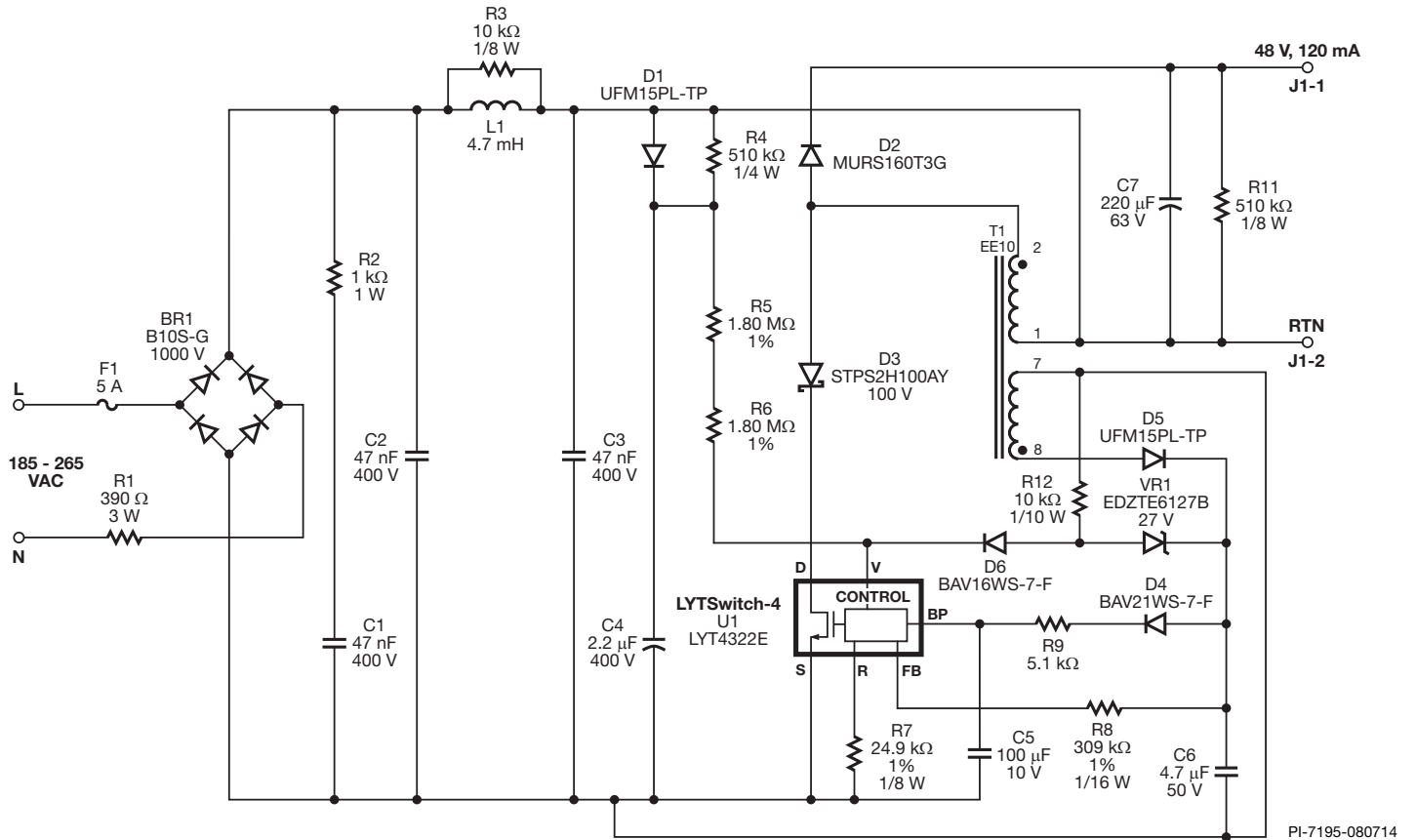
4.68 W, 52 V, 90 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK, CANDELABRA POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-406)

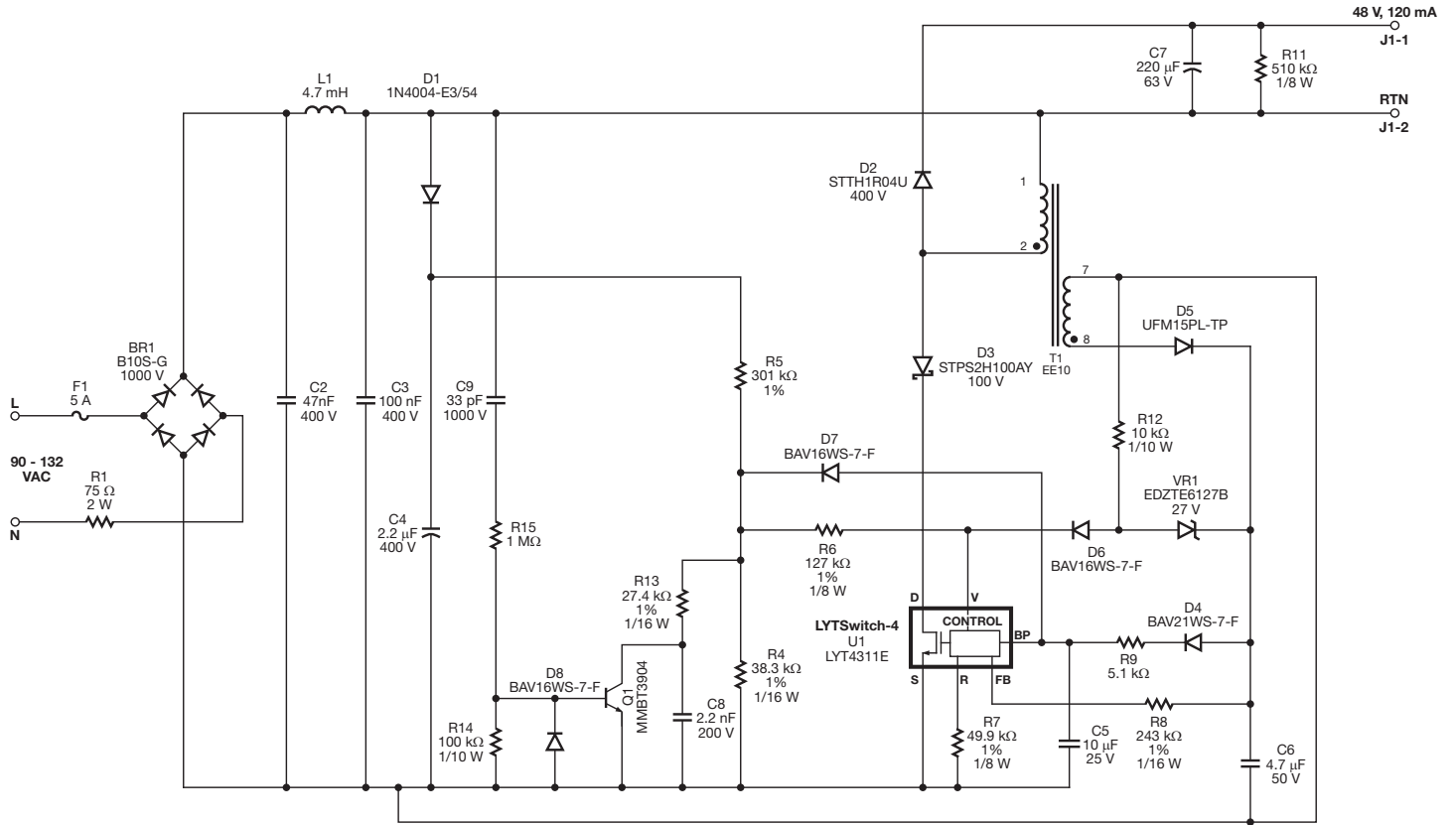
5.76 W, 48 V, 120 mA OUTPUT, 185 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, A19 POWER SUPPLY



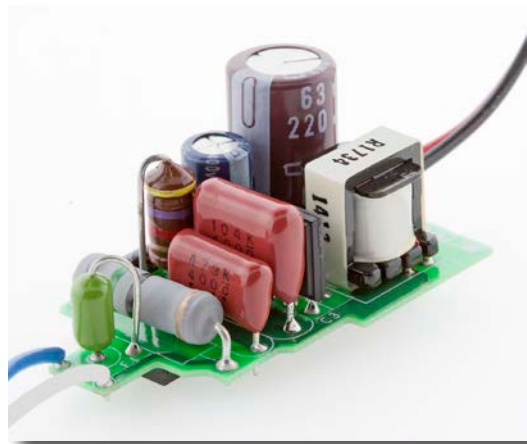
TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-407)

5.76 W, 48 V, 120 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, A19 POWER SUPPLY



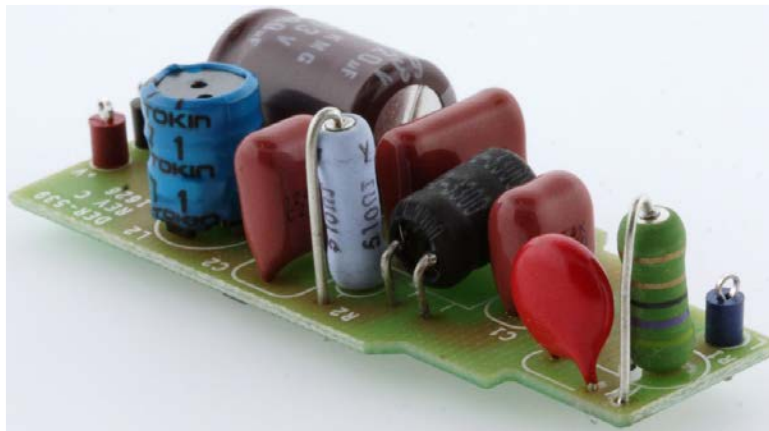
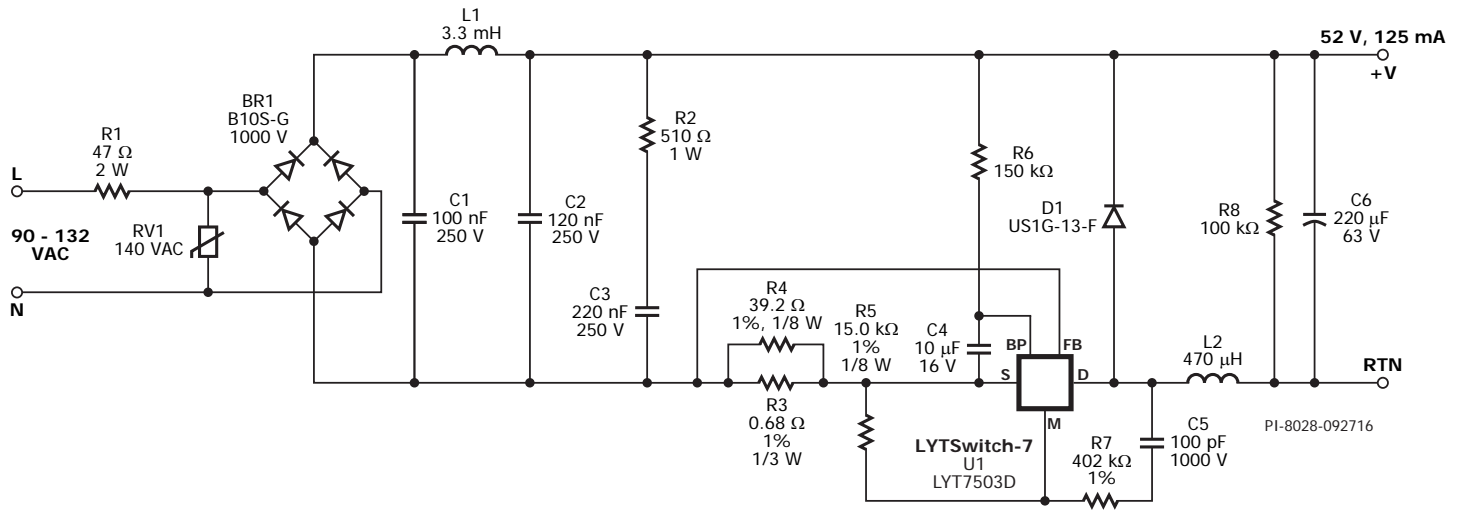
PI-7254-052114



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-7 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-539)

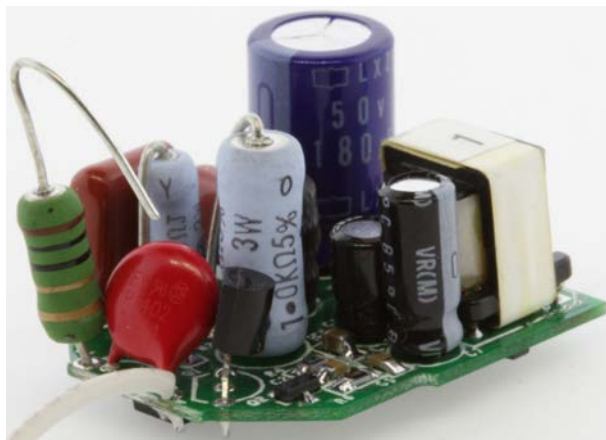
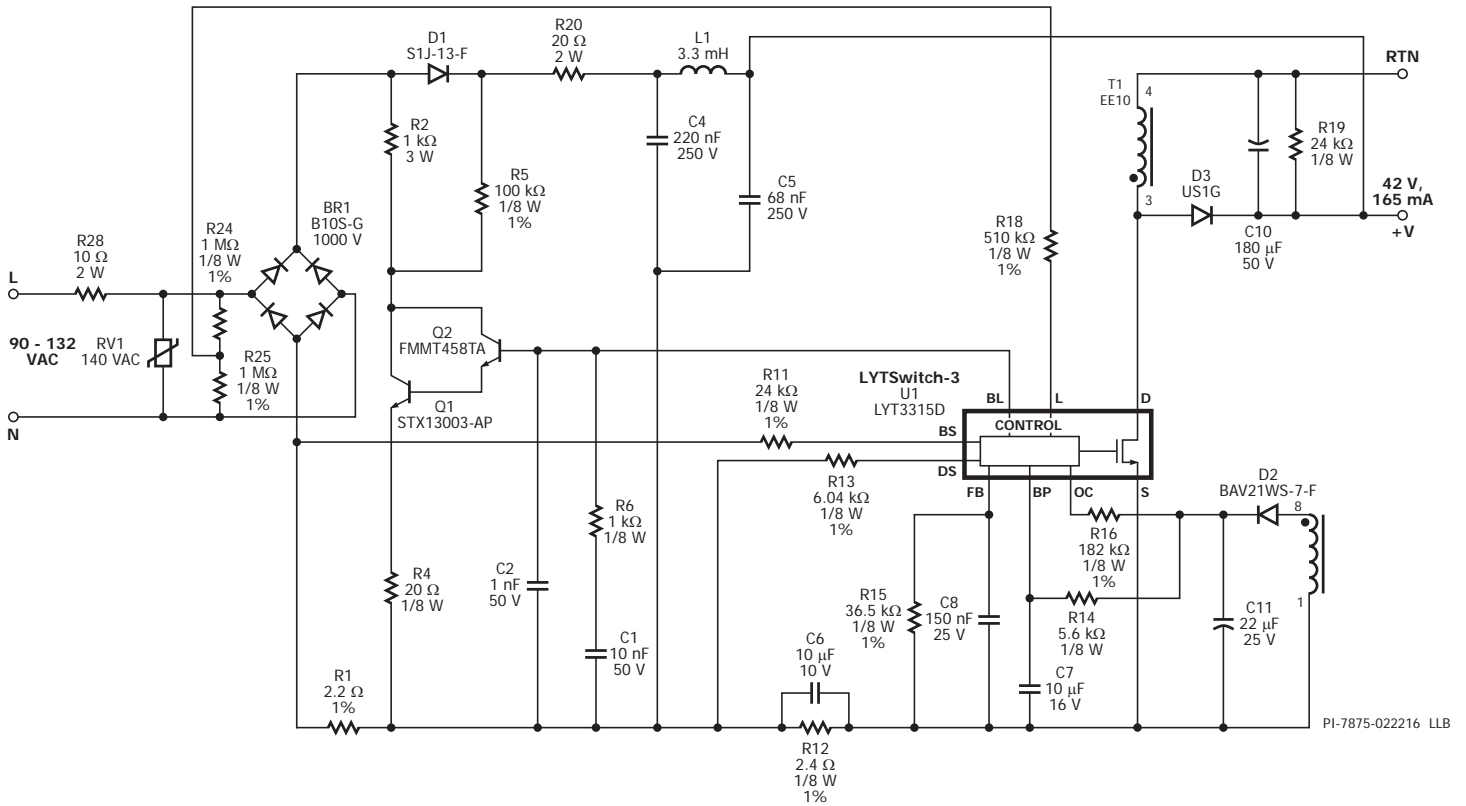
6.5 W, 52 V, 125 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-511)

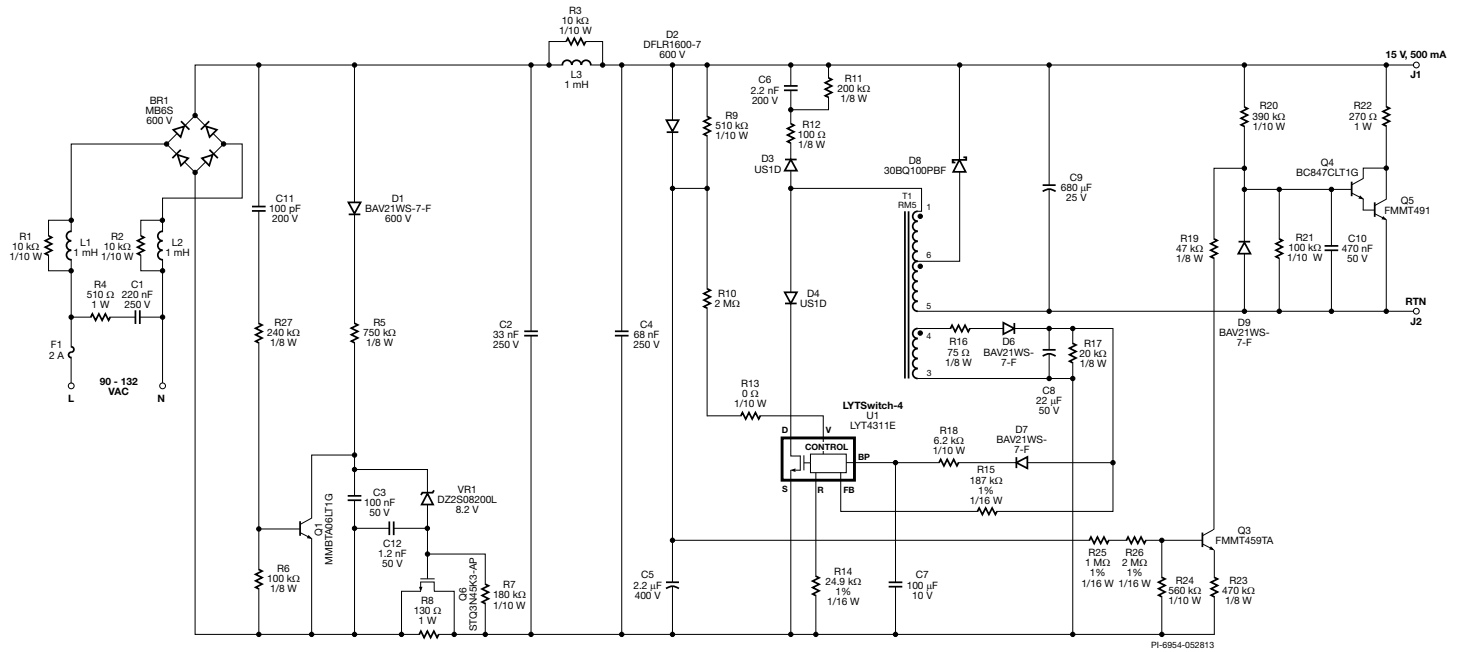
7 W, 42 V, 165 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-360)

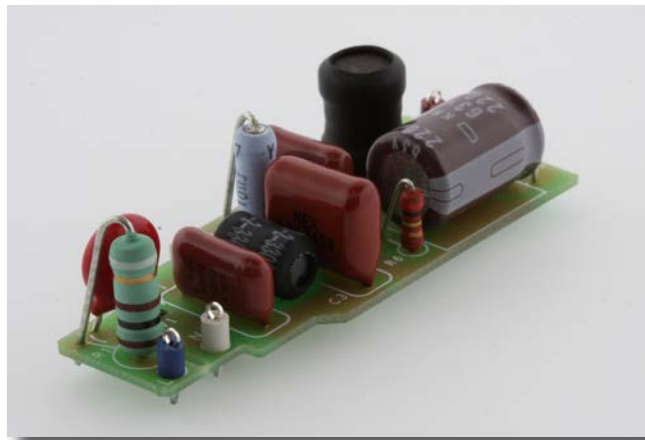
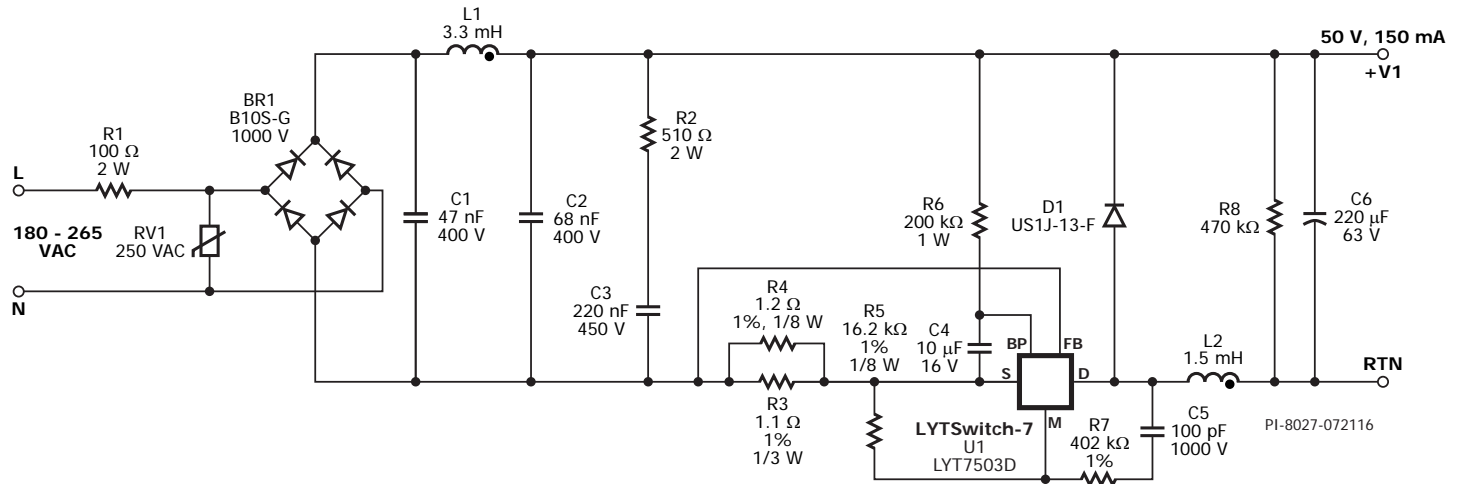
7.5 W, 15 V, 500 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-7 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-558)

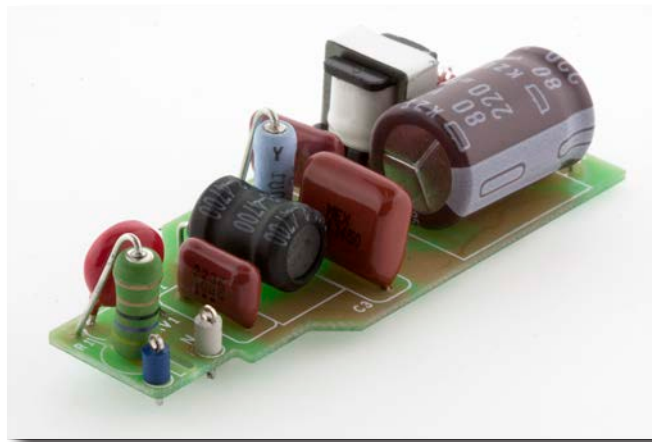
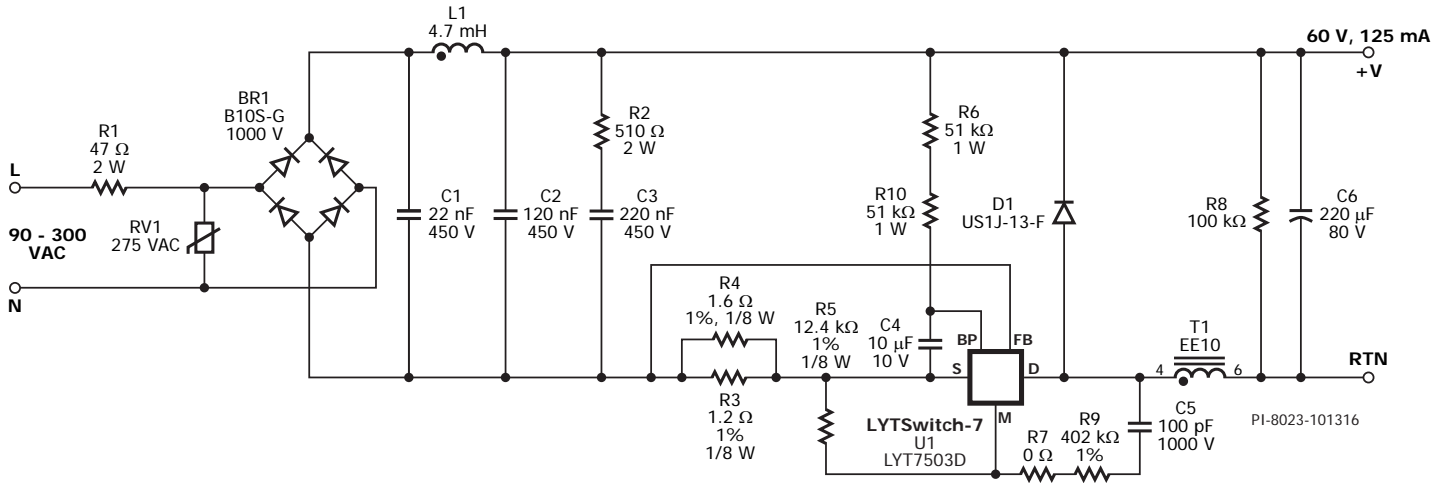
7.5 W, 50 V, 150 mA OUTPUT, 180 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-7 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-561)

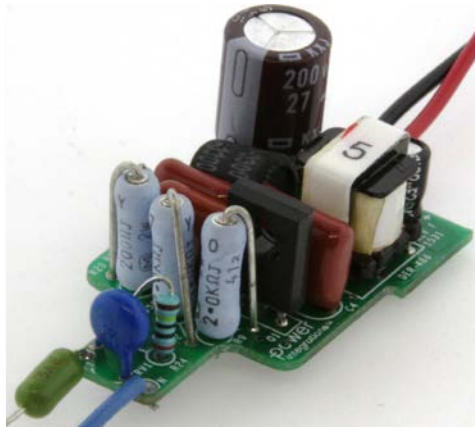
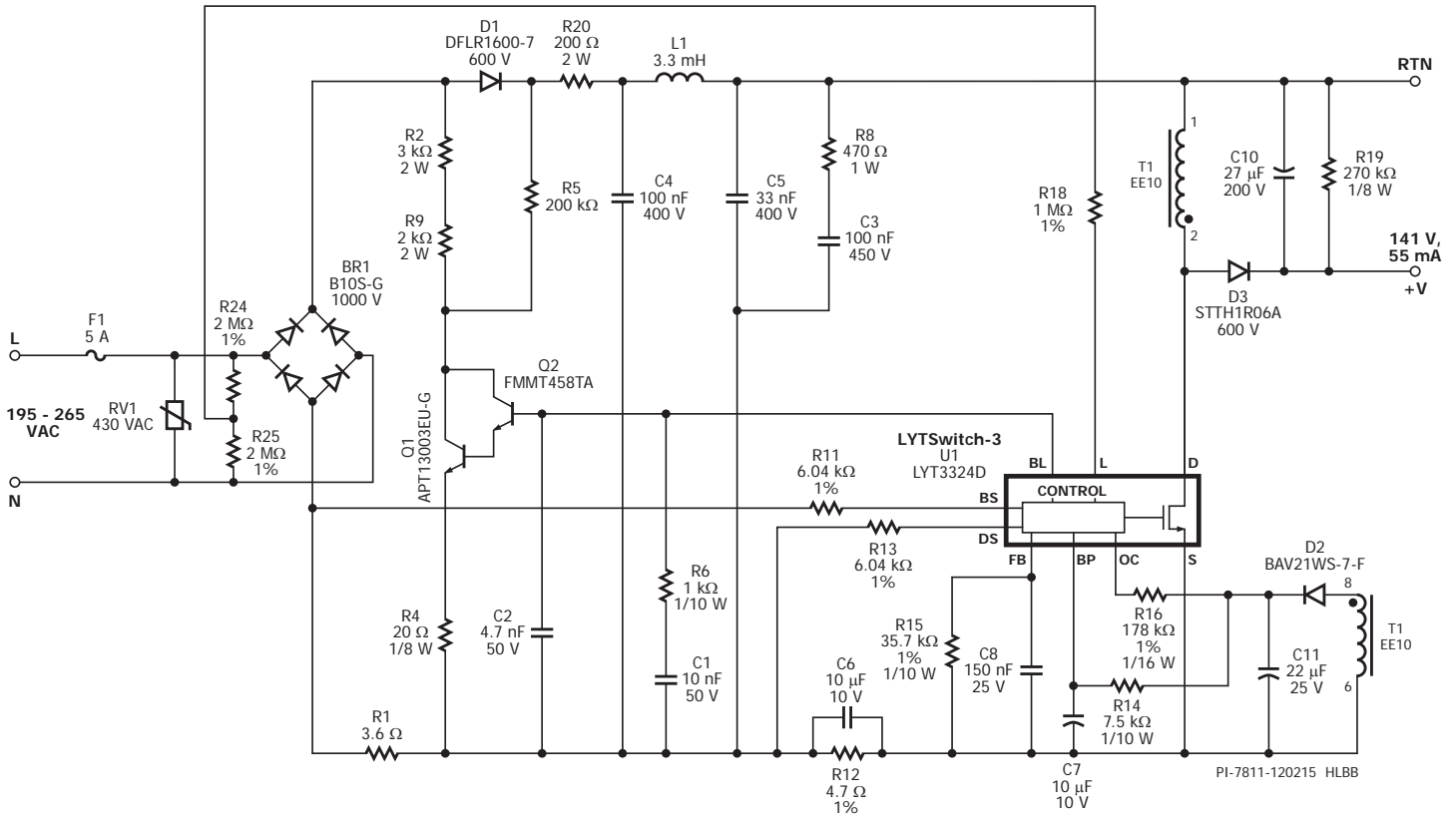
7.5 W, 60 V, 125 mA OUTPUT, 90 – 300 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – Accurate Constant Current, TRIAC Dimmable LED Driver (DER-486)

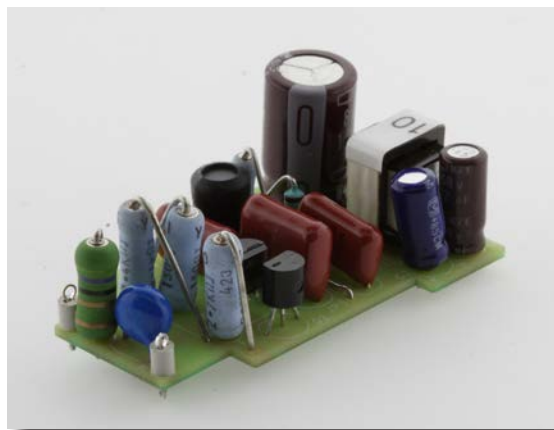
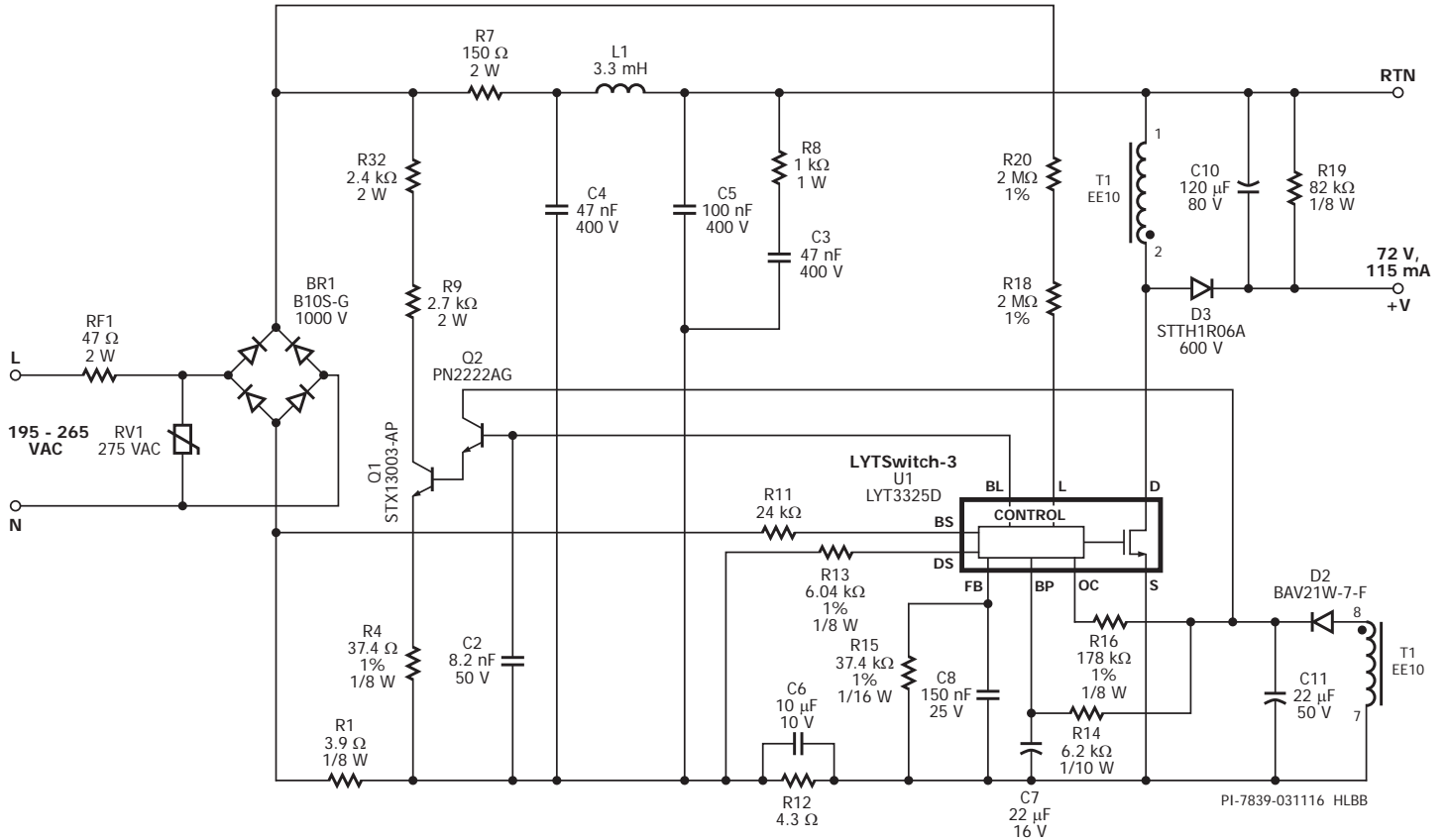
7.75 W, 141 V, 55 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, OMNI-DIRECTIONAL BULB POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-524)

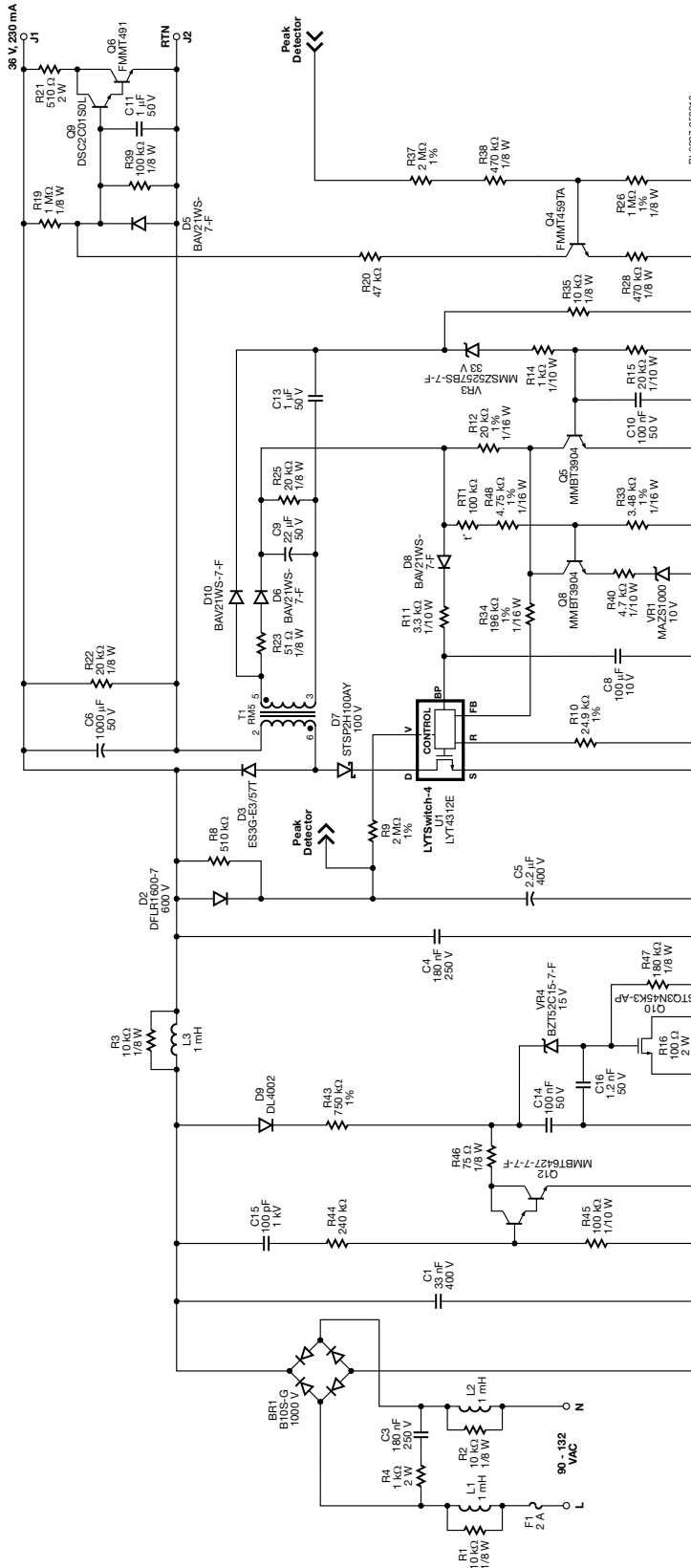
8 W, 72 V, 115 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTswitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-359)

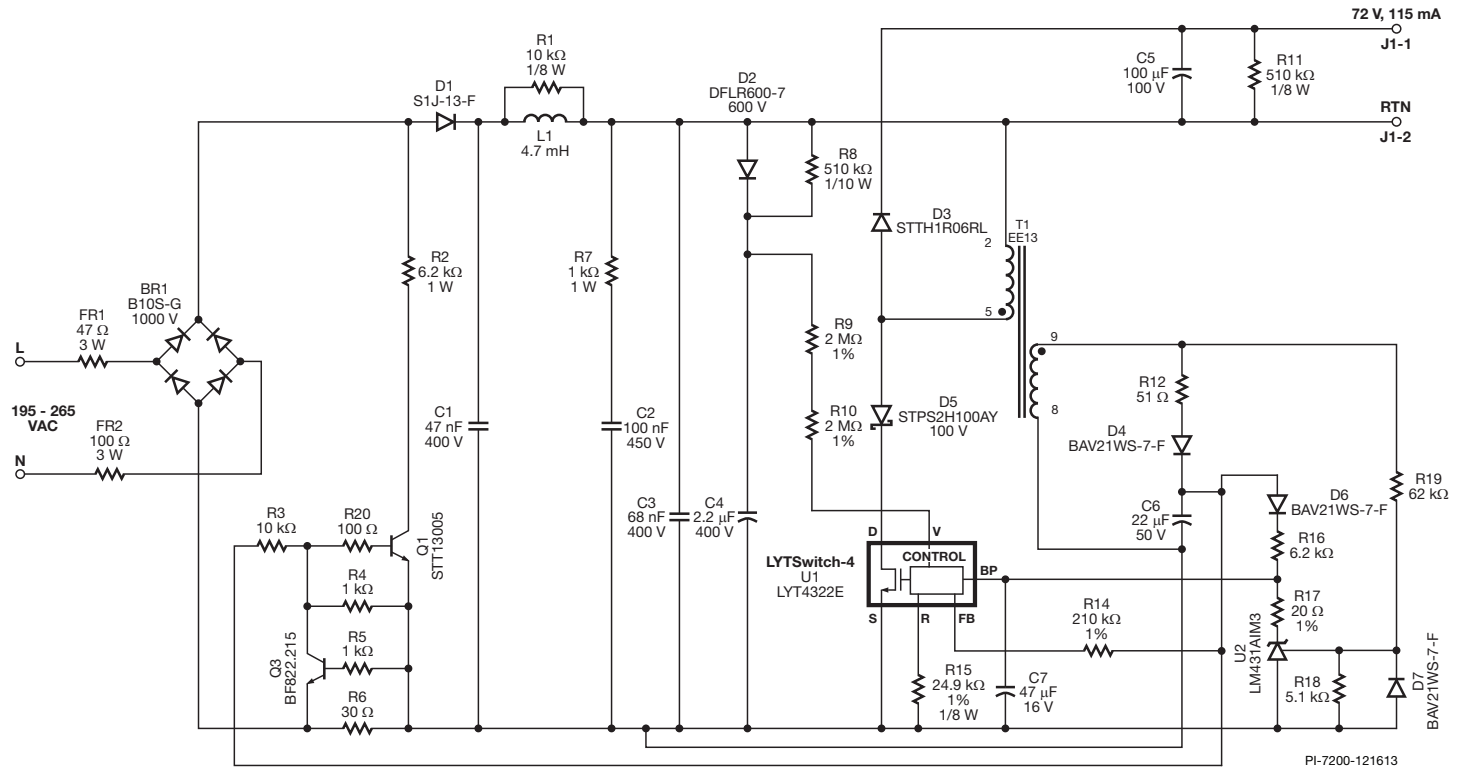
8 W, 36 V, 230 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, BR30 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-404)

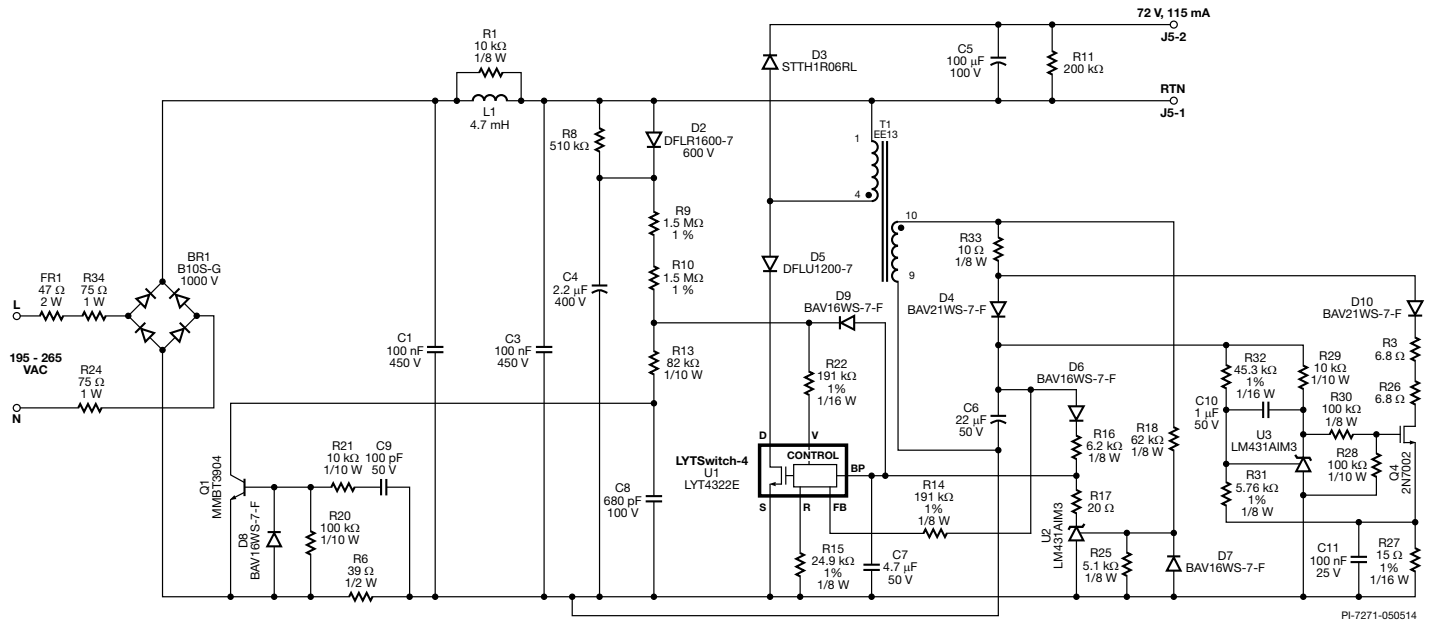
8.3 W, 72 V, 115 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-409)

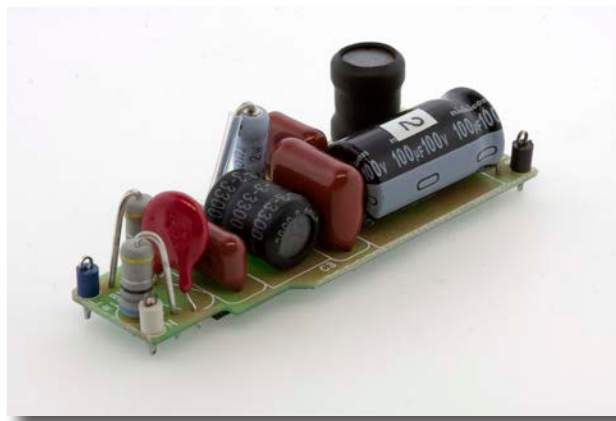
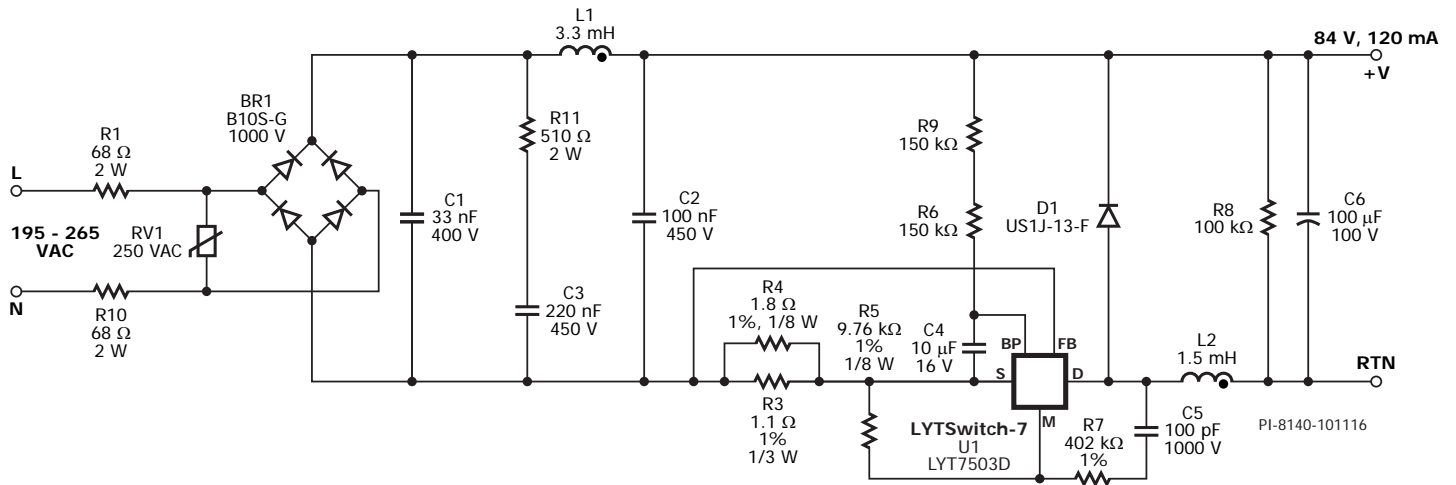
8.5 W, 72 V, 115 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-7 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-568)

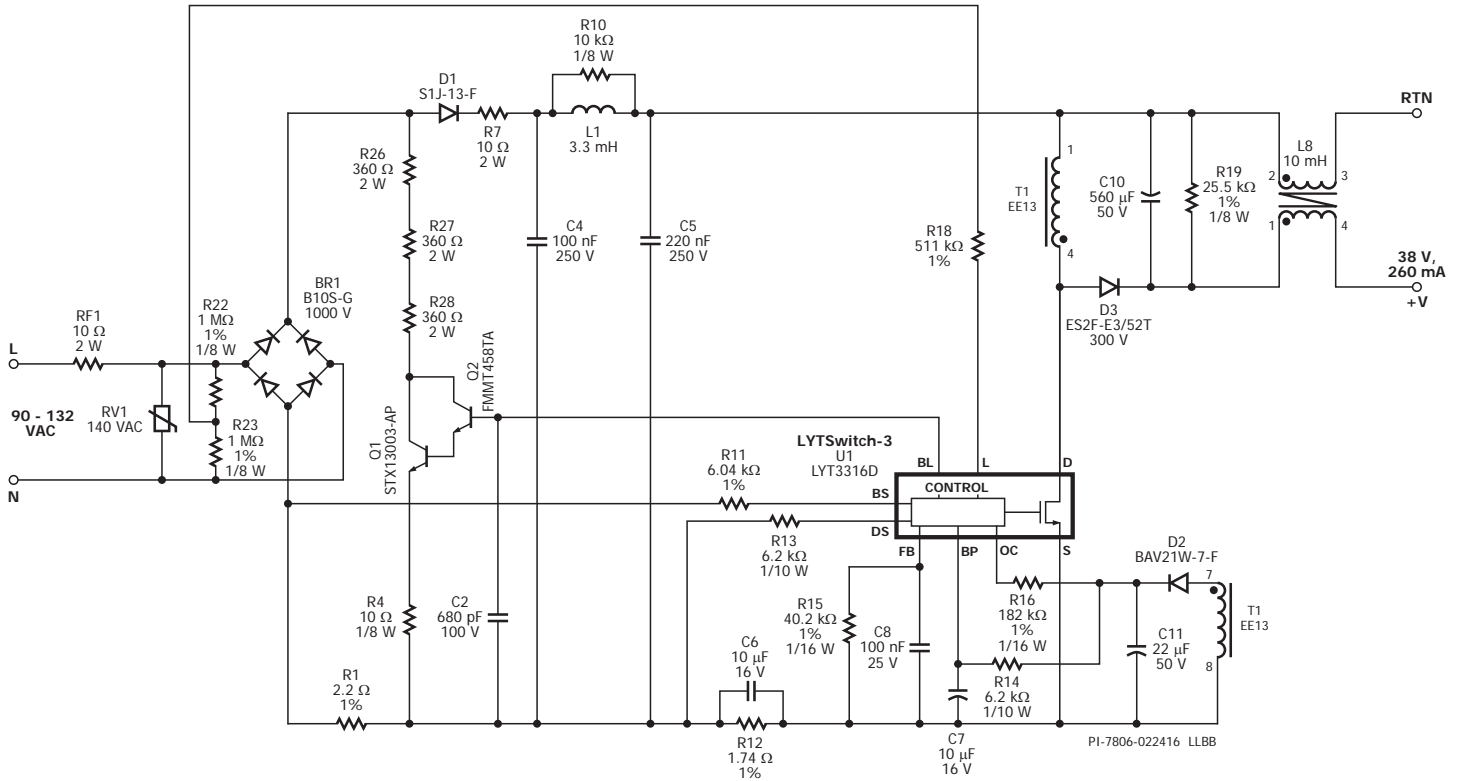
10 W, 84 V, 120 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-500)

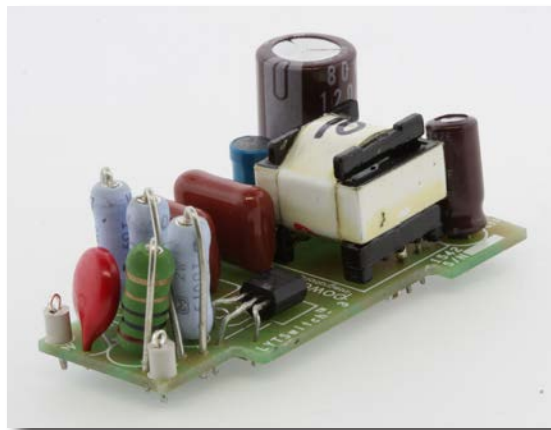
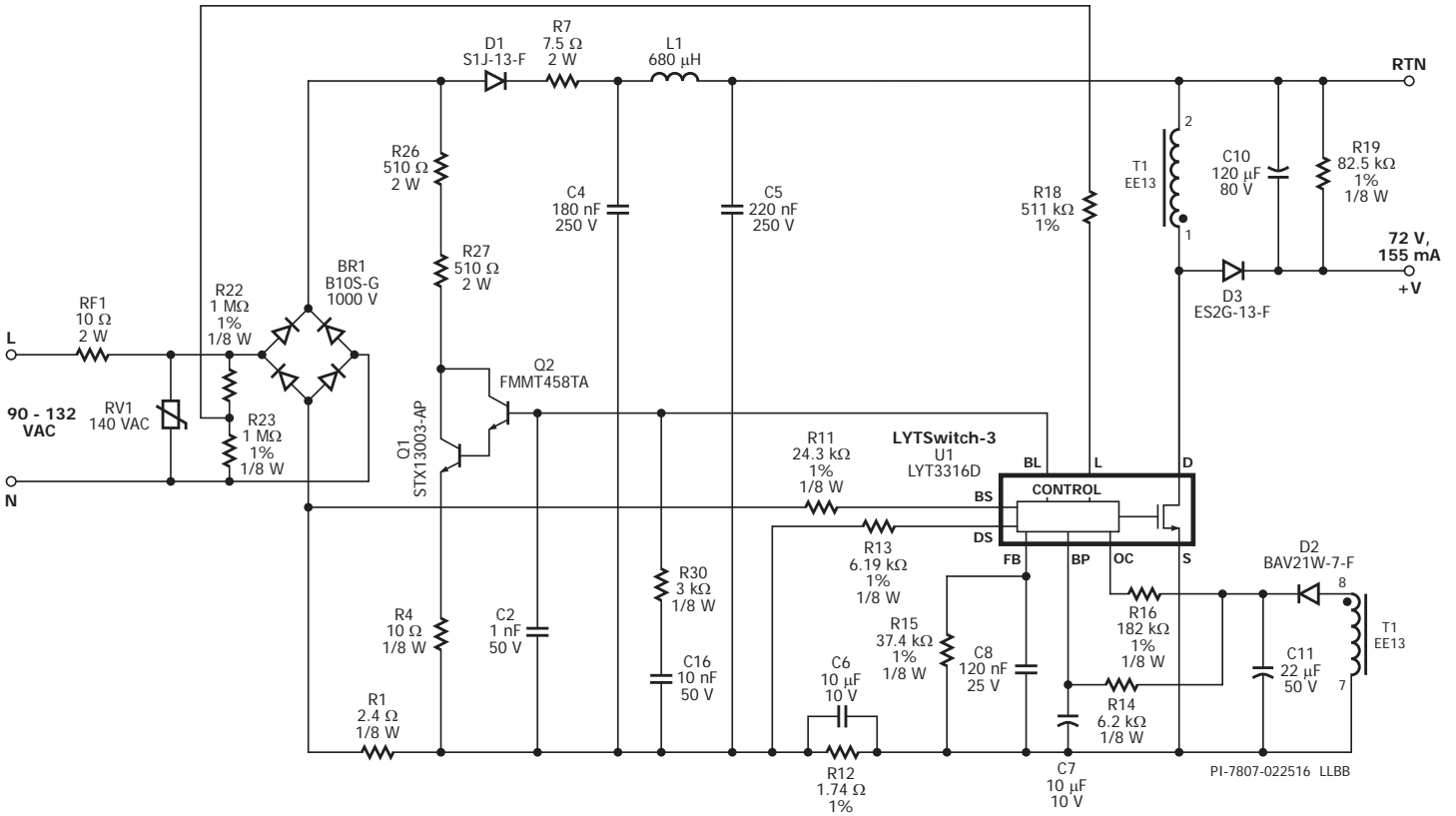
10 W, 36 V – 40 V, 260 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, DOWN LIGHT POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-510)

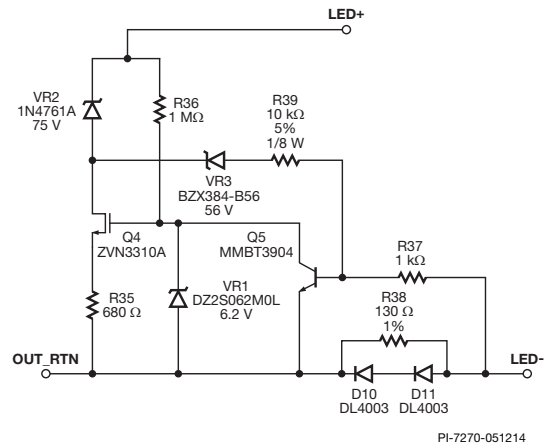
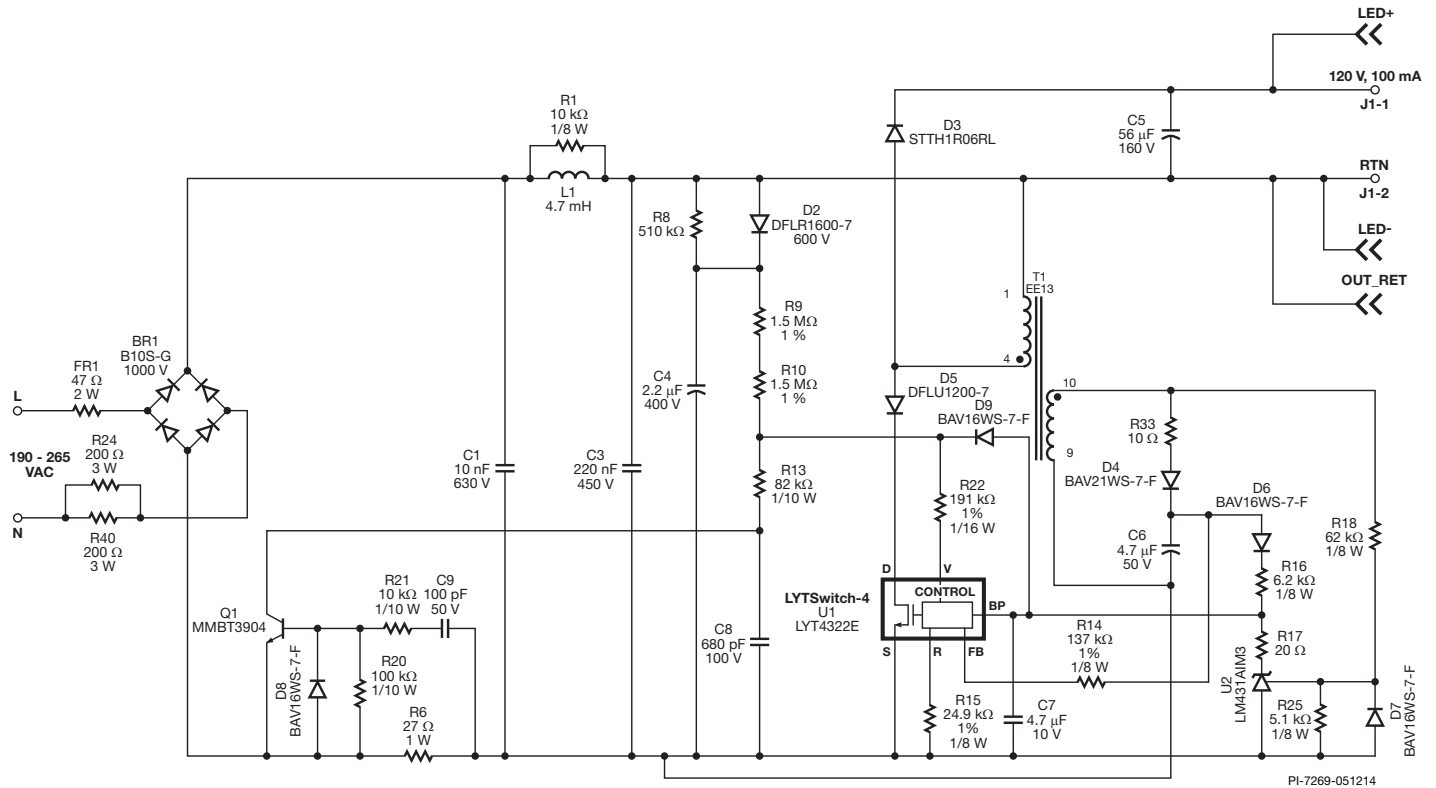
11 W, 72 V, 155 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-412)

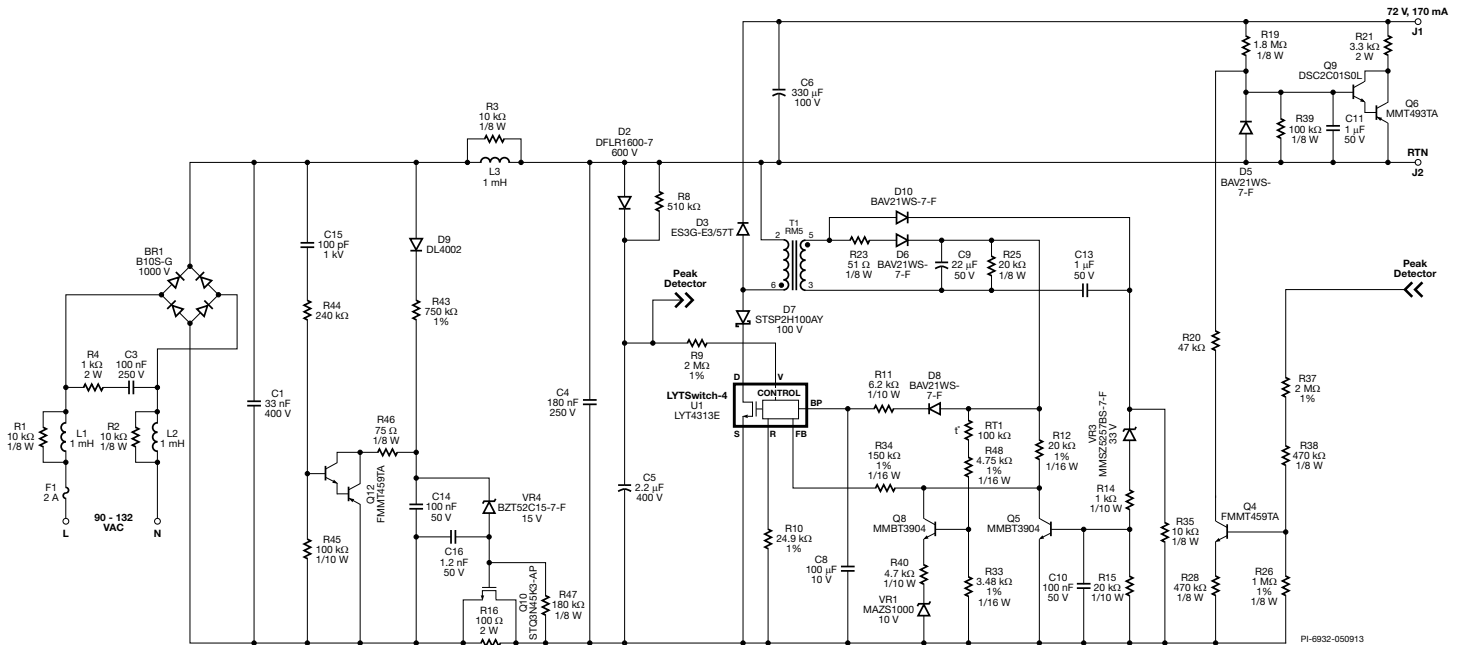
12 W, 120 V, 100 mA OUTPUT, 190 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-357)

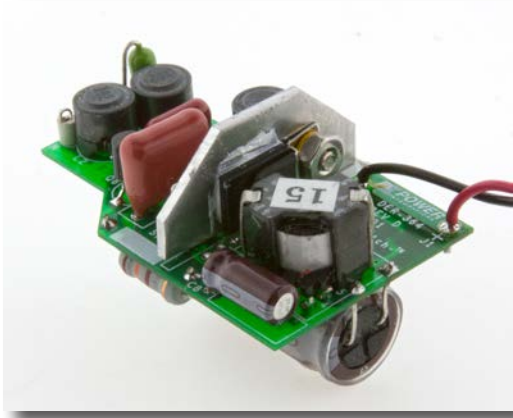
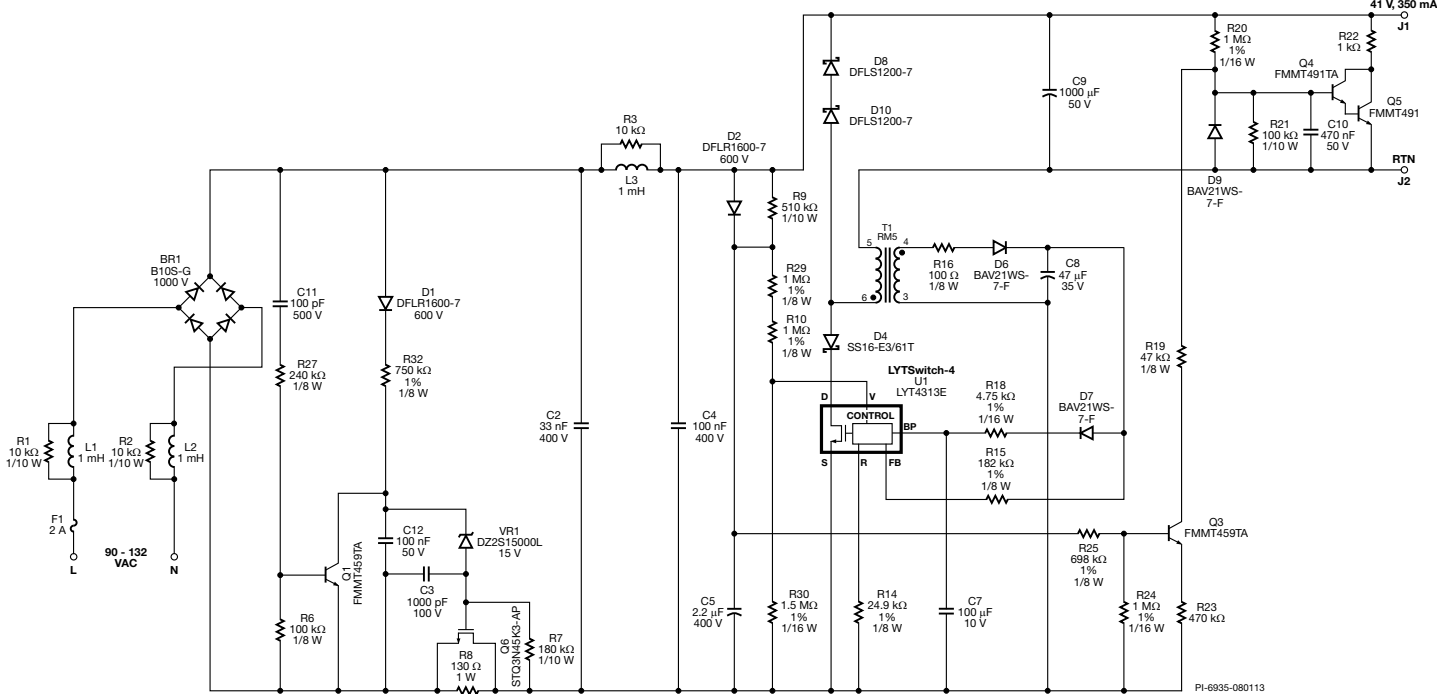
12 W, 72 V, 170 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, BR40 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-364)

14 W, 41 V, 350 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, PAR30 POWER SUPPLY

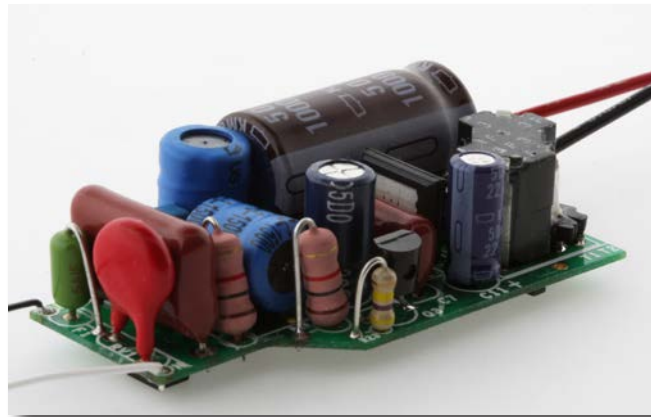
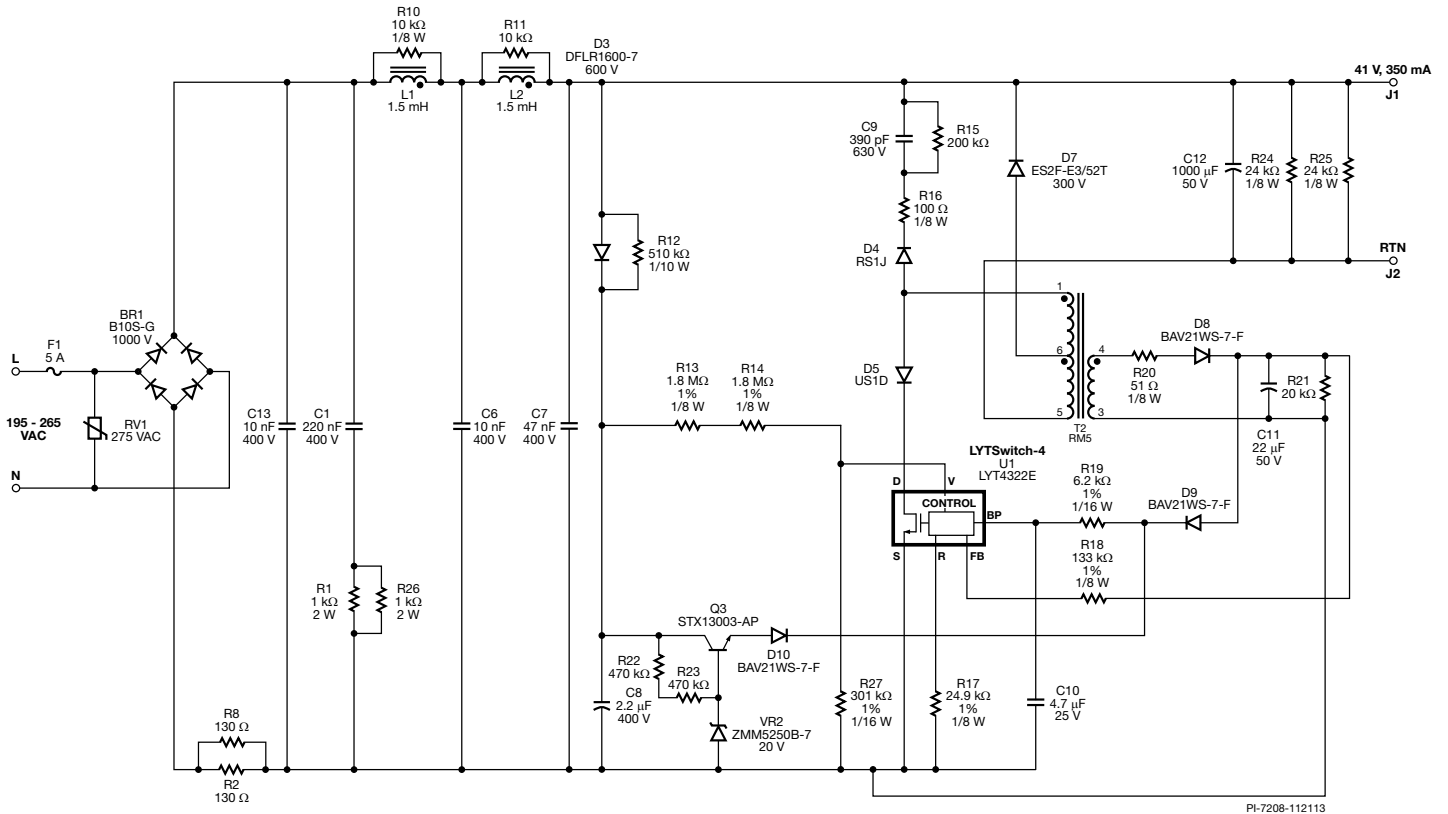


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TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-395)

14.35 W, 41 V, 350 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED TAPPED-BUCK, PAR30 POWER SUPPLY

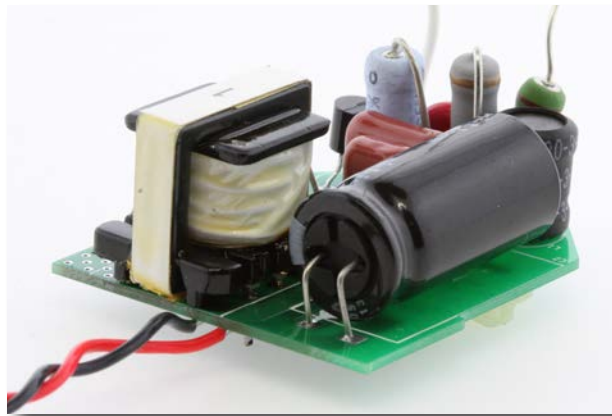
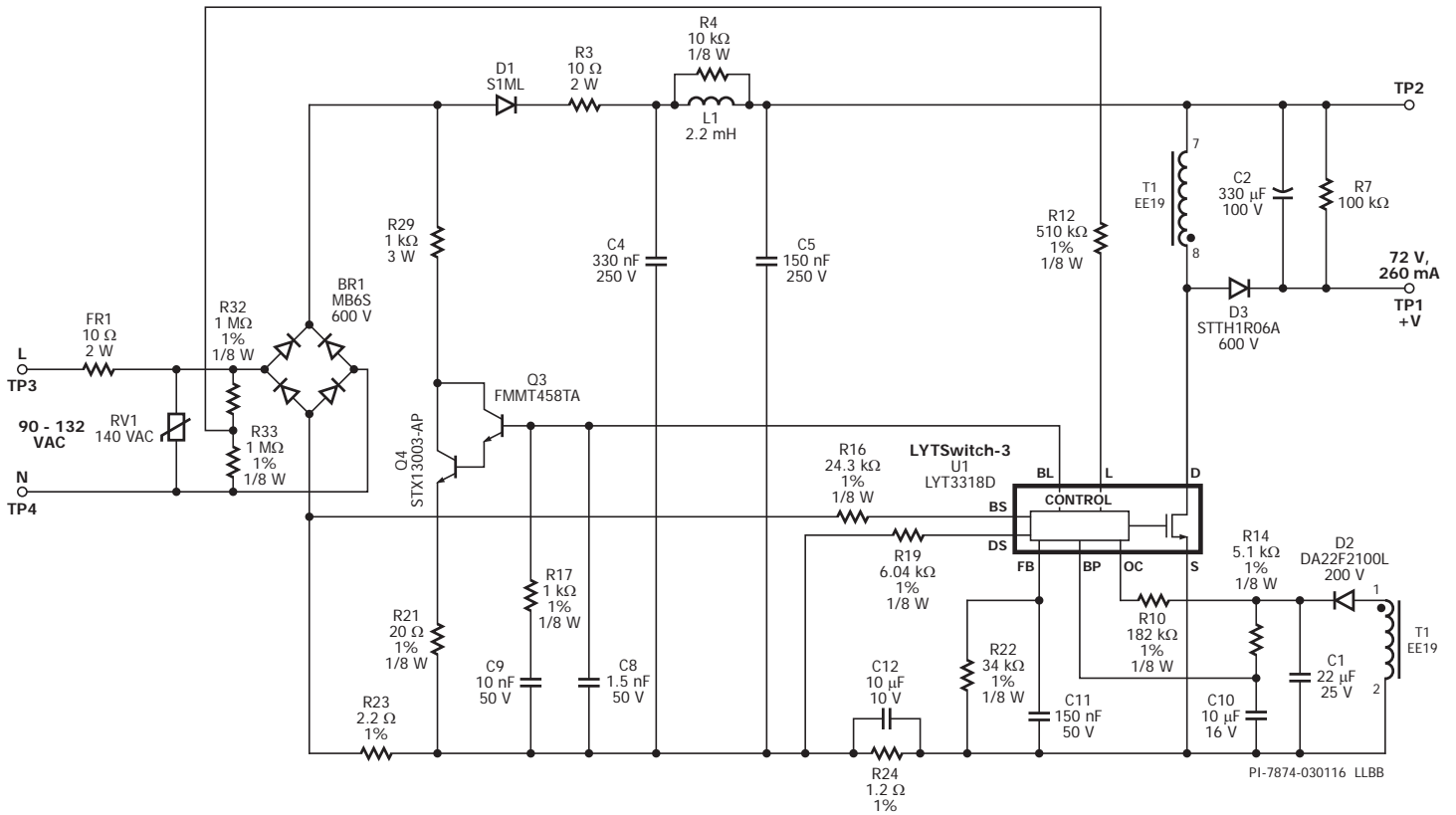


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TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-3 – Non-Isolated, High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-512)

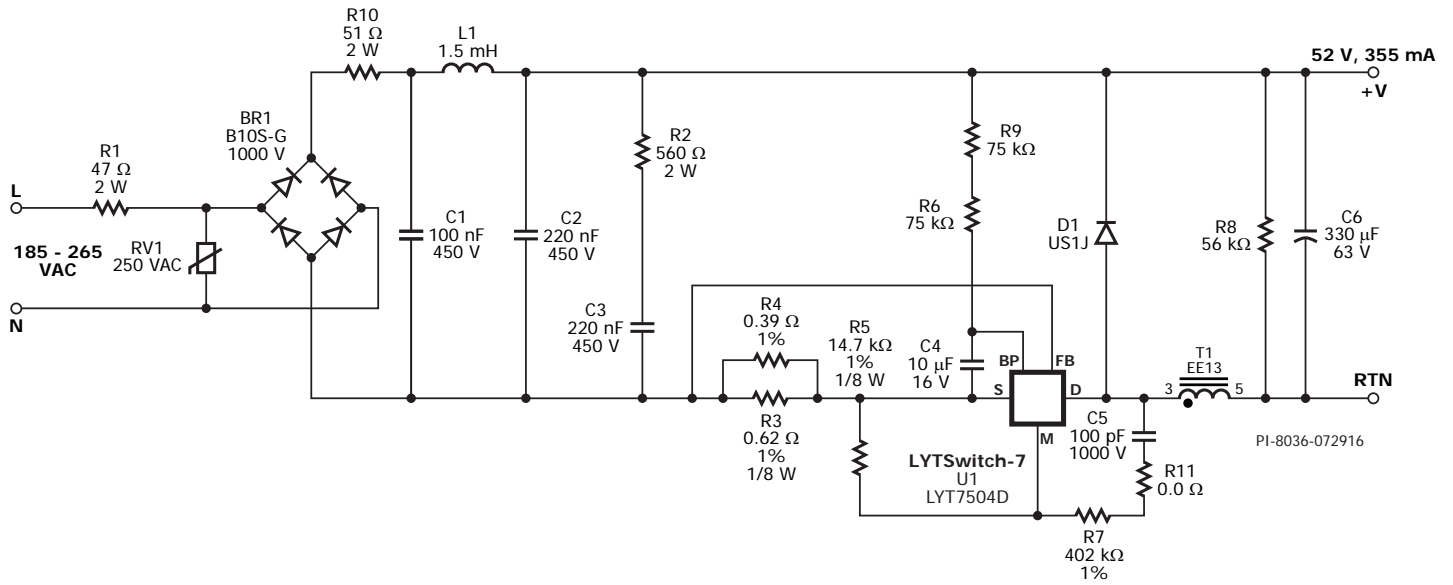
18 W, 72 V, 260 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, BUCK-BOOST CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-7 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-563)

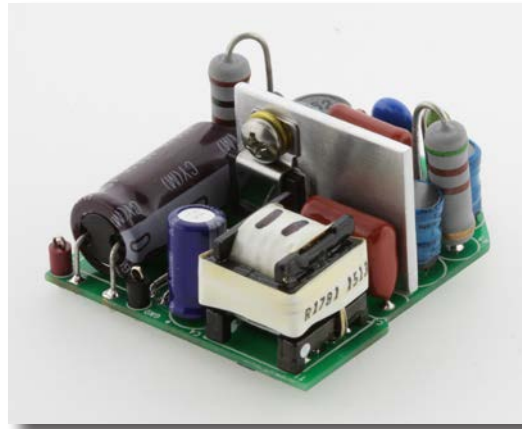
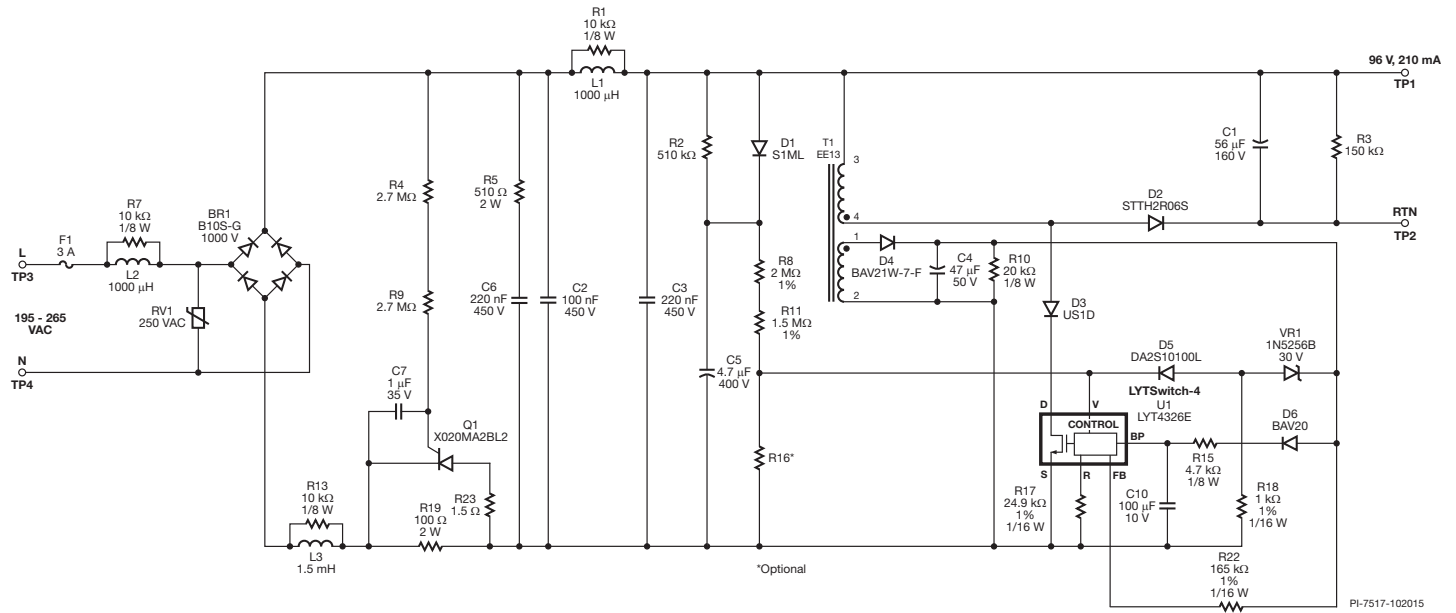
18.5 W, 52 V, 355 mA OUTPUT, 185 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, A19 POWER SUPPLY



TRIAC Dimmable, Bulb Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, TRIAC Dimmable LED Driver (DER-445)

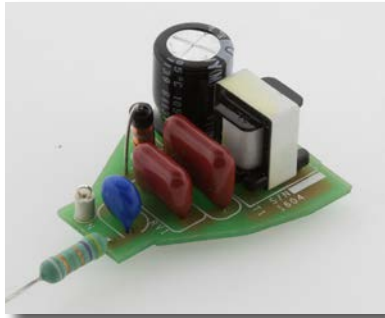
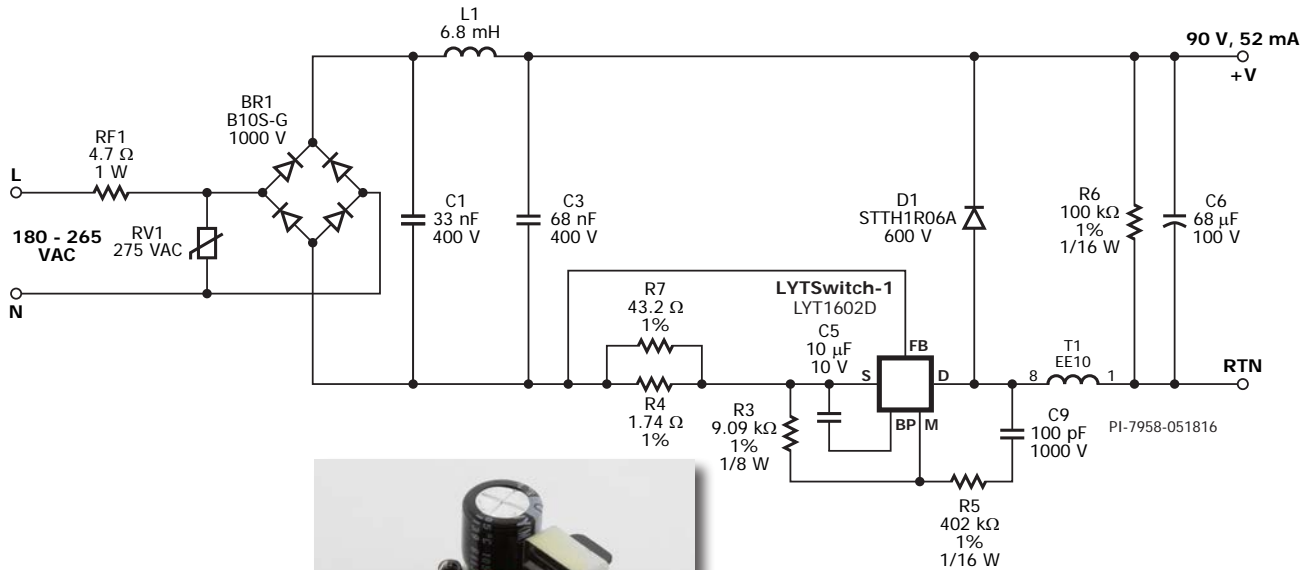
20 W, 96 V, 210 mA OUTPUT, 195 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, G28 POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

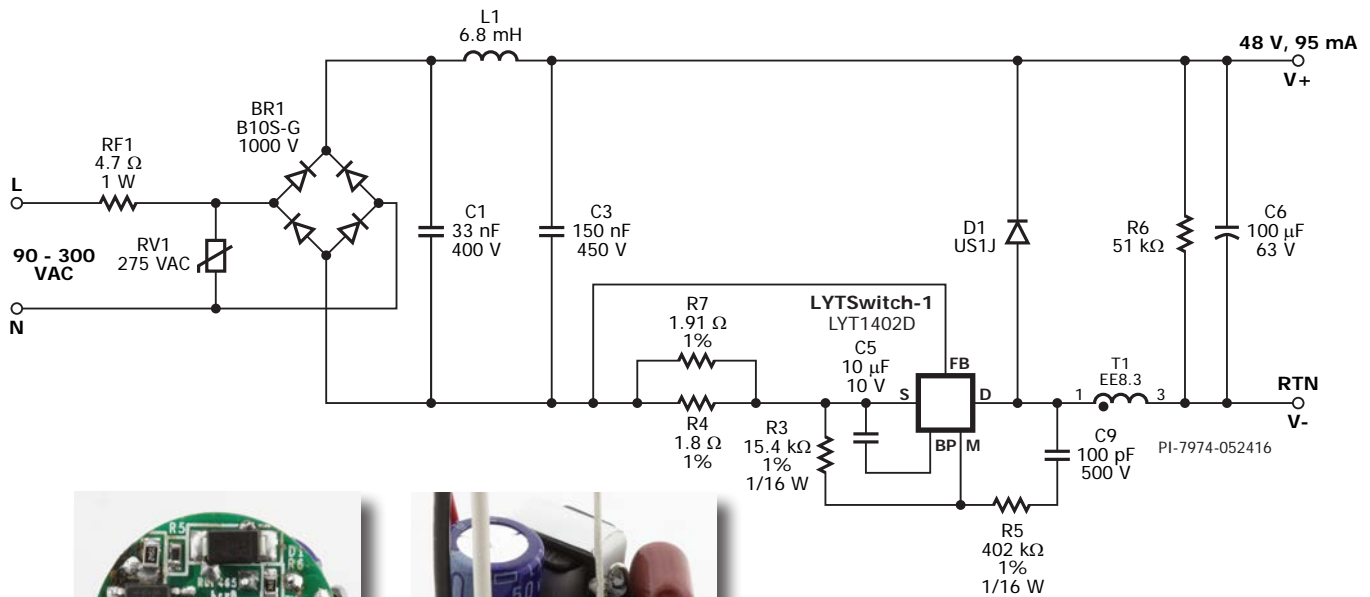
LYTSwitch-1 – High-Efficiency, High Power Factor, Accurate Constant Current LED Driver (DER-542)

4.5 W, 90 V, 52 mA OUTPUT, 180 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, CANDELABRA POWER SUPPLY



LYTSwitch-1 – High-Efficiency, High Power Factor, Accurate Constant Current LED Driver (RDK-465)

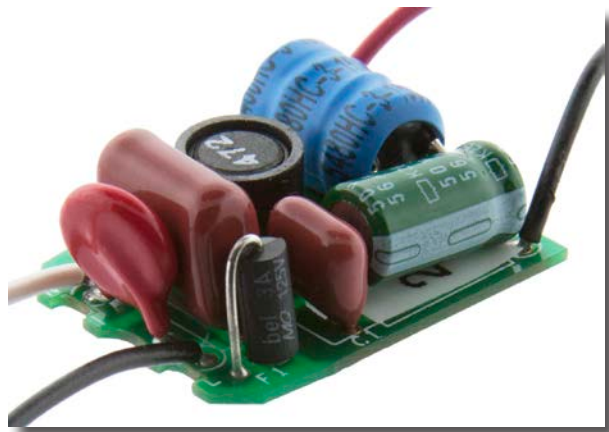
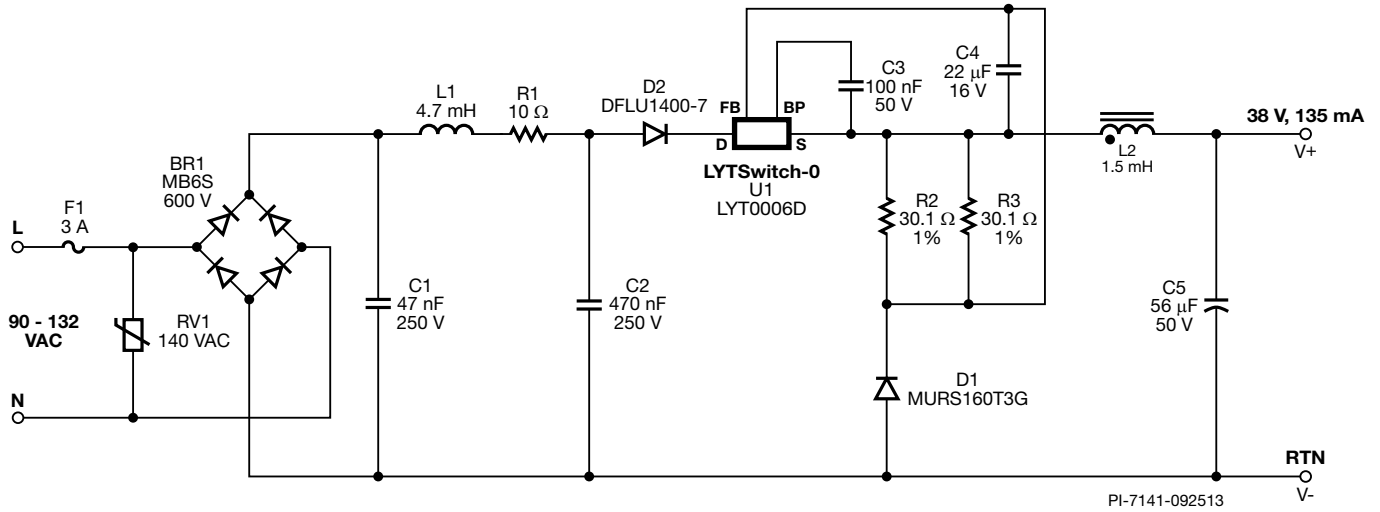
4.5 W, 47 V, 96 mA OUTPUT, 90 – 300 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, CANDELABRA POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

LYTSwitch-0 – High-Efficiency, High Power Factor, Accurate Constant Current LED Driver (DER-387)

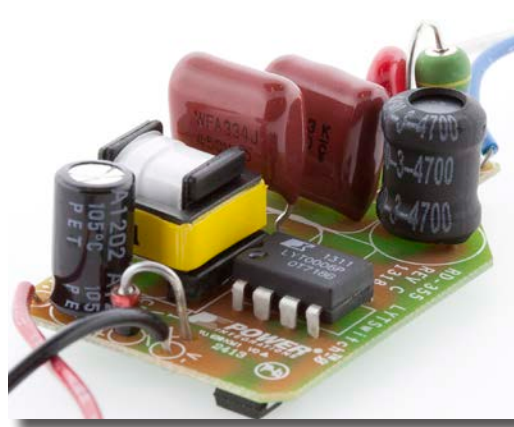
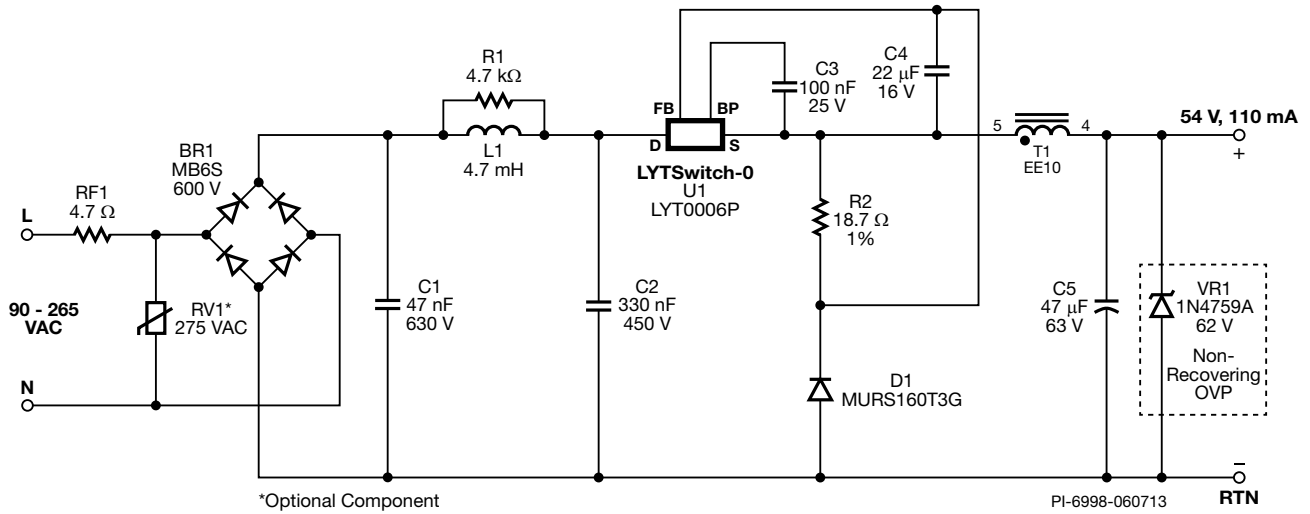
5.1 W, 38 V, 135 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, GU10 POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

LYTSwitch-0 – Power Factor Corrected, Constant Current LED Driver (RDK-355)

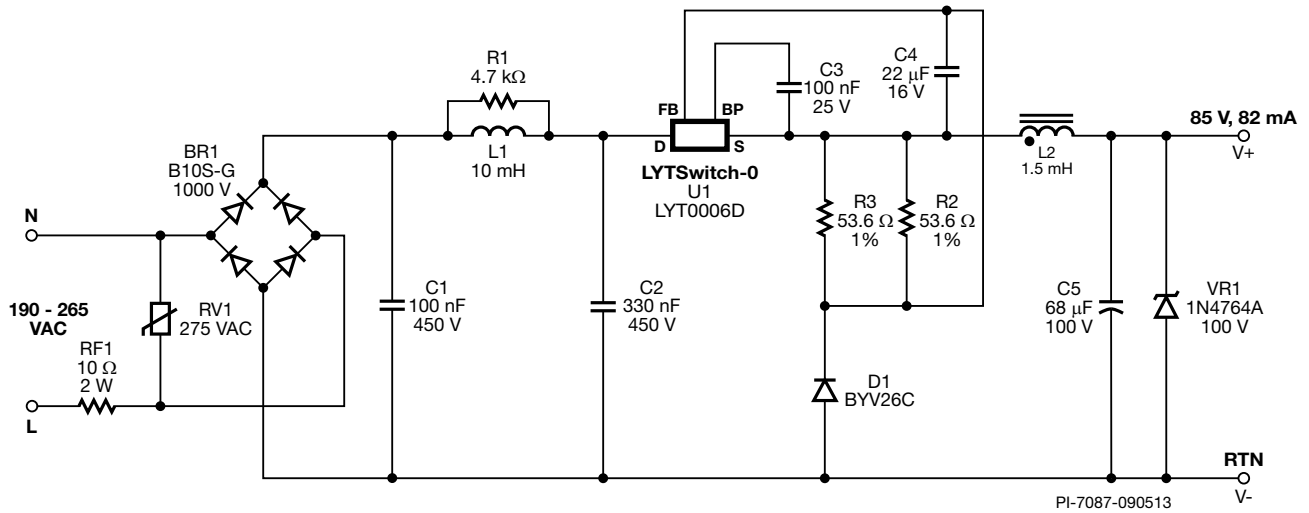
6 W, 54 V, 110 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, GU10 POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

LYTSwitch-0 – High-Efficiency, High Power Factor, LED Driver (RDK-378)

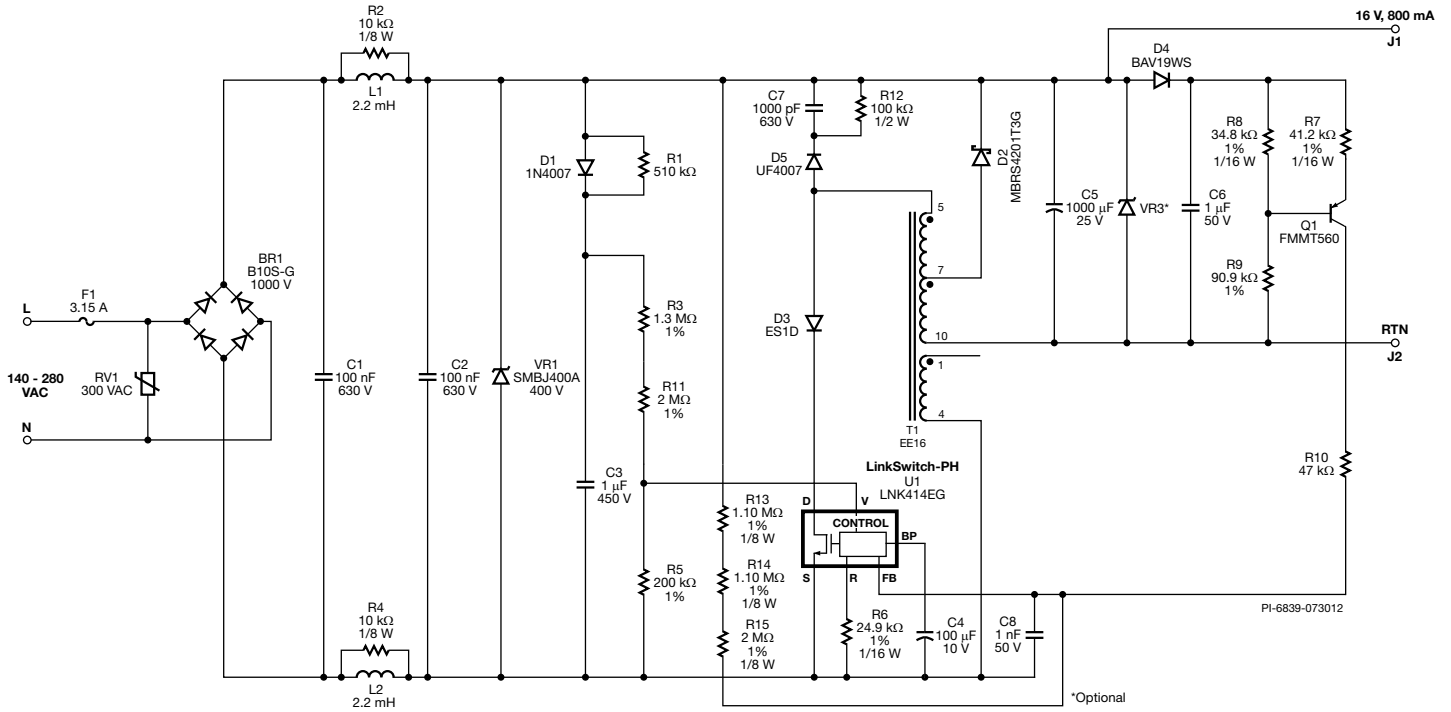
7 W, 85 V, 82 mA OUTPUT, 190 – 265 VAC INPUT, NON-ISOLATED BUCK CONVERTER, GU10 POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

LinkSwitch-PH – Constant Current, High Power Factor, LED Driver (DER-344)

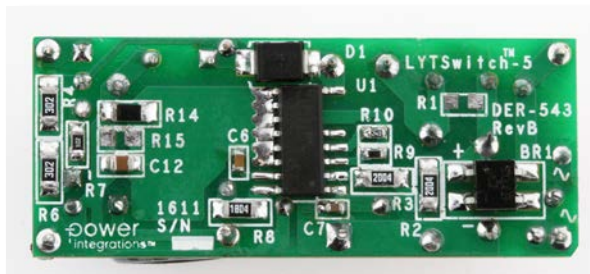
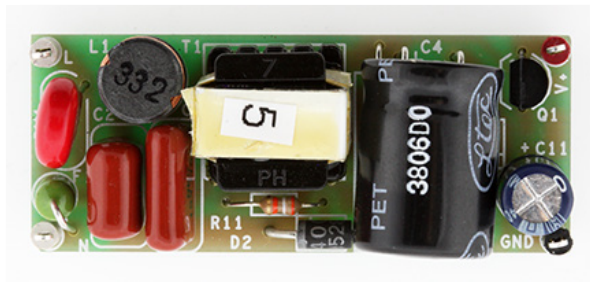
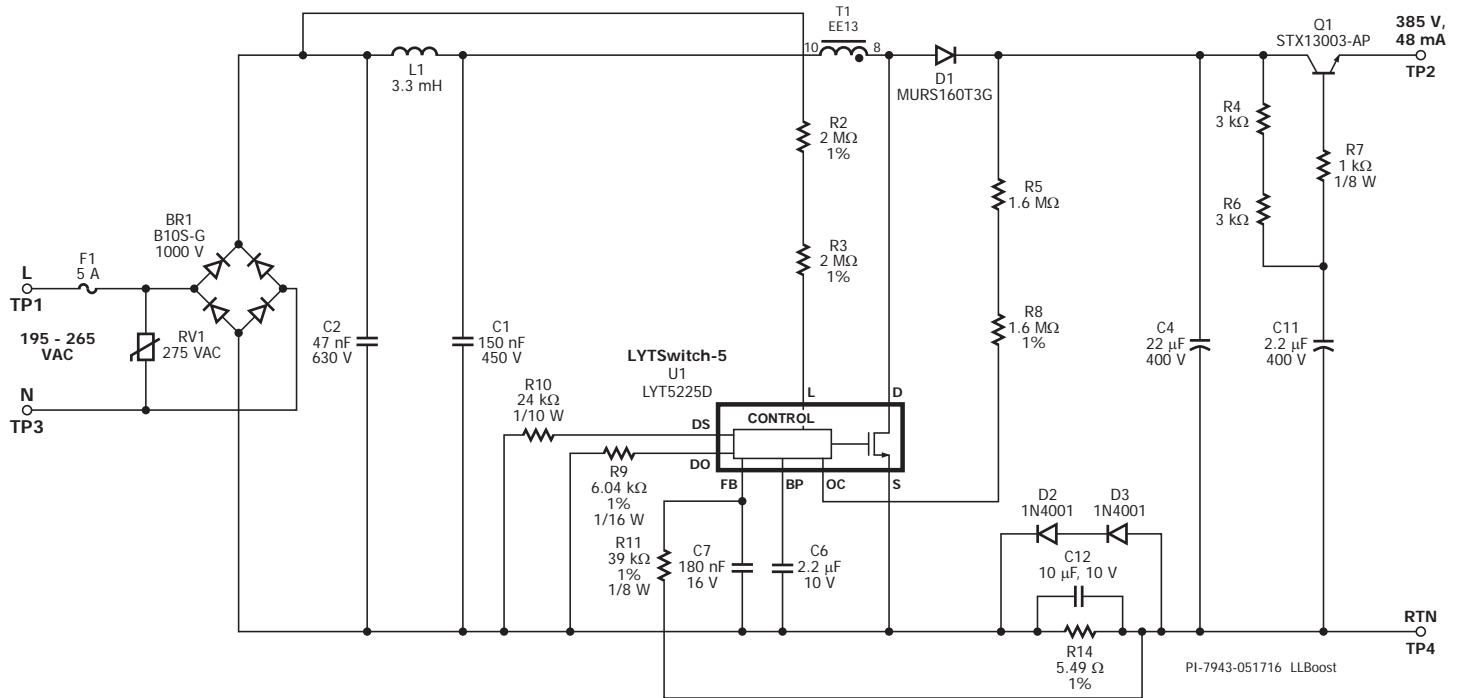
12.8 W, 16 V, 800 mA OUTPUT, 140 – 280 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED TAPPED-BUCK CONVERTER, DOWN LIGHT POWER SUPPLY



Non-Dimmable Bulb Replacement Designs

LYTSwitch-5 – High-Efficiency, High Power Factor, Accurate Constant Current LED Driver (DER-543)

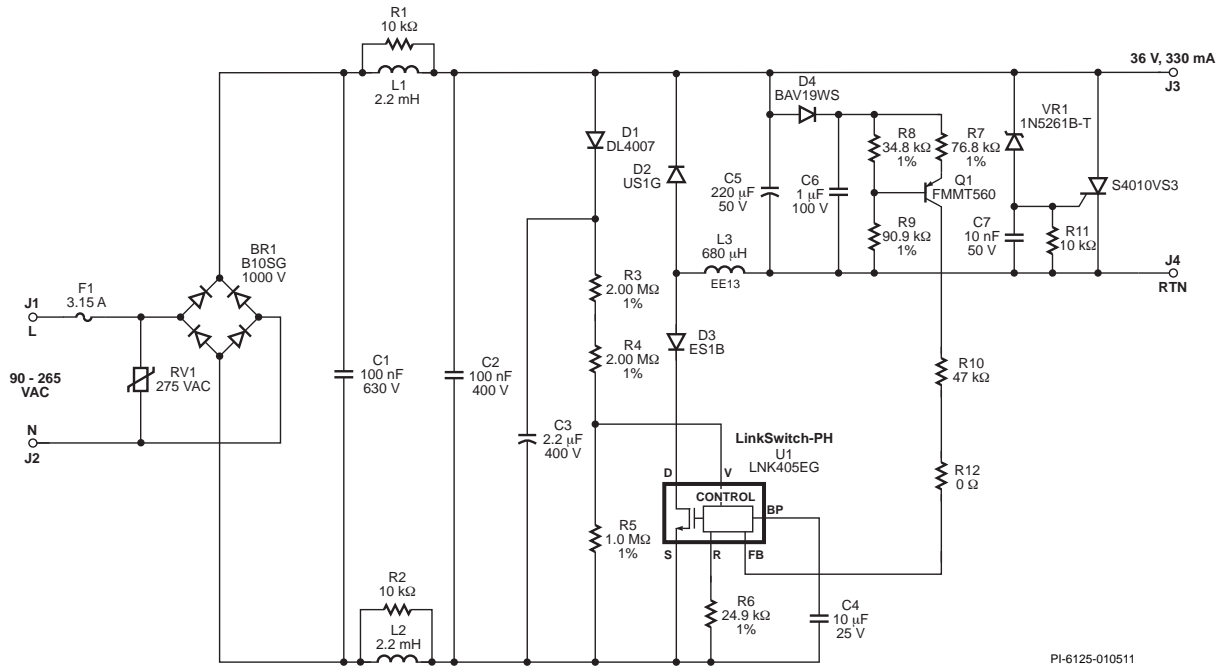
18 W, 385 V, 48 mA OUTPUT, 195 – 265 VAC INPUT, NON-ISOLATED BOOST CONVERTER, FLOOD LAMP POWER SUPPLY



Tube Replacement Designs

LinkSwitch-PH – High-Efficiency, High Power Factor, LED Driver (RDK-257)

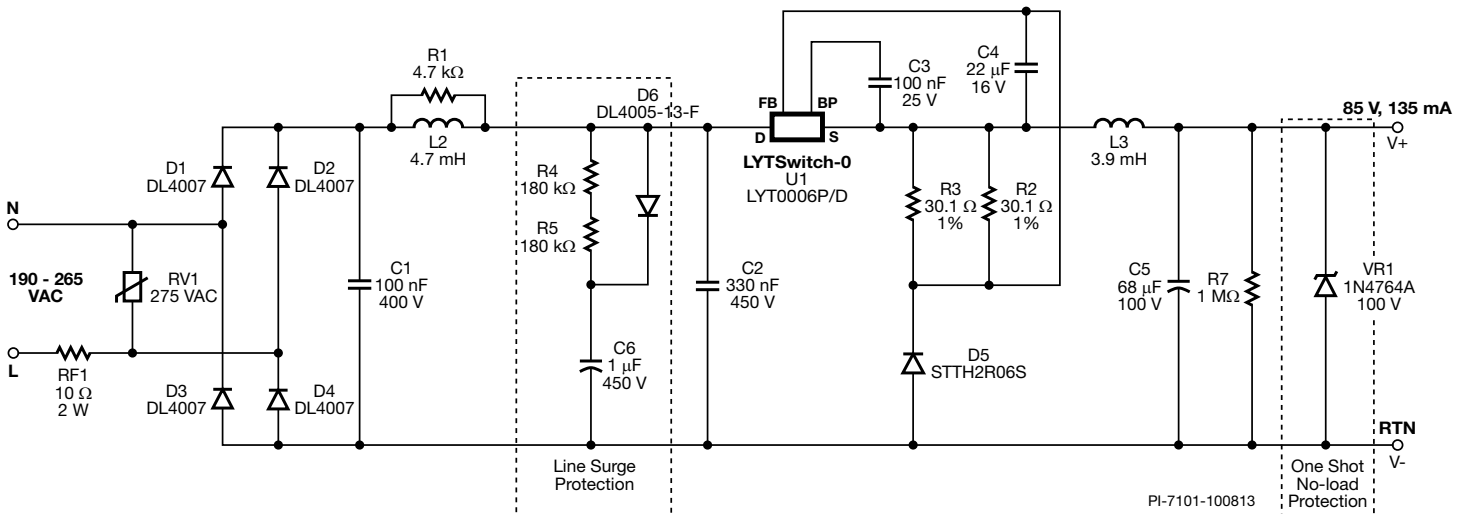
12 W, 36 V, 330 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, T8 POWER SUPPLY



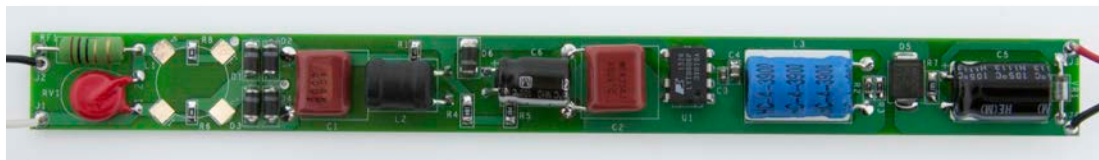
PI-6125-010511

LYTSwitch-0 – High-Efficiency, High Power Factor, LED Driver (DER-384)

12 W, 85 V, 135 mA OUTPUT, 190 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, T8 POWER SUPPLY



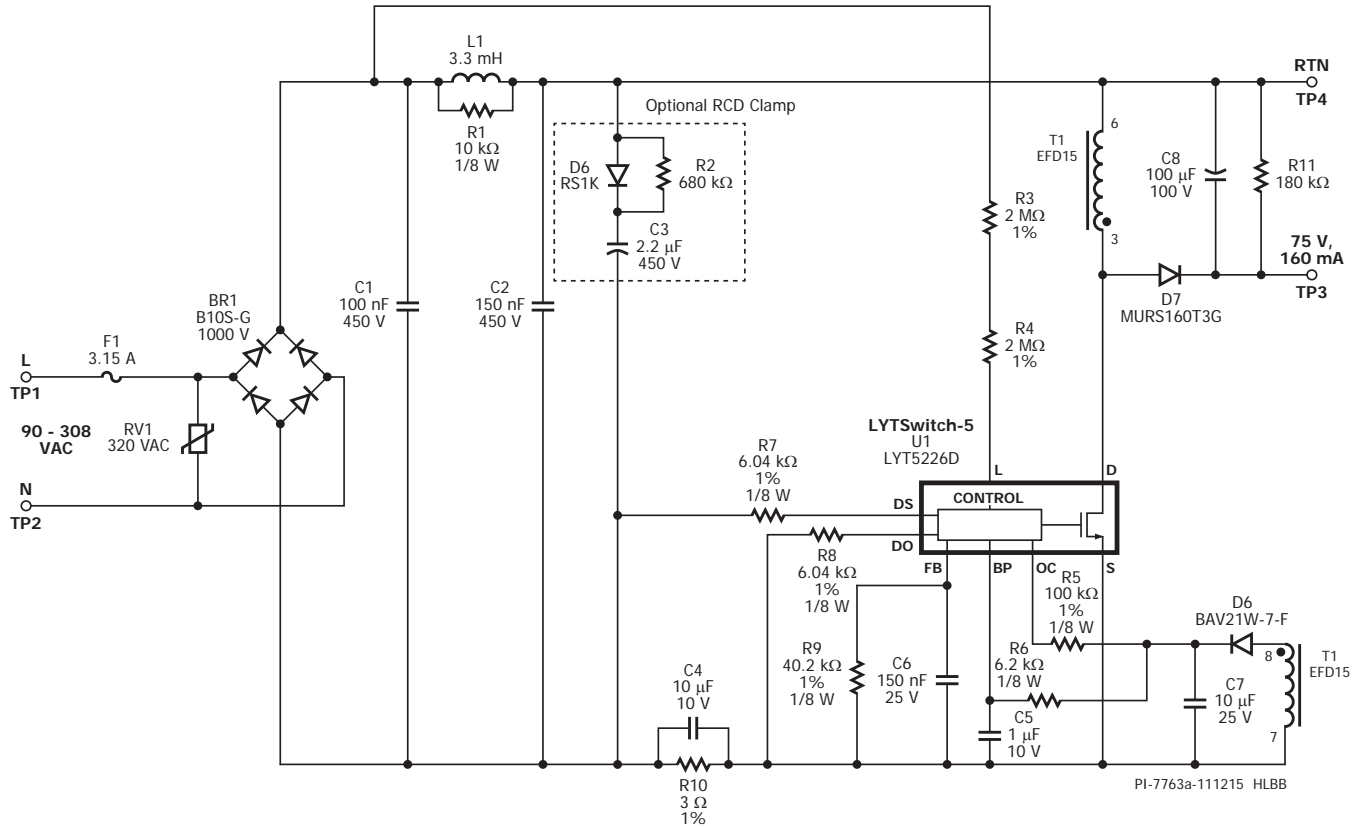
PI-7101-100813



Tube Replacement Designs

LYTSwitch-5 – High-Efficiency, High Power Factor, LED Driver (DER-515)

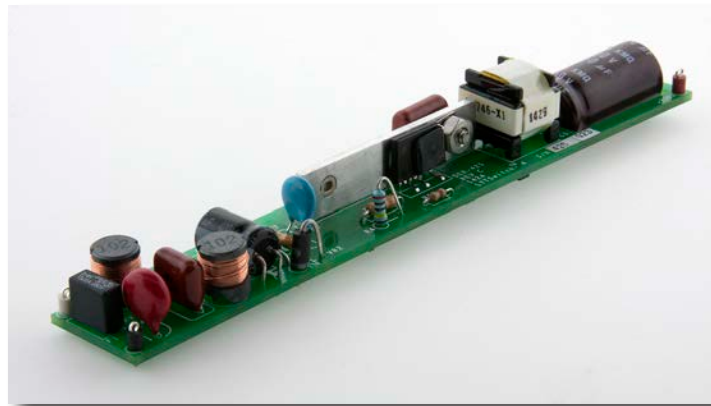
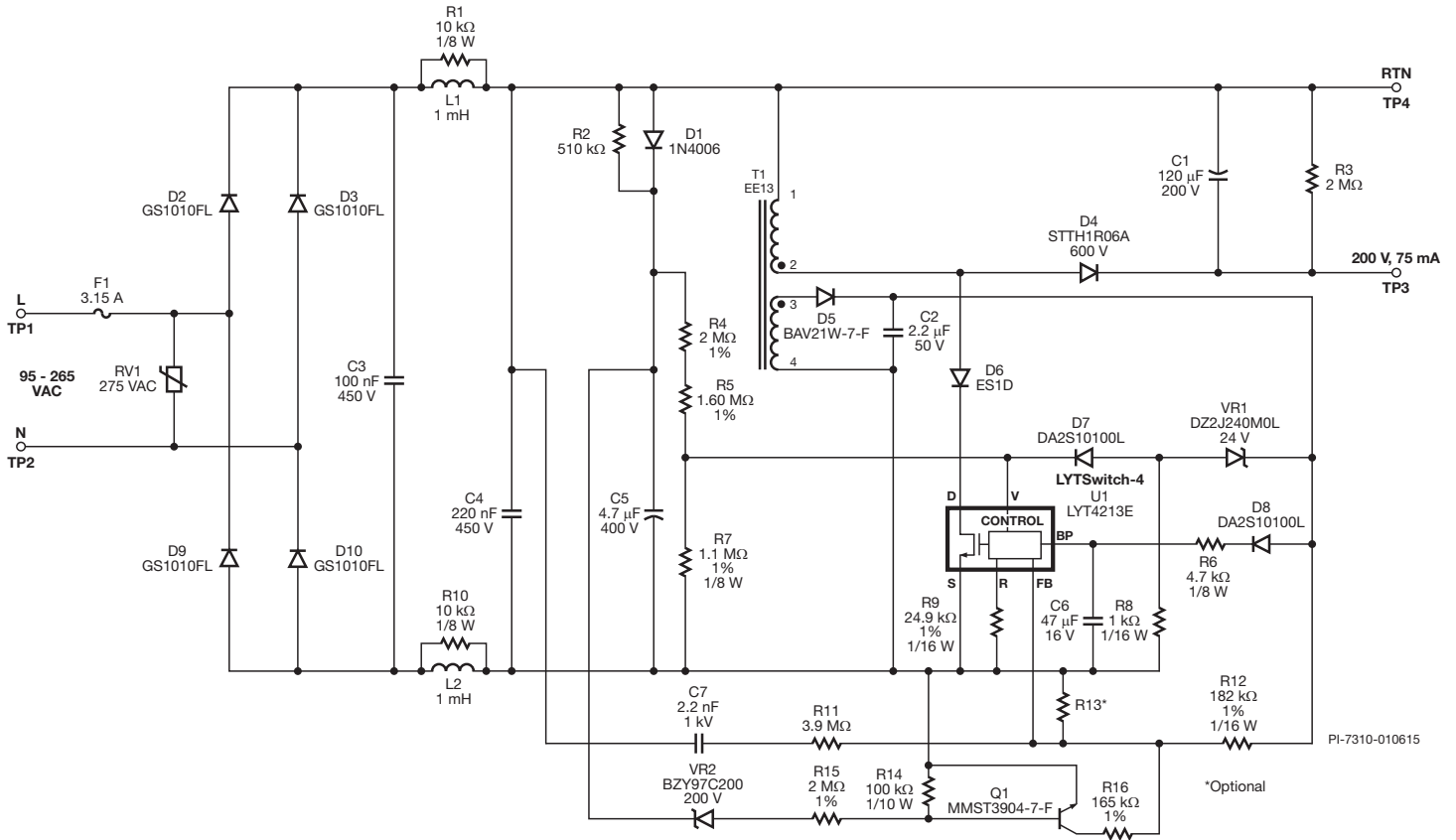
12 W, 69 V – 82 V, 160 mA OUTPUT, 90 – 308 VAC INPUT, NON-ISOLATED TUBE REPLACEMENT POWER SUPPLY



Tube Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor LED Driver (DER-425)

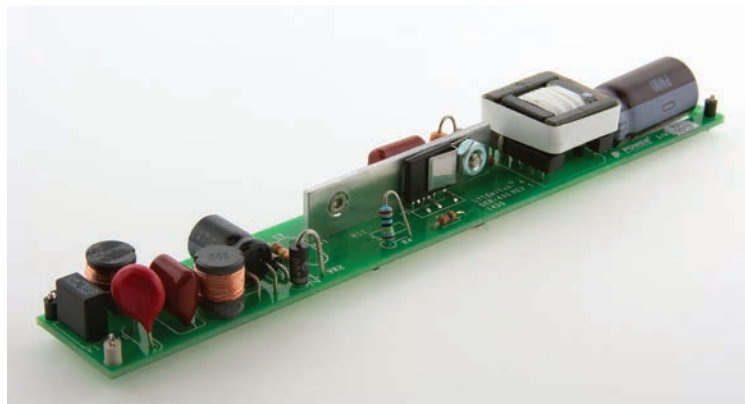
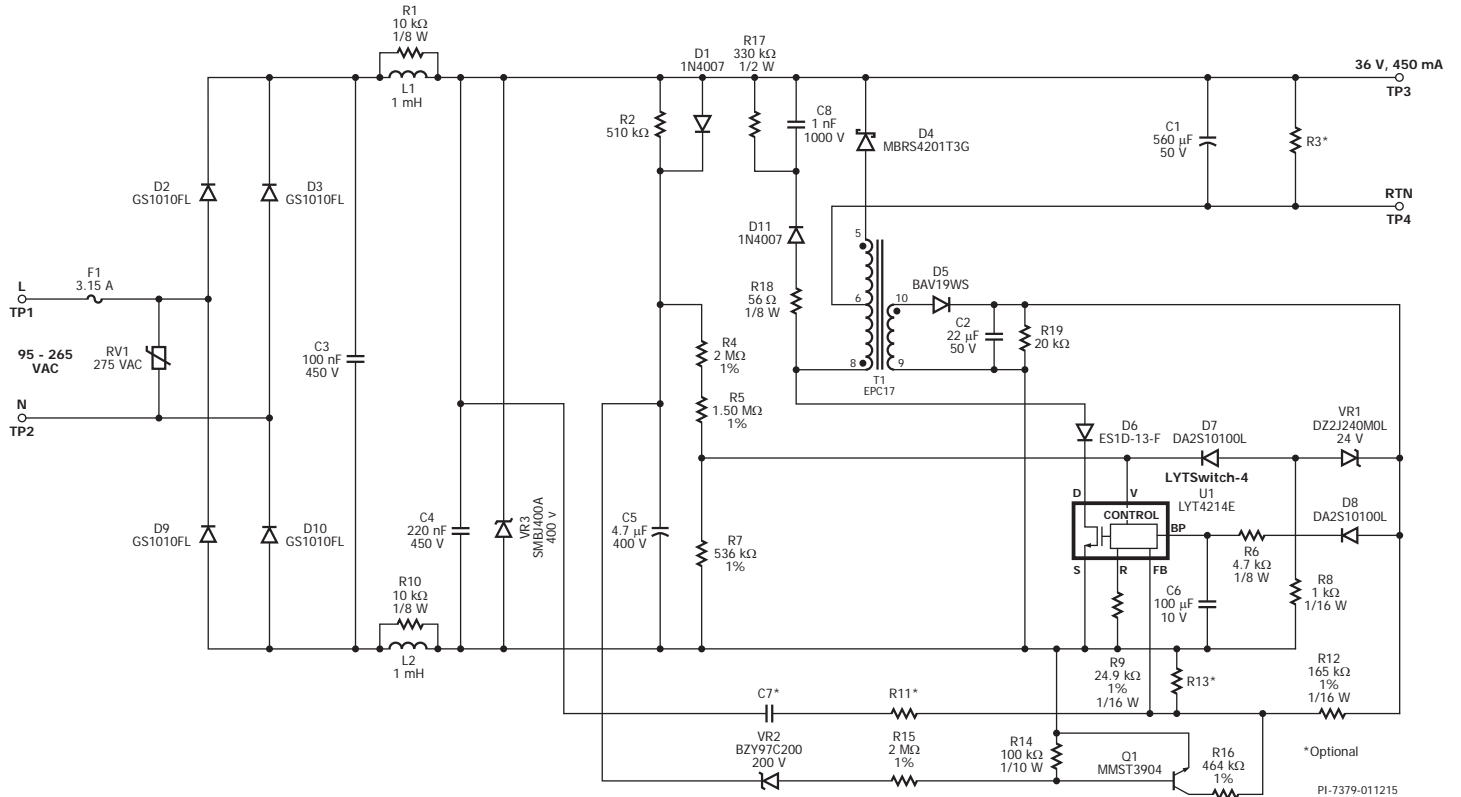
15 W, 200 V, 75 mA, 95 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, T8 TUBE POWER SUPPLY



Tube Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor LED Driver (DER-431)

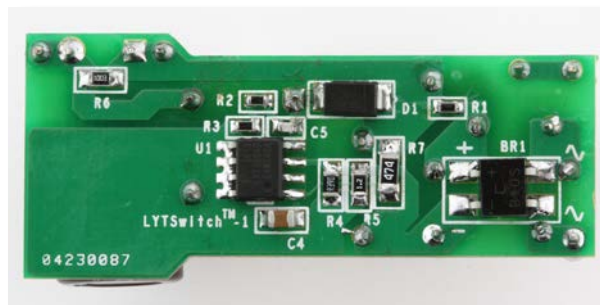
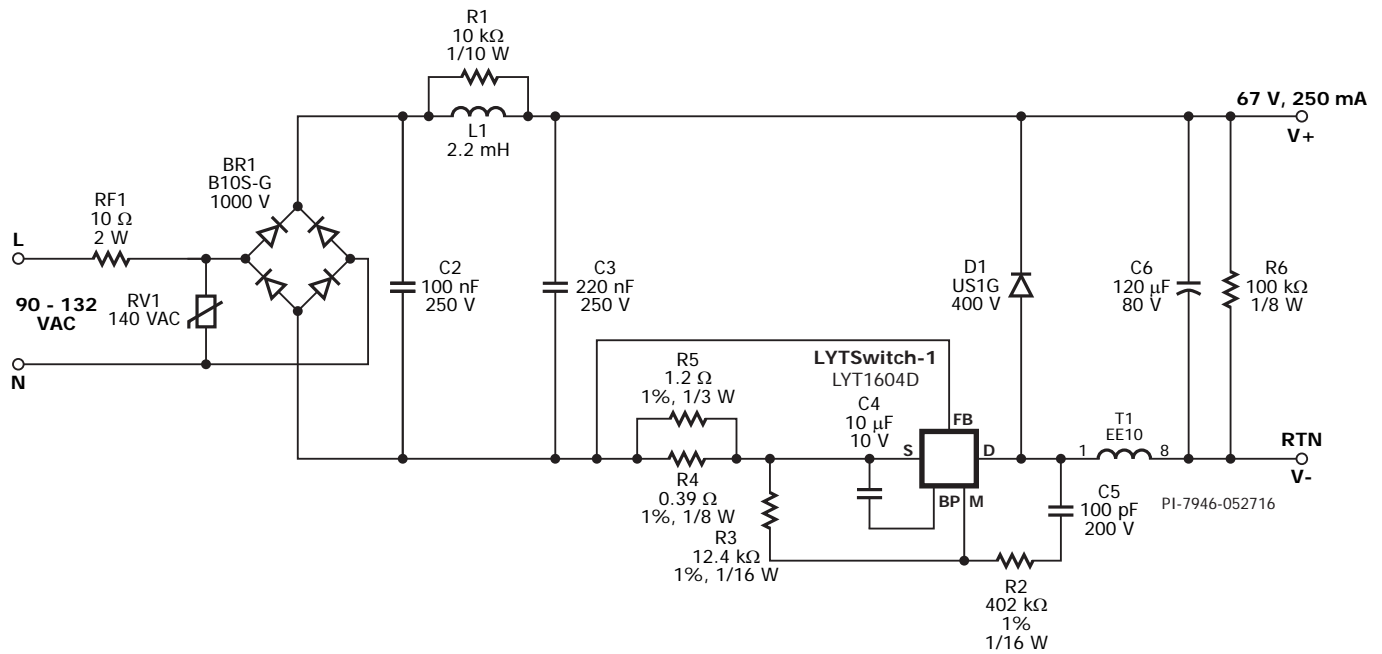
16.2 W, 36 V, 450 mA or 40 V, 350 mA OUTPUT, 95 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED TAPPED-BUCK CONVERTER, T8 TUBE POWER SUPPLY



Tube Replacement Designs

LYTSwitch-1 – High-Efficiency, High Power Factor LED Driver (DER-541)

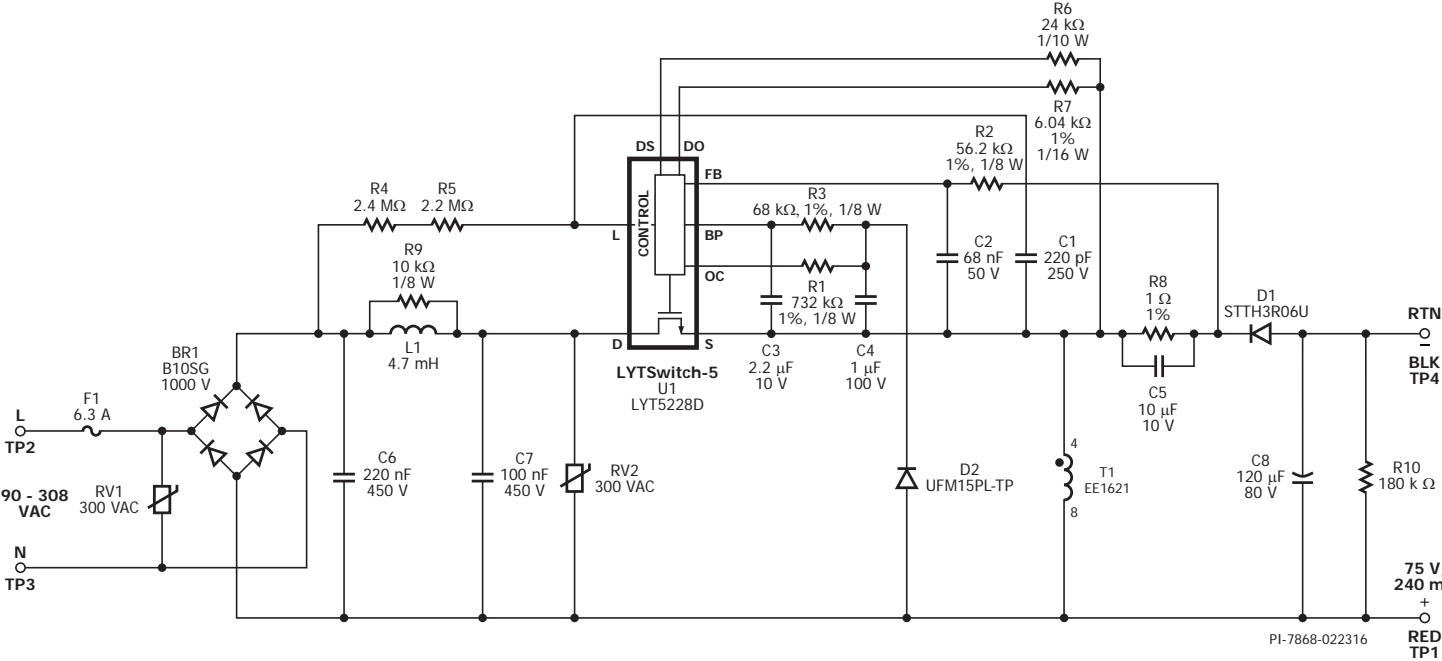
16.75 W, 67 V, 250 mA OUTPUT, 90 – 132 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, TUBE END POWER SUPPLY



Tube Replacement Designs

LYTSwitch-5 – High-Efficiency, High Power Factor LED Driver (DER-526)

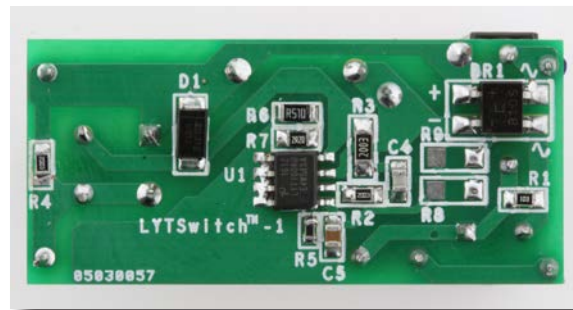
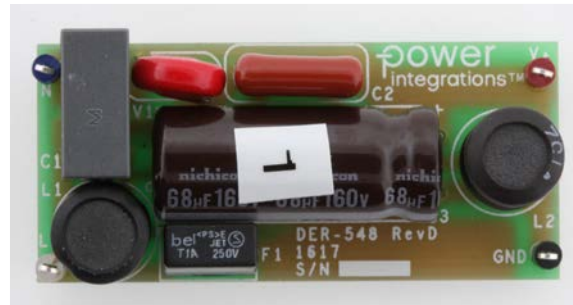
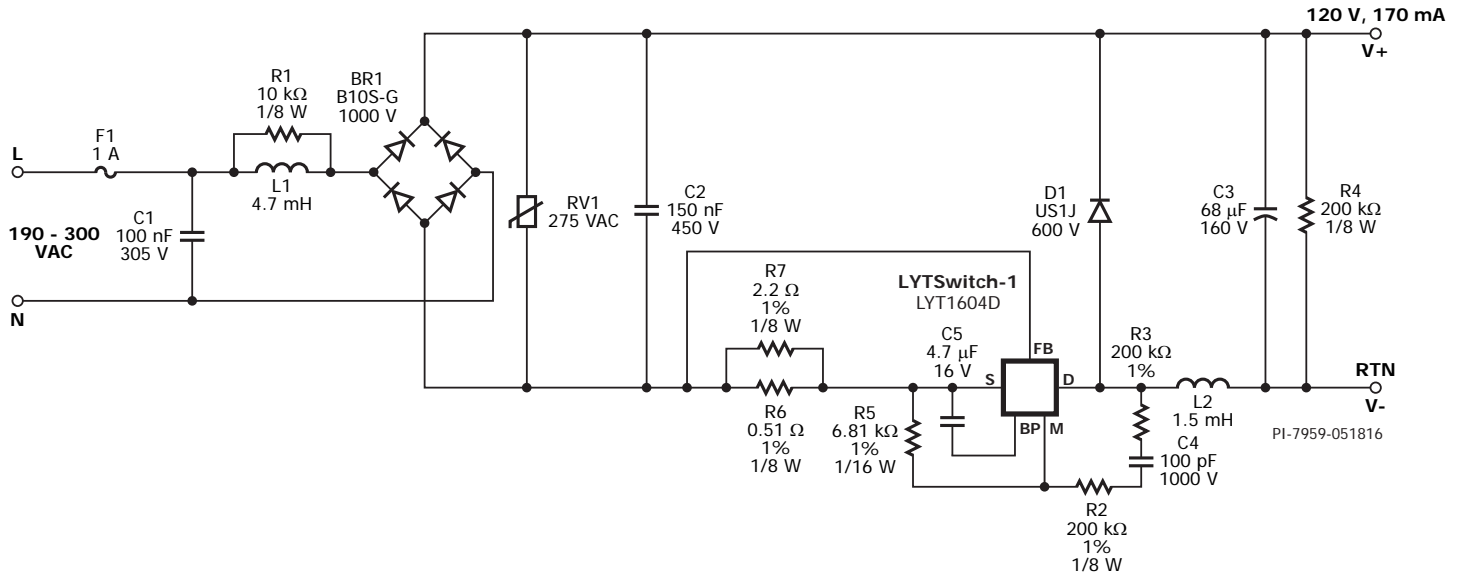
18 W, 75 V, 240 mA OUTPUT, 90 – 308 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, T8 TUBE POWER SUPPLY



Tube Replacement Designs

LYTSwitch-1 – High-Efficiency, High Power Factor LED Driver (DER-548)

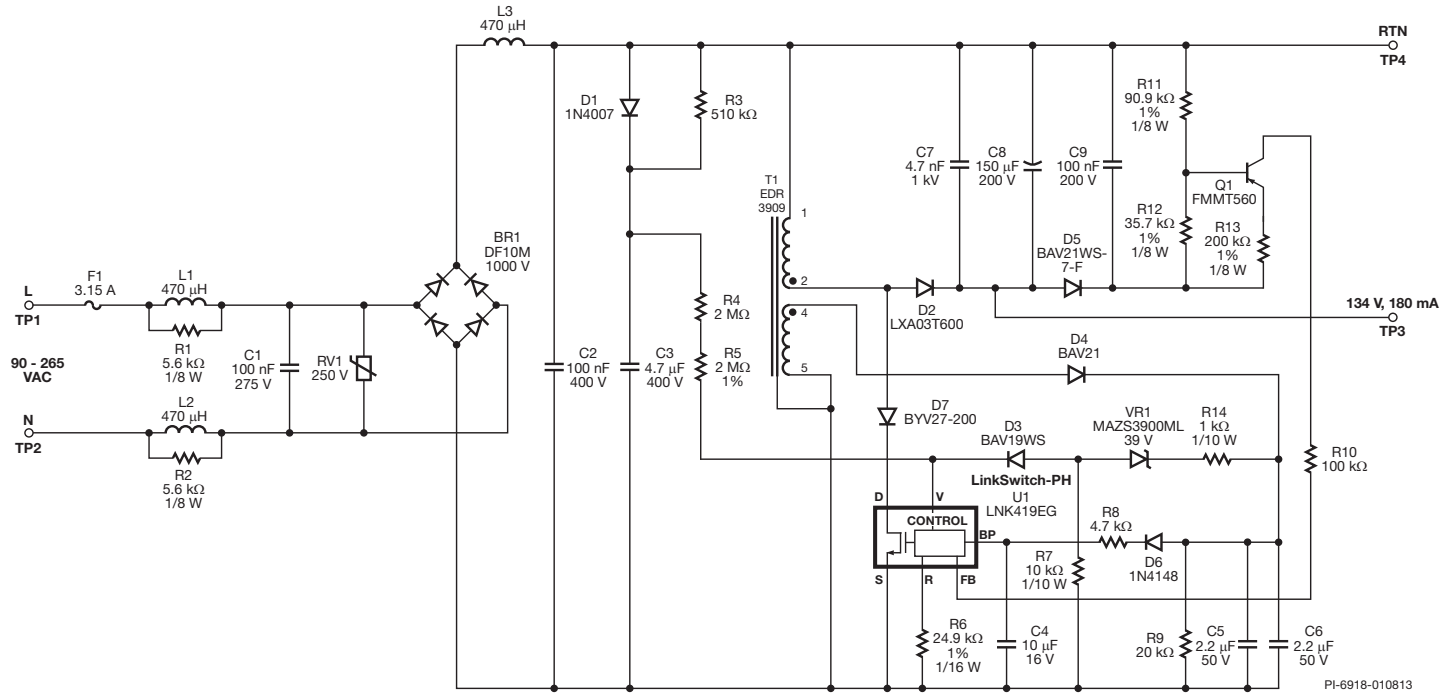
20 W, 120 V, 170 mA OUTPUT, 190 – 300 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK, TUBE END POWER SUPPLY



Tube Replacement Designs

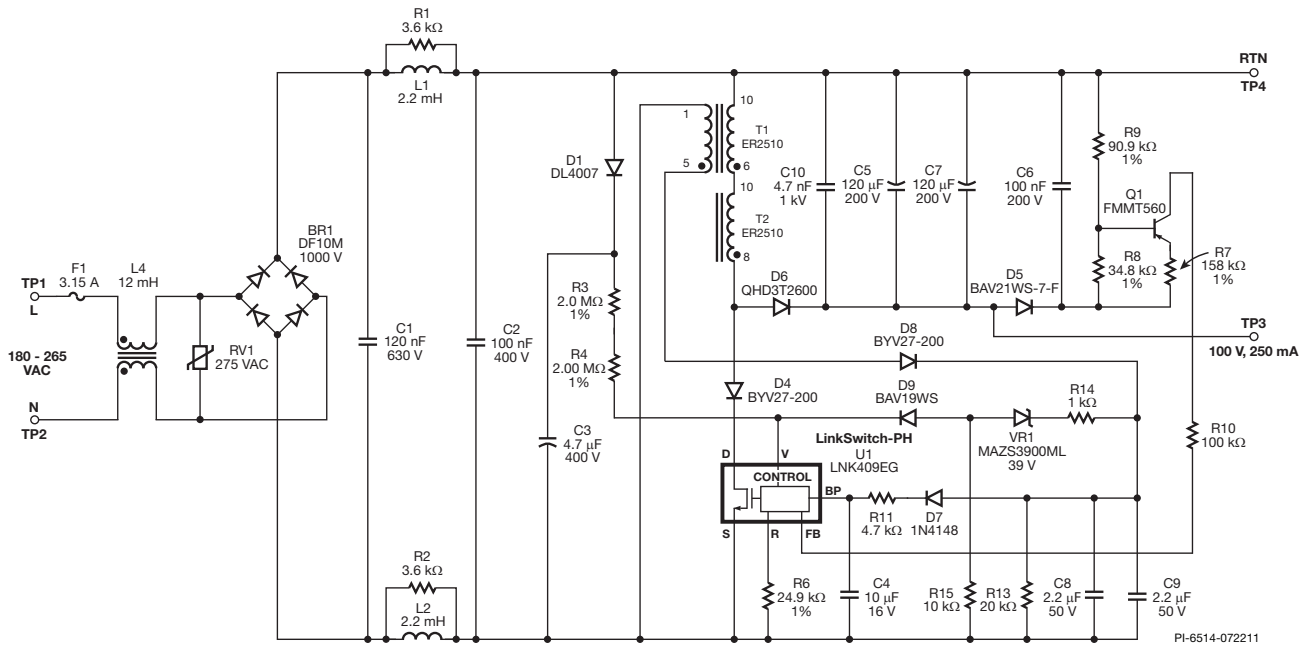
LinkSwitch-PH – High-Efficiency, High Power Factor LED Driver (DER-356)

24 W, 134 V, 180 mA OUTPUT, 90 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, T10 POWER SUPPLY



LinkSwitch-PH – High-Efficiency, High Power Factor LED Driver (DER-287)

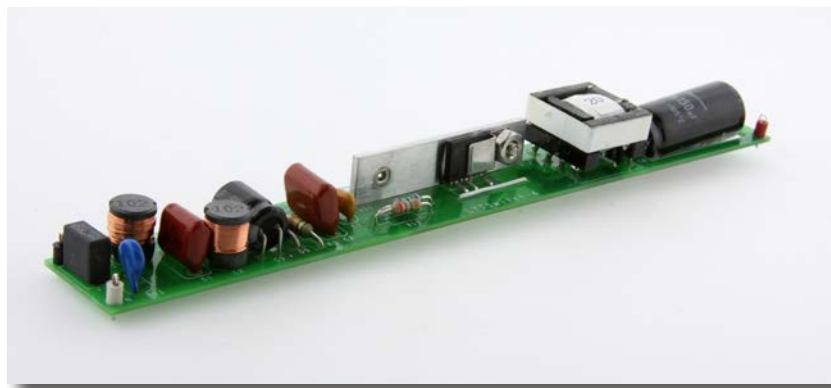
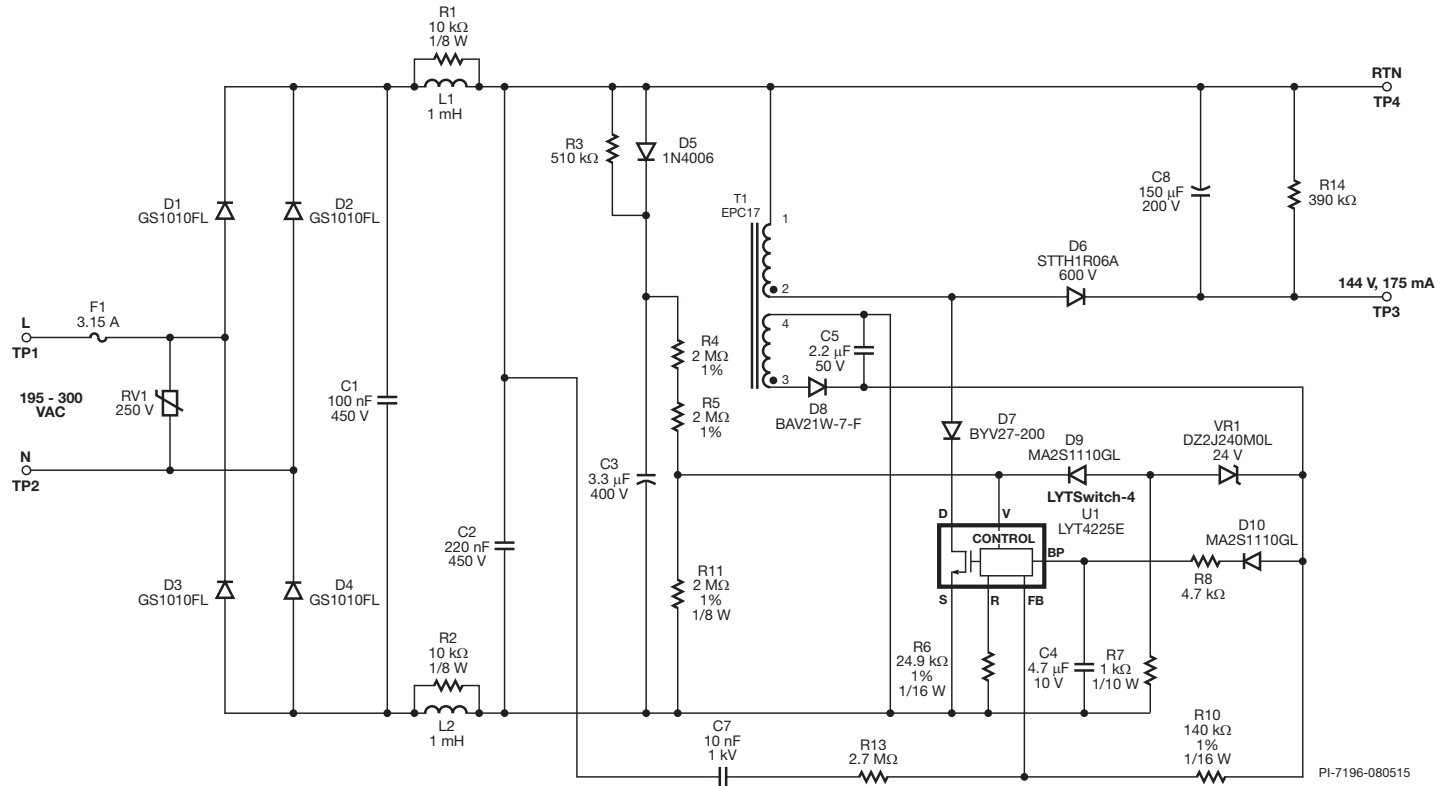
25 W, 100 V, 250 mA OUTPUT, 180 – 265 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST CONVERTER, T8 POWER SUPPLY



Tube Replacement Designs

LYTSwitch-4 – High-Efficiency, High Power Factor, Low THD LED Driver (DER-405)

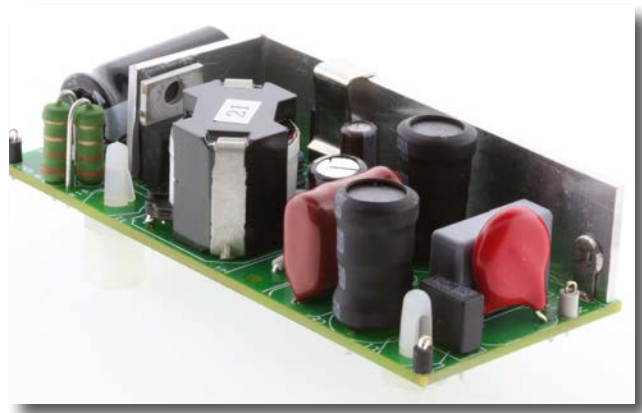
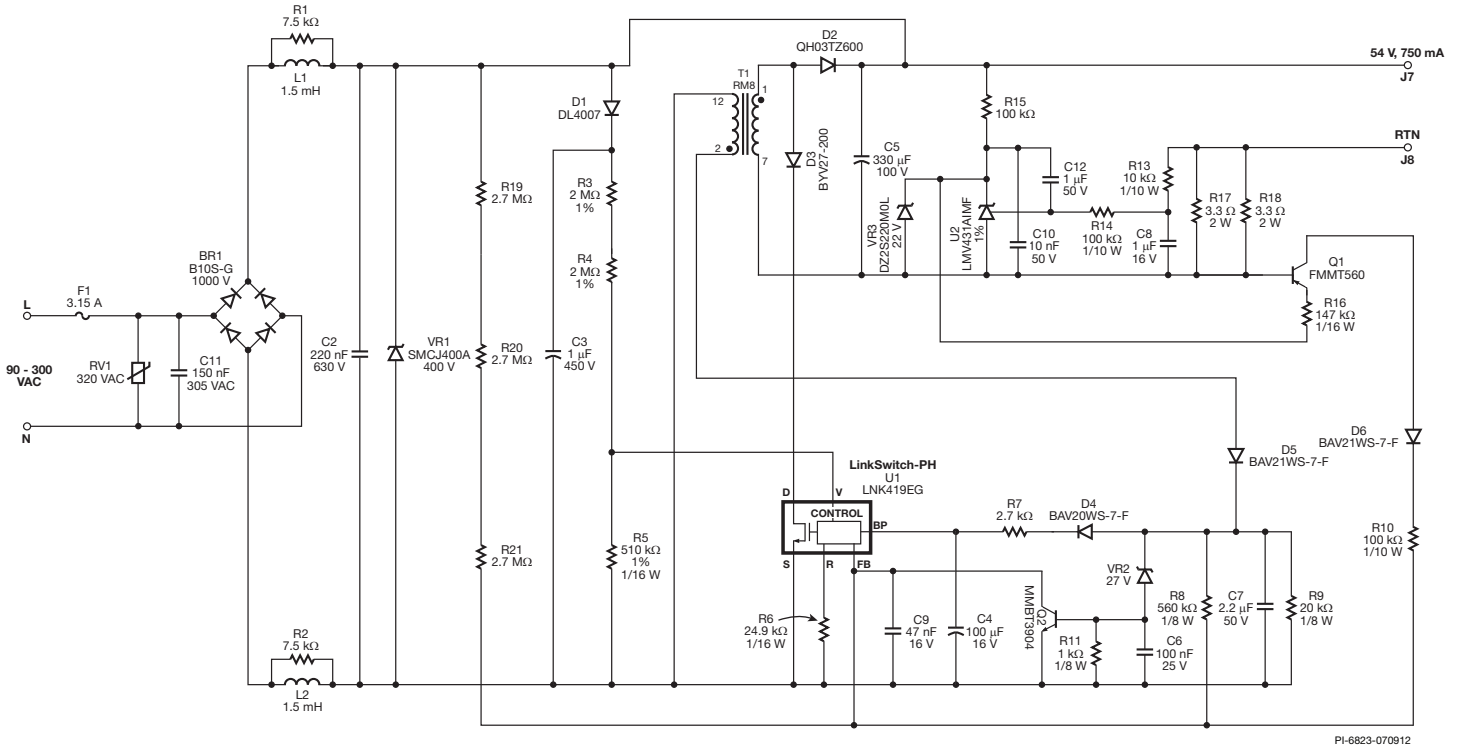
25 W, 144 V, 175 mA OUTPUT, 195 – 300 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK-BOOST, T10 POWER SUPPLY



High Power LED Designs

LinkSwitch-PH – High-Efficiency, High Power Factor LED Driver (DER-340)

40.5 W, 54 V, 750 mA OUTPUT, 90 – 300 VAC INPUT, SINGLE-STAGE PFC, NON-ISOLATED BUCK CONVERTER, STREET LIGHT POWER SUPPLY



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