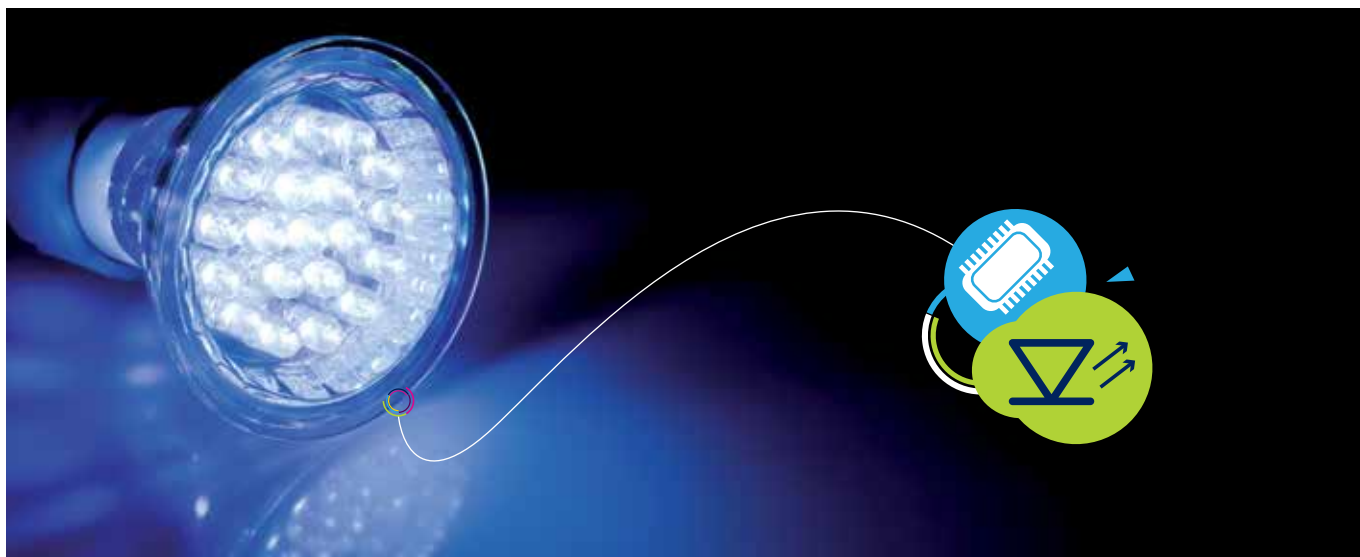


# Off-line LED driving solutions

## Top performances and extended lifetime in your LED based designs



### HVLED815PF based demoboards - High power factor off-line LED driver with constant output current and primary-sensing regulation (PSR)

Six different HVLED815PF – based demoboards have been designed in order to meet the specific needs of the off-line LED driving with the best optimized solutions.

Isolated and not isolated topologies, constant voltage and constant current output, triac dimmable compatibility have been combined in these six different applications.

#### KEY FEATURES

- CC/CV PSR applications
- High power factor (>0.9) in all the topologies and in all the input voltage range
- Efficiency >80% in all the topologies and in all the power ranges
- Optocoupler not needed
- Quasi-resonant operation mode
- 800 V avalanche-rugged power MOSFET integrated in the HVLED815PF
- High-voltage start-up integrated in the HVLED815PF
- Safe against open or shorted LED string
- Output current accuracy +/-3%

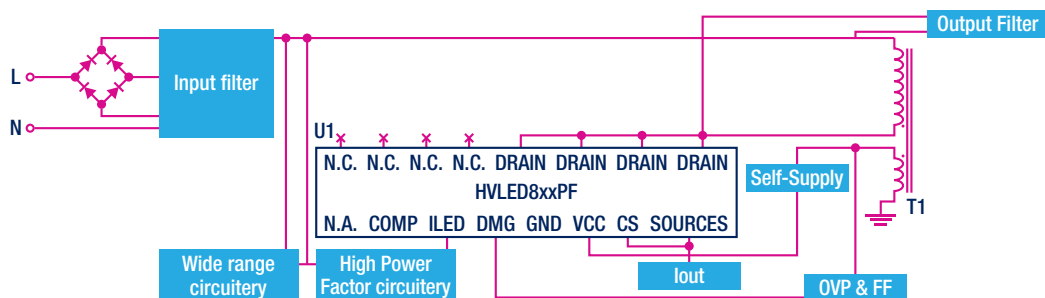
#### KEY BENEFITS

- Reduced external part count to allow very small form factors and simplified design
- Highly efficient solution thanks to the high power factor
- Robustness and compactness is guaranteed thanks to the internal power MOSFET and HV start up
- Accurate primary-current control avoids the use of secondary sensing, reducing costs and complexity

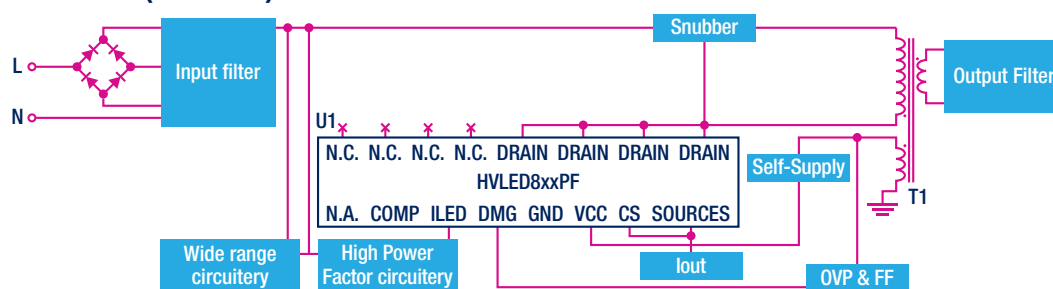
## HVLED815PF

ST's HVLED815 is a high-voltage primary switcher designed to operate directly from the rectified mains with minimum external parts and with a high power factor to provide an efficient, compact and cost-effective solution to drive LEDs. This IC combines a high-performance PWM controller chip and an 800 V, avalanche-rugged power MOSFET, in the same package. The PWM is a peak current-mode controller IC specifically designed for quasi resonant (QR) flyback LED drivers, with constant output current (CC) regulation using primary sensing feedback.

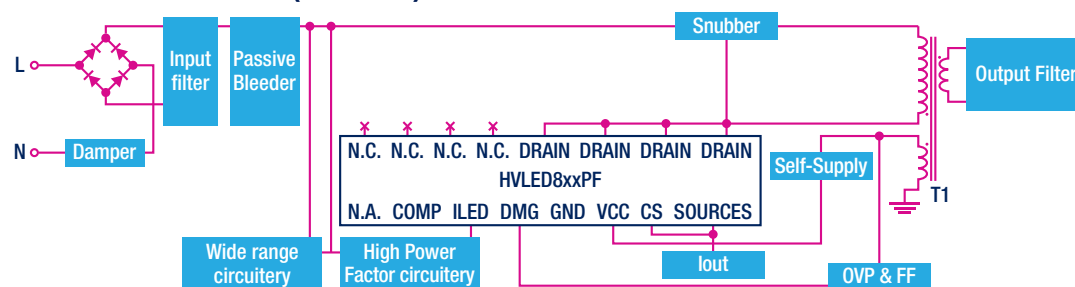
### NOT ISOLATED TOPOLOGY (BUCK-BOOST)



### ISOLATED TOPOLOGY (FLYBACK)



### DIMMABLE ISOLATED TOPOLOGY (FLYBACK)



## SUMMARY TABLE

Order code	Core product	Main application power range	Nominal Output Current/Voltage	Power Factor	Dimmer	Topology
EVLHVLED815W10A	HVLED815PF	10 W at Wide range <sup>1</sup>	140 mA - Constant current regulation	>0.9	-	Buck-Boost
EVLHVLED815W10F	HVLED815PF	10 W at Wide range <sup>1</sup>	455 mA - Constant current regulation	>0.95	-	Flyback
EVLHVLED815W8CV	HVLED815PF	8 W in Eu range <sup>2</sup>	25 V - Constant voltage regulation	>0.98	-	Flyback
EVALHVLED815W15	HVLED815PF	15 W in Eu range <sup>2</sup>	485 mA - Constant current regulation	>0.95	-	Flyback
STEVAL-ILL044V1	HVLED815PF	9 W in US range <sup>3</sup>	175 mA - Constant current regulation	>0.98	Triac compatible	Flyback
STEVAL-ILL045V1	HVLED815PF	9 W in US range <sup>3</sup>	175 mA - Constant current regulation	>0.98	Triac compatible	Buck-Boost

Notes: 1: 85 to 265 VAC; 2: 200 to 265 Vac; 3: 90 V to 132 Vac



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